



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

August 6, 2010

Mr. Timothy J. O'Connor  
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 AND POWER UPRATE REVIEW INSPECTION REPORT  
05000263/2010003**

Dear Mr. O'Connor:

On June 30, 2010, 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 July 13, 2010, 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.

Based on the results of this inspection, two NRC-identified findings of very low safety significance were identified. These findings involved violations of NRC requirements. However, because of their very low safety significance, and because the issues were entered into your corrective action program, the NRC is treating the issues as non-cited violations (NCVs) in accordance with Section VI.A.1 of the NRC Enforcement Policy.

If you contest the subject or severity of these NCVs, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001, with a copy to the Regional Administrator, U.S. Nuclear Regulatory Commission - Region III, 2443 Warrenville Road, Suite 210, Lisle, IL 60532-4352; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and the Resident Inspector Office at the Monticello Nuclear Generating Plant. In addition, if you disagree with the 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 Monticello.

T. O'Connor

-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 document system (ADAMS). ADAMS is accessible from the NRC Website at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

***/RA/***

Kenneth Riemer, Chief  
Branch 2  
Division of Reactor Projects

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

Enclosure: Inspection Report 05000263/2010003  
w/Attachment: Supplemental Information

cc w/encl: Distribution via ListServe

U. S. NUCLEAR REGULATORY COMMISSION

REGION III

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

Report No: 05000263/2010003

Licensee: Northern States Power Company, Minnesota

Facility: Monticello Nuclear Generating Plant

Location: Monticello, MN

Dates: April 1 through June 30, 2010

Inspectors: S. Thomas, Senior Resident Inspector  
L. Haeg, Resident Inspector  
M. Jones Jr., Reactor Inspector  
M. Phalen, Health Physicist, DRS

Approved by: Kenneth Riemer, 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).....	6
1R07 Annual Heat Sink Performance (71111.07).....	7
1R11 Licensed Operator Requalification Program (71111.11) .....	8
1R12 Maintenance Effectiveness (71111.12) .....	9
1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13).....	10
1R15 Operability Evaluations (71111.15).....	11
1R18 Plant Modifications (71111.18) .....	11
1R19 Post-Maintenance Testing (71111.19).....	14
1R22 Surveillance Testing (71111.22).....	15
2. RADIATION SAFETY .....	19
2RS1 Radiological Hazard Assessment and Exposure Controls (71124.01).....	19
4. OTHER ACTIVITIES .....	24
4OA1 Performance Indicator Verification (71151).....	24
4OA2 Identification and Resolution of Problems (71152).....	26
4OA3 Follow-Up of Events and Notices of Enforcement Discretion (71153).....	28
4OA6 Management Meetings .....	29
4OA7 Licensee-Identified Violations.....	29
SUPPLEMENTAL INFORMATION .....	1
Key Points of Contact.....	1
List of Items Opened, Closed and Discussed.....	1
List of Documents Reviewed.....	2
List of Acronyms Used .....	8

## SUMMARY OF FINDINGS

IR 05000263/2010003; 04/01/2010 – 06/30/2010; Monticello Nuclear Generating Plant; Plant Modifications; Surveillance Testing.

This report covers a three-month period of inspection by resident inspectors and announced baseline inspections by regional inspectors. Two Green findings were identified by the inspectors. These findings were considered to be non-cited violations (NCVs) 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. A finding of very low safety significance and associated NCV of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified by the inspectors for the licensee, on two occasions during the lift and transfer of the General Electric Zinc Injection Passivation (GEZIP) skid, failing to adhere to the load height restrictions documented in Procedure 8117, "Turbine Maintenance Procedure Heavy Load Movement over Safe Shutdown Equipment on the Turbine Floor," a procedure affecting quality. This resulted in the licensee not evaluating and managing the risk associated with moving a heavy load above and in close proximity to the Division I emergency service water piping. The licensee immediately placed a restriction on moving heavy loads on the turbine floor until the appropriate corrective actions can be implemented. The inspectors determined that the performance deficiency affected the cross-cutting area of Human Performance, having work control components, and involving aspects associated appropriately planning work activities by incorporating risk insights. [H.3(a)]

The inspectors determined that the failure to adequately evaluate two deviations from the acceptable heavy load path for the transport and placement of the new GEZIP skid was a performance deficiency, because it was the result of the failure to meet a requirement and 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, Appendix B, and determined that the issue was more than minor because it could reasonably be viewed as a precursor to a significant event. Specifically, the licensee failed to manage the risk of moving a heavy load above and in close proximity to the Division I emergency service water piping. (Section 1R18)

- Green. The inspectors identified a finding of very low safety significance and associated NCV of Technical Specification (TS) 5.4.1 for the licensee's failure to appropriately implement an applicable procedure recommended in Regulatory Guide 1.33, Appendix A, Revision 2, February 1978. Specifically, the licensee approved TS surveillance activities to commence for the 250 Vdc battery chargers in 2008 without ensuring that the equipment was tested in the as-found condition. Due to improper sequencing of preventive maintenance activities for the battery chargers, and

subsequent inadequate review of the maintenance and testing order, the 250 Vdc battery chargers were unacceptably preconditioned prior to performing testing to satisfy the 24 month TS Surveillance Requirement 3.8.4.2. These issues were identified by the inspectors prior to the 2010 performance of the same surveillance tests. The licensee took immediate corrective actions and entered the issues into their corrective action program. The inspectors determined that the performance deficiency affected the cross-cutting area of Human Performance, having work control components, and involving aspects associated with appropriately coordinating work activities by incorporating actions to address the impact of the work on different job activities. [H.3(b)]

The inspectors determined that the issue was a performance deficiency because it was the result of the failure to meet a requirement, and the cause was reasonably within the licensee's ability to foresee and correct, and should have been prevented.

The inspectors determined that the performance deficiency was more than minor and a finding because, if left uncorrected, it would have had the potential to lead to a more significant safety concern. The inspectors applied IMC 0609, Attachment 4, "Phase 1 – Initial Screening and Characterization of Findings" to this finding. Under Column 2 of the Table 4a worksheet, the inspectors answered "Yes" to Question 1 because the finding did not result in loss of operability or functionality. Therefore, the finding was considered to be of very low safety significance. (Section 1R22)

**B. Licensee-Identified Violations**

No violations were identified.

## REPORT DETAILS

### Summary of Plant Status

Monticello operated at full power for most of the assessment period with the exception of brief downpower maneuvers to accomplish rod pattern adjustments and to conduct planned surveillance testing activities.

#### 1. REACTOR SAFETY

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

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

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

###### a. Inspection Scope

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

- 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 reassessment 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 corrective action program (CAP) items to verify that the licensee was identifying adverse weather issues at an appropriate threshold and entering them into their CAP in accordance with station corrective action procedures.

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

b. Findings

No findings were identified.

1R04 Equipment Alignment (71111.04)

.1 Quarterly Partial System Walkdowns

a. Inspection Scope

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

- 'A' control room ventilation (CRV) system with 'B' CRV out-of-service;
- Division I ESW (emergency service water) with Division II ESW inoperable due to clearance in effect for other maintenance; and
- high pressure coolant injection (HPCI) during reactor core isolation cooling (RCIC) outage.

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.

.2 Semi-Annual Complete System Walkdown

a. Inspection Scope

On May 4, 2010, the inspectors performed a complete system alignment inspection of the Division I residual heat removal (RHR) system to verify the functional capability of the system. This system was selected because it was considered both safety significant and risk significant in the licensee's probabilistic risk assessment. The inspectors walked down the system to review mechanical and electrical equipment lineups; electrical power availability; system pressure and temperature indications, as appropriate; component labeling; component lubrication; component and equipment cooling; hangers and supports; operability of support systems; and to ensure that ancillary equipment or debris did not interfere with equipment operation. A review of a sample of past and outstanding WOs was performed to determine whether any deficiencies significantly affected the system function. In addition, the inspectors reviewed the CAP database to ensure that system equipment alignment problems were being identified and appropriately resolved. Documents reviewed are listed in the Attachment to this report.

These activities constituted one complete system walkdown sample as defined in IP 71111.04-05.

b. Findings

No findings were identified.

1R05 Fire Protection (71111.05)

.1 Routine Resident Inspector Tours (71111.05Q)

a. Inspection Scope

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

- Fire Zone 12-A (lower 4kv bus area);
- Fire Zone 13-B (reactor feedwater pump and lube oil reservoir during hotwork);
- Fire Zones 7-A, B, and C (Division I 125V and 250V battery rooms);  
Division II 125V battery room);
- Fire Zone 8 (cable spreading room); and
- Fire Zones 13-A and 13-C (lube oil storage tank room and turbine building  
911' elevation east motor control center (MCC) area).

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 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. Documents reviewed for this inspection are listed in the Attachment to this report. The inspectors performed a walkdown of the following underground bunkers/manholes subject to flooding:

- NMH-333 (2R feeder);
- NMH-309 (1AR feeder);
- NMH-310 (1AR feeder and control); and
- CP103 (circulating water basin annunciators, discharge canal radiation monitors).

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

b. Findings

No findings were identified.

1R07 Annual Heat Sink Performance (71111.07)

.1 Triennial Review of Heat Sink Performance (71111.07T)

a. Inspection Scope

The inspectors reviewed operability determinations, completed surveillances, vendor manual information, calculations, performance test results and inspection results associated with the V-EAC-14A, 'A' CRV/emergency filtration train (EFT) 14A cooler. This cooler was selected based on the requirement that one train remain capable of performing its intended safety-related function of maintaining controlled environments in the main control room (MCR) and 250 Vdc battery room.

For the V-EAC-14A heat exchanger, the inspectors verified that testing, inspection, maintenance, and monitoring of biotic fouling and macro-fouling programs were adequate to ensure proper heat transfer. This was accomplished by verifying that the test method used was consistent with accepted industry practices; the test conditions were consistent with the selected methodology; and that the test acceptance criteria were consistent with the design basis values and results of heat exchanger performance testing. The inspectors also verified that the test results appropriately considered differences between testing conditions and design conditions; the frequency of testing based on trending of test results was sufficient to detect degradation prior to loss of heat removal capabilities below design basis values; and that test results considered test instrument inaccuracies and differences.

For the V-EAC-14A heat exchanger, the inspectors reviewed the methods and results of heat exchanger performance inspections. The inspectors verified the methods used to inspect and clean heat exchangers were consistent with as-found conditions identified and expected degradation trends and industry standards, the licensee's inspection and cleaning activities had established acceptance criteria consistent with industry standards, and the as-found results were recorded, evaluated, and appropriately dispositioned such that the as-left condition was acceptable.

In addition, the inspectors verified that the condition and operation of the V-EAC-14A heat exchanger were consistent with design assumptions in the heat transfer calculation and as described in the final safety analysis report. This included verification that no tubes were plugged in the heat exchanger. The inspectors noted the licensee is evaluating the plugging limits based on capacity and heat transfer assumptions. The inspectors verified the licensee implements adequate controls and operational limits to prevent heat exchanger degradation due to excessive flow-induced vibration during operation. In addition, eddy current test reports and visual inspection records were reviewed to determine the structural integrity of the heat exchanger.

The inspectors verified the performance of the ultimate heat sink (UHS) and the subcomponents such as piping, intake screens, pumps, valves, etc. by tests or other equivalent methods to ensure availability and accessibility to the inplant cooling water systems.

The inspectors reviewed the licensee's operation of the service water system and UHS. This included the review of licensee's procedures for a loss of service water, loss of the intake structure. In addition, the inspectors verified that macrofouling was adequately monitored, trended, and controlled by the licensee to prevent clogging. The inspectors

verified that licensee's biocide treatments for biotic control were adequately conducted and the results monitored, trended, and evaluated. The inspectors also verified that the licensee maintains adequate pH, calcium hardness, etc.

The inspectors performed a system walkdown on the ESW system to verify the licensee's assessment on structural integrity. In addition, the inspectors reviewed available licensee's testing and inspections results, disposition of any active thru-wall pipe leaks, and the history of thru-wall pipe leakage to identify any adverse trends since the last NRC inspection. For buried or inaccessible piping, the inspectors reviewed the licensee's pipe testing, inspection, monitoring program to verify structural integrity, and ensured that any leakage or degradation has been appropriately identified and dispositioned by the licensee. In addition, the inspectors verified that service water pump bay silt accumulation is monitored, trended, and maintained at an acceptable level by the licensee.

In addition, the inspectors reviewed condition reports related to the coolers and heat sink performance issues to verify that the licensee had an appropriate threshold for identifying issues and to evaluate the effectiveness of the corrective actions. The documents that were reviewed are included in the Attachment to this report.

These inspection activities constituted two triennial heat sink inspection samples as defined in IP 71111.07-05.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification Program (71111.11)

.1 Resident Inspector Quarterly Review (71111.11Q)

a. Inspection Scope

On May 3, 2010, the inspectors observed a crew of licensed operators in the plant's simulator during licensed operator requalification examinations to verify that operator performance was adequate; evaluators were identifying and documenting crew performance issues; 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 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:

- Division II 250 Vdc system (a)(1) status due to unavailability hours of D90 swing charger; and
- adverse trend on balance of plant level transmitters.

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 reclassification; 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:

- 1AR transformer ground fault during switching activities;
- missed safety relief valve lift surveillance tests;
- 13 RHRSW pump inservice test (IST) evaluation for degraded differential pressure;
- installation and testing of zinc injection system;
- power supply failure for 'B' spent fuel pool and reactor building ventilation plenum radiation monitors; and
- main turbine stop valve No. 4 reactor protection system (RPS) limit switch emergent issues during quarterly testing.

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

No findings were identified.

1R15 Operability Evaluations (71111.15)

.1 Operability Evaluations

a. Inspection Scope

The inspectors reviewed the following issues:

- CAP 01226704; separated weld on 11 emergency diesel generator (EDG) fuel oil tubing support;
- CAP 01202800; rise in unidentified drywell leakage on daily plant reports; and
- CAP 01232941; P-11, insufficient flow and discharge pressure.

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

This operability inspection constituted three samples as defined in IP 71111.15-05.

b. Findings

No findings were identified.

1R18 Plant Modifications (71111.18)

.1 Temporary Plant Modifications

a. Inspection Scope

The inspectors reviewed the following temporary modifications:

- temporary cooling for the condenser room (EC 15527; EC 15500; EC 15474; and, EC 16142); and
- back seating inboard HPCI steam supply isolation valve MO-2034 (EC 15893).

The inspectors compared the temporary configuration changes and associated 10 CFR 50.59 screening and evaluation information 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 systems. The inspectors also compared the licensee's information to operating experience information to ensure that lessons learned from other utilities had been incorporated into the licensee's decision to implement the

temporary modification. The inspectors, as applicable, performed field verifications to ensure that the modifications were installed as directed; the modifications operated as expected; 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. Lastly, the inspectors discussed the temporary modification with operations, engineering, and training personnel to ensure that the individuals were aware of how extended operation with the temporary 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 two temporary modification samples as defined in IP 71111.18-05.

b. Findings

Introduction

A finding of very low safety significance and non-cited violation (NCV) of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified by the inspectors for the licensee on two occasions, during the lift and transfer of the General Electric Zinc Injection Passivation (GEZIP) skid, for failing to adhere to the load height restrictions documented in Procedure 8117, "Turbine Maintenance Procedure Heavy Load Movement Over Safe Shutdown Equipment on the Turbine Floor," a procedure affecting quality. This resulted in the licensee not evaluating and managing the risk associated with moving a heavy load above and in close proximity to the Division I ESW piping.

Description

On May 21, 2010, the licensee staged an air handling unit on the turbine floor in preparation for the installation of Engineering Change (EC) 16142, "Temporary Chiller Unit for the Condenser Room," which was to occur the following day. Since EC 16142 had not been approved, the staging and initial installation work was being performed "At-Risk," in accordance with WO 405117, "Set-Up Air Handling Equipment during Down Power." To place the air handler, which weighed approximately 5200 pounds, in the location required by the WO, the heavy load had to be lifted and transverse the entire length of the turbine deck. Several performance deficiencies associated with the lifting activity and final placement of the air handler were identified. These performance deficiencies included:

- WO 405117 did not identify the final placement location of the air handler on the turbine floor as a critical step, or provide sufficient detail to ensure proper placement;
- The licensee did not perform Procedure 8117, "Turbine Maintenance Procedure Heavy Load Movement Over Safe Shutdown Equipment on Turbine Floor," as required by WO 405117 (Inspector identified);
- The licensee performed several steps of Procedure 8151, "Heavy Load Movement Procedure," incorrectly;
- Contrary to procedural guidance contained in Procedure 8117, the heavy load [air handler] was lifted in excess of 6" over portions of the turbine floor located above safe shutdown equipment (Inspector identified);

- The location where the air handler was placed on turbine floor had not been analyzed for the weight of the air handler; and
- Subsequent to the identification of the improper placement of the air handler unit, the licensee did not enter the issue into their CAP (Inspector identified).

After the inspectors questioned the licensee regarding the impact of lifting the heavy load in excess of 6" over sensitive areas of the turbine floor, the licensee performed EC 16315, "Evaluation of Potential Drop of Air Handler on Turbine Deck," to evaluate the impact of dropping the air handler from the maximum height (8' 7") encountered during the lift. The evaluation concluded that the safe shutdown equipment located below the turbine floor would not have been adversely impacted by a drop of the air handler during its transfer to its final location on the turbine floor. The inspectors evaluated this event and determined that since there was no actual risk to safe shutdown equipment, the performance deficiencies associated with event were not of more than minor safety significance. The licensee entered this event into their corrective action program as CAPs 1234429, 1236724, 1235567, 1236535, and 1236345.

During the extent-of-condition associated with the event described above, the inspectors discovered that a similar performance deficiency associated with the performance of Procedure 8117 had occurred during the movement of another heavy load through the same sensitive area of the turbine floor earlier this year. On April 6, the licensee moved a new GEZIP skid (3920 pounds), utilizing approximately the same load path that was used to stage the air handler described above. The significant difference in the two lifts was that the GEZIP skid lift did not terminate on the turbine floor, but continued down through an opening in the turbine floor to be placed adjacent to the reactor feedwater pumps. Again, several performance deficiencies were associated with this lifting activity. These performance deficiencies included:

- Contrary to procedural guidance contained in 8117, the heavy load [GEZIP skid] was lifted in excess of 6" above the turbine floor to clear a radiation boundary fence that was located in the load path;
- Contrary to procedural guidance contained in 8117, the heavy load [GEZIP skid] was lifted in excess of 6" above the turbine floor to clear a hand rail prior to lowering the GEZIP skid to the turbine building 911' level;
- Contrary to procedural guidance contained in 8117, the two deviations from the load path required by Procedure 8117 were not approved by PORC; and
- The high risk plan, the pre-job brief, or the evaluation of the load path associated with the transport and set of the new GEZIP skid did not address the risk associated with lowering the skid in close proximity to the Division I ESW piping.

The licensee entered this event into their corrective action program as CAPs 1236998 and 1237966.

### Analysis

The inspectors determined that the failure to adequately evaluate two deviations from the acceptable heavy load path for the transport and placement of the new GEZIP skid 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 IMC 0612, Appendix B, and determined that the issue was more than minor because it could reasonably be viewed as a precursor to a significant event. Specifically, the licensee failed to manage the risk of moving a heavy load above and in close proximity to the Division I ESW piping. Therefore, the performance deficiency was more than minor and a finding.

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 control components, and involving aspects associated appropriately planning work activities by incorporating risk insights. [H.3(a)]

The inspectors applied IMC 0609, Attachment 4, "Phase 1 - Initial Screening and Characterization of Findings" to this finding. Under Column 2 of the Table 4a worksheet, the inspectors answered "No" to all five questions; therefore, the finding was screened to be of very low safety significance (Green).

### Enforcement

Title 10 CFR 50, Appendix B, Criterion V 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, the licensee on two occasions during the lift and transfer of the GEZIP skid, failed to adhere to the load height restrictions documented in Procedure 8117, "Turbine Maintenance Procedure Heavy Load Movement over Safe Shutdown Equipment on the Turbine Floor," a procedure affecting quality. This resulted in the licensee not evaluating and managing the risk associated with moving a heavy load above and in close proximity to the Division I ESW piping. Because this violation was of very low safety significance and was entered into the licensee's CAP (AR 1236998, 1237966), this violation is being treated as an NCV, consistent with Section VI.A.1 of the NRC Enforcement Policy. (NCV 05000263/2010003-01)

## 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:

- testing of Division II 250 Vdc D90 swing charger following PM;
- testing subsequent to the replacement of SW-260 (service water to ESW crosstie isolation);
- testing of RCIC system following PM;
- testing of Division II RHR system following PM;
- testing of 12 control rod drive system following PM;
- testing of reactor building chillers V-AC-10A and 'B' following PM; and
- testing of HPCI system following PM.

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 TS; 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.

This inspection constituted seven PM testing samples as defined in IP 71111.19-05.

b. Findings

No findings were identified.

1R22 Surveillance Testing (71111.22)

.1 Surveillance Testing

a. Inspection Scope

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

- standby liquid control (SBLC) quarterly pump and valve tests (IST);
- emergency core cooling system (ECCS) high drywell pressure sensor calibration (routine);
- reactor building to torus vacuum breaker operability check (routine);
- drywell high pressure scram and Groups 2, 3, and secondary containment test and calibration (routine);
- D90 250 Vdc swing charger 24 month capacity test (routine); and
- containment sump flow measurement instrumentation (reactor coolant system (RCS)-leak detection).

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 were 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 was 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 four routine surveillance testing samples; one IST sample; and one RCS leak detection inspection sample as defined in IP 71111.22, Sections -02 and -05.

b. Findings

Introduction

The inspectors identified a finding of very low safety significance and associated NCV of TS 5.4.1 for the licensee's failure to appropriately implement an applicable procedure recommended in Regulatory Guide 1.33, Appendix A, Revision 2, February 1978. Specifically, the licensee approved TS surveillance activities to commence for the 250 Vdc battery chargers in 2008 without ensuring that the equipment would be tested in the as-found condition. This resulted in the unacceptable preconditioning of the 250 Vdc battery chargers in 2008.

## Description

On April 26, 2010, during a review of scheduled surveillance tests for the work week, the inspectors identified that a WO for preventive maintenance (PM) activities for the Division II 250 Vdc battery charger D90 and ESP-ELE-0549-09, "D90 250 VDC Swing Charger Capacity Test," were scheduled for the same timeframe on April 27, 2010. Procedure ESP-ELE-0549-09 is performed every 24 months to satisfy TS surveillance requirement (SR) 3.8.4.2 to verify that the D90 battery charger can deliver the required current at the required minimum float voltage for greater than four hours. After identifying this scheduling issue, the inspectors promptly questioned the senior reactor operator (SRO) stationed at the work execution center (responsible, in part, with shift operations management, for releasing WOs and surveillance tests to the field for implementation) which activity was being performed first; the TS surveillance test (ESP-ELE-0549-09) or the PM activity. The inspectors also reviewed the work impact statement associated with the TS surveillance test procedure to determine whether any preconditioning concerns were identified. Because the work schedule was not specific and the impact statement for the surveillance test did not identify any preconditioning concerns, the SRO entered the issues into the corrective action program (CAP 01229358) and administratively restricted performance of the PM activity and surveillance test scheduled for the following day. The inspectors next questioned the electrical maintenance supervisor assigned to the PM activity and surveillance test. The supervisor intended on conducting the tasks in the same order as had been done in 2008: the PM activity before the surveillance test. Based on the inspector's questions and concerns, the licensee rearranged the D90 PM activities and surveillance test on the schedule to ensure that the equipment was tested in the as-found condition. The licensee also reviewed the work schedule for the remaining battery charger PM activities and surveillances scheduled during the following weeks to ensure that no preconditioning could occur.

The licensee performed an evaluation of the 2008 conduct of PM activities and surveillance tests for the 250 Vdc battery chargers to determine whether preconditioning occurred; and if so, whether the preconditioning was acceptable or unacceptable. Because TS SR 3.8.4.2 was a new requirement of the Improved Technical Specifications that the licensee had transitioned to in June 2006, the 2008 performance of the surveillances was the first time the tests were required to be performed. Therefore, the licensee determined that only the PM activities and surveillance testing in 2008 were applicable for an extent-of-condition review. The inspectors were presented with a white paper outlining the licensee's position that concluded that the 2008 PM activities were most likely conducted prior to surveillance testing and the scope and intrusiveness of the PM activities had reasonable potential to mask the as-found condition of the 250 Vdc battery chargers. Therefore, the licensee concluded that the conduct of the PM activities on the 250 Vdc battery chargers in 2008 had unacceptably preconditioned the TS equipment. The licensee generated an additional CAP (01235130) to document the conclusions of their review and to perform additional causal evaluation of the issues.

## Analysis

The inspectors determined that per IMC 0612, Appendix B, "Issue Screening," the failure to ensure that the 250 Vdc battery chargers were TS surveillance tested in the as-found condition in 2008, in accordance with Procedure FP-G-DOC-03,

“Procedure Use and Adherence,” was a performance deficiency because it was the result of the failure to meet a requirement, and the cause was reasonably within the licensee’s ability to foresee and correct and should have been prevented. Because the performance deficiency resulted in the unacceptable preconditioning of the 250 Vdc battery chargers in 2008, the inspectors screened the performance deficiency to determine whether it was more than minor per IMC 0612, Appendix B. The inspectors determined that the performance deficiency; if left uncorrected, would have had the potential to lead to a more significant safety concern. Specifically, performing PM prior to determining the as-found condition of the 250 Vdc battery chargers; if left uncorrected, had the potential to result in the inability to demonstrate the past-operability of the battery chargers since the last TS surveillance test, a more significant safety concern. Therefore, the performance deficiency was more than minor and a finding.

The inspectors determined that the contributing cause that provided the most insight into the performance deficiency was associated with the improper review and scheduling of the PM activities and TS surveillance testing in 2008 and 2010. The inspectors determined that the primary contributing cause was associated with the cross-cutting area of Human Performance, having work control components, and involving aspects associated with appropriately coordinating work activities by incorporating actions to address the impact of the work on different job activities. [H.3(b)]

The inspectors applied IMC 0609, Attachment 4, "Phase 1 – Initial Screening and Characterization of Findings" to this finding. Under Column 2 of the Table 4a worksheet, the inspectors answered "Yes" to Question 1 because the finding did not result in loss of operability or functionality. Therefore, the finding was considered to be of very low safety significance (Green).

### Enforcement

Technical Specification 5.4.1 requires, in part, that written procedures shall be implemented covering the applicable procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978. Section 1.d of Regulatory Guide 1.33, Appendix A, includes administrative procedures for procedure adherence. Fleet Procedure FP-G-DOC-03, “Procedure Use and Adherence,” Revision 9, is the implementing guidance for procedure use and adherence at MNGP. Procedure FP-G-DOC-03 states, in part, that use of the term “SHALL” in documents denotes a required action...integral to meeting requirements. Procedure OWI-01.04, “Operations General Procedural Guidance,” Revision 19, establishes, in part, the procedure use requirements of FP-G-DOC-03 at MNGP. Step 4.2.1.H of OWI-01.04 states, in part, that “Shift Supervision SHALL approve procedure activities to commence after ensuring that test procedures that test installed equipment for operability are conducted in the as-found condition, without exercising, calibration, adjustment or any other preconditioning which may affect or alter the equipment response.” Contrary to this requirement, the licensee failed to ensure that TS surveillance testing for the 250 Vdc battery chargers in 2008 was conducted in the as-found condition due to PM activities being performed prior to the TS surveillance. Because this violation was of very low safety significance and was entered into the licensee’s CAP (01229358 and 01235130), this violation is being treated as an NCV, consistent with Section VI.A.1 of the NRC Enforcement Policy. (NCV 05000263/2010003-02)

## 2. RADIATION SAFETY

### Cornerstones: Public and Occupational Radiation Safety

#### 2RS1 Radiological Hazard Assessment and Exposure Controls (71124.01)

This inspection constituted one radiological hazard assessment and exposure control sample as defined in IP 71124.01 05.

##### .1 Inspection Planning (02.01)

###### a. Inspection Scope

The inspectors reviewed all licensee performance indicators (PIs) for the Occupational Radiation Safety Cornerstone for follow-up. The inspectors reviewed the results of radiation protection program audits (e.g., licensee's quality assurance audits or other independent audits). The inspectors reviewed any reports of operational occurrences related to occupational radiation safety since the last inspection. The inspectors reviewed the results of the audit and operational report reviews to gain insights into overall licensee performance.

###### b. Findings

No findings of significance were identified.

##### .2 Radiological Hazard Assessment (02.02)

###### a. Inspection Scope

The inspectors evaluated whether there had been changes to plant operations since the last inspection that may have resulted in a significant new radiological hazard for onsite workers or members of the public. The inspectors evaluated whether the licensee assessed the potential impact of these changes and has implemented periodic monitoring, as appropriate, to detect and quantify the radiological hazard.

The inspectors reviewed the last six radiological surveys from three selected plant areas. The inspectors evaluated whether the thoroughness and frequency of the surveys were appropriate for the given radiological hazard.

The inspectors conducted walkdowns of the facility, including radioactive waste processing, storage, and handling areas to evaluate material conditions and performed independent radiation measurements to verify conditions.

The inspectors selected the following radiologically risk-significant work activities that involved exposure to radiation:

- limit switch repairs on the No. 4 turbine stop valve;
- change out 'B' condensate demin filters; and
- Rv-3111 valve replacement.

For these work activities, the inspectors assessed whether the pre-work surveys performed were appropriate to identify and quantify the radiological hazard and to

establish adequate protective measures. The inspectors evaluated the radiological survey program to assess whether hazards were properly identified, including the following:

- identification of hot particles;
- the presence of alpha emitters;
- the potential for airborne radioactive materials, including the potential presence of transuranics and/or other hard-to-detect radioactive materials;
- the hazards associated with work activities that could suddenly and severely increase radiological conditions and that the licensee has established a means to inform workers of changes that could significantly impact their occupational dose; and
- severe radiation field dose gradients that can result in non-uniform exposures of the body.

The inspectors observed work in potential airborne areas and evaluated whether the air samples were representative of the breathing air zone. The inspectors evaluated whether continuous air monitors were located in areas with low background to minimize false alarms and were representative of actual work areas. The inspectors assessed whether the licensee had a program for monitoring levels of loose surface contamination in areas of the plant with the potential for the contamination to become airborne.

b. Findings

No findings of significance were identified.

.3 Instructions to Workers (02.03)

a. Inspection Scope

The inspectors selected five containers holding nonexempt licensed radioactive materials that may cause unplanned or inadvertent exposure of workers, and assessed whether the containers were labeled and controlled in accordance with 10 CFR 20.1904, "Labeling Containers," or met the requirements of 10 CFR 20.1905(g).

The inspectors reviewed the following radiation work permits (RWPs) used to access high radiation areas (HRAs) and evaluated the specified work control instructions or control barriers:

- WO (RWP Package) 407001; limit switch repairs on the No. 4 turbine stop valve; and
- WO (RWP Package) 399877; change out 'B' condensate demin filters.

For these RWPs, the inspectors assessed whether allowable stay times or permissible dose (including from the intake of radioactive material) for radiologically significant work under each RWP were clearly identified. The inspectors evaluated whether electronic personal dosimeter (EPD) alarm set-points were in conformance with survey indications and plant policy.

The inspectors reviewed selected occurrences where a worker's EPD noticeably malfunctioned or alarmed. The inspectors evaluated whether workers responded appropriately to the off-normal condition. The inspectors assessed whether the issue

was included in the corrective action program and dose evaluations were conducted as appropriate.

b. Findings

No findings of significance were identified.

.4 Contamination and Radioactive Material Control (02.04)

a. Inspection Scope

The inspectors observed locations where the licensee monitors potentially contaminated material leaving the radiological controlled area (RCA), and inspected the methods used for control, survey, and release from these areas. The inspectors observed the performance of personnel surveying and releasing material for unrestricted use and evaluated whether the work was performed in accordance with plant procedures.

The inspectors also reviewed whether the procedures were sufficient to control the spread of contamination and prevent unintended release of radioactive materials from the site. The inspectors assessed whether the radiation monitoring instrumentation had appropriate sensitivity for the type(s) of radiation present.

The inspectors reviewed the licensee's criteria for the survey and release of potentially contaminated material. The inspectors evaluated whether there was guidance on how to respond to an alarm that indicates the presence of licensed radioactive material.

The inspectors reviewed the licensee's procedures and records to verify that radiation detection instrumentation was used at its typical sensitivity level based on appropriate counting parameters. The inspectors assessed whether the licensee had established a de facto "release limit" by altering the instrument's typical sensitivity through such methods as raising the energy discriminator level or locating the instrument in a high radiation background area.

The inspectors selected two to three sealed sources from the licensee's inventory records and assessed whether the sources were accounted for and verified to be intact (i.e., they were not leaking their radioactive content).

The inspectors evaluated any transactions, since the last inspection, involving nationally tracked sources were reported in accordance with 10 CFR 20.2207.

b. Findings

No findings of significance were identified.

.5 Radiological Hazards Control and Work Coverage (02.05)

a. Inspection Scope

The inspectors evaluated ambient radiological conditions (e.g., radiation levels or potential radiation levels) during tours of the facility. The inspectors assessed whether the conditions were consistent with applicable posted surveys, RWPs, and worker briefings.

The inspectors evaluated the adequacy of radiological controls, such as required surveys, radiation protection job coverage (including audio and visual surveillance for remote job coverage), and contamination controls. The inspectors evaluated the licensee's use of EPDs in high noise areas as HRA monitoring devices.

The inspectors assessed whether radiation monitoring devices were placed on the individual's body consistent with licensee procedures. The inspectors assessed whether the dosimeter was placed in the location of highest expected dose or that the licensee properly implemented an NRC-approved method of determining effective dose equivalent.

The inspectors reviewed the application of dosimetry to effectively monitor exposure to personnel in high-radiation work areas with significant dose rate gradients.

The inspectors reviewed the following RWPs for work within airborne radioactivity areas with the potential for individual worker internal exposures:

- WO (RWP Package) 407001; limit switch repairs on the No. 4 turbine stop valve; and
- WO (RWP Package) 399877; change out 'B' condensate demin filters.

For these RWPs, the inspectors evaluated airborne radioactive controls and monitoring, including potentials for significant airborne levels (e.g., grinding, grit blasting, system breaches, entry into tanks, cubicles, and reactor cavities). The inspectors assessed whether barrier (e.g., tent or glove box) integrity and temporary high-efficiency particulate air (HEPA) ventilation system operation for selected airborne radioactive material areas.

The inspectors examined the licensee's physical and programmatic controls for highly activated or contaminated materials (nonfuel) stored within spent fuel and other storage pools. The inspectors assessed whether appropriate controls (i.e., administrative and physical controls) were in place to preclude inadvertent removal of these materials from the pool.

The inspectors assessed the posting and physical controls for selected HRAs and very high radiation areas (VHRAs), to verify conformance with the Occupational PI.

b. Findings

No findings of significance were identified.

.6 Risk-Significant High Radiation Area and Very High Radiation Area Controls (02.06)

a. Inspection Scope

The inspectors discussed with the radiation protection manager (RPM) the controls and procedures for high-risk HRAs and VHRAs. The inspectors assessed whether any changes to licensee procedures substantially reduced the effectiveness and level of worker protection.

The inspectors reviewed special areas that have the potential to become VHRAs during certain plant operations (e.g., pressurized-water reactor (PWR) thimble withdrawal into

the reactor cavity sump; boiling-water reactor (BWR) traversing in-core probe movement; BWR drywell fuel transfer slot area; spent fuel pool, cavity, or pit diving). The inspectors discussed these areas with first-line health physics (HP) supervisors (or equivalent positions having backshift HP oversight authority) to assess whether the communication beforehand with the HP group would allow for corresponding timely actions to properly post, control, and monitor the radiation hazards including re-access authorization. The inspectors evaluated licensee controls for VHRA, and areas with the potential to become a VHRA, ensured that an individual was not able to gain unauthorized access to the VHRA.

b. Findings

No findings of significance were identified.

.7 Radiation Worker Performance (02.07)

a. Inspection Scope

The inspectors observed radiation worker performance with respect to stated radiation protection work requirements. The inspectors assessed whether workers were aware of the significant radiological conditions in their workplace and the RWP controls/limits in place and that their performance reflects the level of radiological hazards present.

The inspectors reviewed a maximum of 10 radiological problem reports since the last inspection that found the cause of the event to be human performance errors. The inspectors evaluated whether there was an observable pattern traceable to a similar cause. The inspectors assessed whether this perspective matched the corrective action approach taken by the licensee to resolve the reported problems. The inspectors discussed with the RPM any problems with the corrective actions planned or taken.

b. Findings

No findings of significance were identified.

.8 Radiation Protection Technician Proficiency (02.08)

a. Inspection Scope

The inspectors observed the performance of the radiation protection technician with respect to all radiation protection work requirements. The inspectors evaluated whether technicians were aware of the radiological conditions in their workplace and the RWP controls/limits and whether their performance was consistent with their training and qualifications with respect to the radiological hazards and work activities.

The inspectors reviewed a maximum of ten radiological problem reports since the last inspection that found the cause of the event to be radiation protection technician error. The inspectors evaluated whether there was an observable pattern traceable to a similar cause. The inspectors assessed whether this perspective matched the corrective action approach taken by the licensee to resolve the reported problems.

b. Findings

No findings of significance were identified.

.9 Problem Identification and Resolution (02.09)

a. Inspection Scope

The inspectors evaluated whether problems associated with radiation monitoring and exposure control were being identified by the licensee at an appropriate threshold and were properly addressed for resolution in the licensee corrective action program. The inspectors assessed the appropriateness of the corrective actions for a selected sample of problems documented by the licensee that involve radiation monitoring and exposure controls. The inspectors assessed the licensee's process for applying operating experience to their plant.

b. Findings

No findings were identified.

**4. OTHER ACTIVITIES**

40A1 Performance Indicator Verification (71151)

.1 Safety System Functional Failures

a. Inspection Scope

The inspectors sampled licensee submittals for the Safety System Functional Failures Performance Indicator (PI) for the period from the 3<sup>rd</sup> Quarter 2009 through the 2<sup>nd</sup> Quarter 2010. 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 5, and NUREG-1022, "Event Reporting Guidelines 10 CFR 50.72 and 50.73" definitions and guidance, were used. The inspectors reviewed the licensee's operator narrative logs; operability assessments; maintenance rule records; maintenance work orders; issue reports; event reports and NRC Integrated Inspection Reports for this period 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.

This inspection constituted one safety system functional failures sample as defined in IP 71151-05.

b. Findings

No findings were identified.

.2 Reactor Coolant System Leakage

a. Inspection Scope

The inspectors sampled licensee submittals for the RCS Leakage PI for the period from the 2<sup>nd</sup> Quarter 2009 through the 2<sup>nd</sup> Quarter 2010. 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 5, were used. The inspectors reviewed the licensee's operator logs, RCS leakage tracking data, issue reports, event reports and NRC Integrated Inspection Reports for this period 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.

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

b. Findings

No findings were identified.

.3 Occupational Exposure Control Effectiveness

a. Inspection Scope

The inspectors sampled licensee submittals for the Occupational Radiological Occurrences PI for the period from the 3<sup>rd</sup> Quarter 2009 through the 1<sup>st</sup> Quarter of 2010. 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, was used. 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 dosimetry dose rate and accumulated dose alarm 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 VHRA entrances to determine the adequacy of the controls in place for these areas.

This inspection constituted one occupational radiological occurrences sample as defined in IP 71151-05.

b. Findings

No findings of significance were identified.

.4 Radiological Effluent Technical Specifications/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 of October 2009 through March 2010. The inspectors used PI definitions and guidance contained in the NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, 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.

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

b. Findings

No findings of significance were identified.

4OA2 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: the complete and accurate identification of the problem; that timeliness was commensurate with the safety significance; that 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 attached List of Documents Reviewed.

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 Semi-Annual Trend Review

a. Inspection Scope

The inspectors performed a review of the licensee's CAP and associated documents to identify trends that could indicate the existence of a more significant safety issue. The inspectors' review was focused on repetitive equipment issues, but also considered the results of daily inspector CAP item screening discussed in Section 4OA2.2 above, licensee trending efforts, and licensee human performance results. The inspectors' review nominally considered the six month period of January 2010 through June 2010, although some examples expanded beyond those dates where the scope of the trend warranted.

The review also included issues documented outside the normal CAP in major equipment problem lists; repetitive and/or rework maintenance lists; departmental problem/challenges lists; system health reports; quality assurance audit/surveillance reports; self-assessment reports; and Maintenance Rule assessments. The inspectors compared and contrasted their results with the results contained in the licensee's CAP trending reports. Corrective actions associated with a sample of the issues identified in the licensee's trending reports were reviewed for adequacy.

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

b. Findings

No findings were identified.

.4 Selected Issue Follow-Up Inspection: Operator Burden Program

a. Inspection Scope

Following a walkdown of the main control room, the inspectors reviewed CAP documents, work requests, WOs, and the operator burden program. The operator burden program is used to identify, evaluate, and trend the individual and aggregate impact of equipment issues that impact the operator's ability to respond to plant alarms,

gather data, or perform tasks. For each burden, the licensee assigns impact factors in order to assess the aggregate impact on the operators.

The inspectors identified several instances where discrepancies existed between work request signage in the control room and the burdens tracked and evaluated in the burden program database. In many instances, the inspectors identified discrepancies between the evaluated impact and the aggregate impact for OWAs, operator challenges, and control room deficiencies. The inspectors also noted that the licensee had recently changed to a fleet process governing the burden program, and that several of the new program attributes were implemented only, in part, parallel with the existing program.

The inspectors questioned whether any of the discrepancies contributed to a non-conservative understanding of the aggregate impact on the facility, and whether the operator burden program was being implemented appropriately. The licensee wrote CAP 01233452 to address the inspector's concerns.

Because the licensee was in transition to the fleet process for evaluating and trending operator burdens, several actions were either in place or in the process of being developed during the inspectors' review. Based on their review, the inspectors determined that the actions in place were adequate for implementing the operator burden program for evaluating and trending existing and future operator burdens.

This review constituted one in-depth problem identification and resolution 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 Planned Power Reduction to Perform Rod Pattern Adjustments

a. Inspection Scope

The inspectors reviewed operator performance during a planned non-routine power reduction to perform rod pattern adjustments; condenser room inspections; various valve repairs; and installation of a temporary air handler. The inspectors observed power ascension activities in the control room and work activities in the plant. The inspectors verified that emergent issues that arose during the evolution were addressed appropriately. 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 (Closed) Licensee Event Report (LER) 05000/2009-005-01: "Failed Fusible Link on Door 18"

The initial evaluation of this event was performed by the inspectors and was documented and closed in NRC Inspection Report 05000263/2009005.

This LER revision provides additional information regarding the impact of the event on the 4 kV switchgear and offsite power systems, and clarifies the basis for the event not being considered a condition that could have prevented the fulfillment of a safety function. The additional information was reviewed by the inspectors and no findings of significance were identified. This LER is closed.

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

4OA6 Management Meetings

Exit Meeting Summary

On July 13, 2010, the inspectors presented the inspection results to Mr. O'Connor, 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.

Interim Exit Meetings

Interim exits were conducted for:

- On May 4, 2010, the inspector presented the results of the Triennial Review of Heat Sink Performance Inspection to Mr. Tim O'Connor, and other members of the licensee staff. The licensee acknowledged the observation presented.
- Radiological Hazard Assessment and Exposure Controls, and Occupational and Public Radiation Safety Performance Indicator Verifications with Mr. Timothy O'Connor, the Site-Vice President, on June 18, 2010.

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

T. O'Connor, Site Vice President  
J. Grubb, Plant Manager  
W. Paulhardt, Assistant Plant Manager  
N. Haskell, Site Engineering Director  
K. Jepson, Business Support Manager  
S. Radebaugh, Maintenance Manager  
M. Holmes, Radiation Protection/Chemistry Manager  
S. Speight, Regulatory Affairs Manager  
M. Miller, Nuclear Oversight Assessor  
S. Oswald, Response Team Support  
S. Porter, Program Engineering Manager  
P. Saueressig, Program Engineering  
G. Sherwood Program Engineering Supervisor

Nuclear Regulatory Commission

K. Riemer, Chief, Reactor Projects Branch 2

**LIST OF ITEMS OPENED, CLOSED AND DISCUSSED**

Opened

05000263/2010003-01	NCV	Failure to Comply with Turbine Floor Heavy Lift Procedure (Section 1R18)
05000263/2010003-02	NCV	Unacceptable Preconditioning of 250 Vdc Battery Chargers (Section 1R22)

Closed

05000263/2009-005-01	LER	Failed Fusible Link on Door 18 (4OA3.2)
05000263/2010003-01	NCV	Failure to Comply with Turbine Floor Heavy Lift Procedure (Section 1R18)
05000263/2010003-02	NCV	Unacceptable Preconditioning of 250 Vdc Battery Chargers (Section 1R22)

Discussed

None

## LIST OF DOCUMENTS REVIEWED

The following is a list of documents reviewed during the inspection. Inclusion on this list does not imply that the NRC inspectors 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

1150; Summer Checklist; Revision 48  
A.6; Acts of Nature; Revision 33  
Operations Manual B.09.03; 345 kV Substation; Revision 10  
Operations Manual B.09.06; 4.16 kV Station Auxiliary; Revision 9  
OWI-01.04; Operations General Procedural Guidance; Revision 19  
SWI-14.01; Risk Management for Outage and On-line Activities; Revision 5

### Section 1R04

2201; Plant Prestart Checklist CRV-EFT System; Revision 8  
OWI003.08; Protected Equipment Program; Revision 3  
2194; EFT Daily Log Sheet and Administration Building Checks; Revision 41  
CAP 01228889; Procedure OWI-03.08 Improperly Connects FSW with CREF [NRC-Identified]  
2145; RHR System Discharge Venting; Revision 14  
2154-12; RHR System Prestart Valve Checklist; Revision 44  
2154-34; ESW System Prestart Valve Checklist; Revision 26  
2154-10; HPCI System Prestart Valve Checklist; Revision 28

### Section 1R05

Fire Strategy A.3-12-A; Lower 4 kV Bus Area (11, 13 & 15); Revision 12  
Fire Strategy A.3-13-B; Rx Feedpump and Lube Oil Reservoir Room; Revision 10  
Fire Strategy A.3-07-A; 125V Division I Battery Room; Revision 5  
Fire Strategy A.3-07-B; 250V Division I Battery Room; Revision 8  
Fire Strategy A.3-07-C; 125V Division II Battery Room; Revision 6  
Fire Strategy A.3-08; Cable Spreading Room; Revision 12  
Fire Strategy A.3-13-A; Lube Oil Storage Tank Room; Revision 5  
Fire Strategy A.3-13-C; Turbine Building 911' Elevation East MCC Area

### Section 1R06

WO 302792; Inspection of Manholes for Evidence of Water  
WO 392782; Underground Vaults for Water Inspection  
WO 396974; Perform Visual Inspection of Manhole

### Section 1R07

08-024; Monticello Control Room Chiller FSW Flow Calculation; Revision 0  
CA-92-224; Emergency Diesel Generator Loading; Revision 5  
NX-16841; Model No. C-343 30 Ton Packaged Air Conditioning Unit for EFT; Revision 14  
Specification 10040-M-721(Q), Revision 3; Technical Specification for Heating, Ventilation, and Air Conditioning Unit- Seismic Category 1

A.6; Acts of Nature; Revision 33  
II.01; Strategic Chemistry Plan; Revision Plan; Revision 14  
1047-02; Operations Control Room Monthly Checklist  
C.4-B.08.01.01.A; Loss of Service Water  
EWI-08.08.01; Control Room Integrity Program  
EWI-08.22.02; Heat Exchanger Condition Assessment Program; Revision 5  
I.05.25; Zebra Mussel Inspection; Revision 5  
CAP 01093320; Unable to Locate Document on CRV Heat Load Effect ESW System  
CAP 01100313; Detailed EFT and Control Room Heat Load Calcs not Located  
CAP 01123581; Safety Evaluation: Emergency Service Water (FSW)  
CAP 01223441; UHS Snap - No Tube Plugging Calc for EFT Cond.  
CAP 01223445; UHS Snap – Tube Plugging Strategy Inconsistent  
CAP 01227417; CA 08-024 Basis Enhancement  
CAP 01229740; UHS - Documentation of Debris Found in HX is Inconsistent  
Form 5128; Zebra Mussel Inspection Form; September 24, 2009  
MNGP RFO24 MIC Results Summary Table; Appendix A  
NMC69-MN1-09; ANATEC V-EAC-14A and V-EAC-14B EFT Chillers Eddy Current  
Inspection Report; April 9, 2007  
Underground Piping Inspection; September 25, 2009  
WO 00158017; V-EAC-14A CONDENSER INSP/CLEANING; February 9, 2007  
WO 00342811; PM 4057 (Inspect Circ WTR SYS for Macrofouling); March 26, 2008  
WO 00343936; PM 4125 (Inspect East Service Water Bay); April 8, 2009  
WO 00343937; PM 4125 (Inspect West Service Water Bay); April 16, 2009  
WO 00363056; OSP-EFT-0557 CTRL RM Vent Heat Load Removal TST – Train 'A'  
WO 00367171; MECH - V-EAC-14A CONDENSER INSP/CLEANING; February 9, 2009  
WO 00383226; 'A' EFT Filter Efficiency and Leak Tests  
WO 358662; Dredge Intake Bays for 2010  
WO 359060; Dredge Intake Bays for 2009  
CAP 01217824; NRC Ultimate Heat Sink Readiness; March 19, 2010  
NF-36454; MNGP Intake Structure Plan at EL 919'-0"; Revision 77  
NH-36041; Service Water System; Revision 88  
NH-36664; P&ID Service Water and ESW; Revision 84  
NH-36665; P&ID Service Water System and Make-up Intake Structure; Revision 94  
NH-36666; Screen Wash, Fire and Chlorination System Intake Structure; Revision 83  
96Q015; Control Room Dose Reduction- Install Permanent Blanking Plates for the Control  
Room Intake Duct; Revision 1  
EC 12501; Monticello Control Room Chiller FSW Calculation

#### Section 1R11

SEG RQ-SS-107

#### Section 1R12

EWI-05.02.01; Monticello Maintenance Rule Program Document; Revision 15  
CAP 01140118; D90 250 VDC Division II Battery Charger Unavailability Exceeds Maintenance  
Rule Goal  
CAP 01229722; Impossibility to Obtain Inrush Current from D-100 Panel  
Monticello Maintenance Rule Program System Basis Document; 250 VDC Battery System;  
Revision 3  
CAP 1195696; Adverse Trend on Balance of Plant Level Transmitter Failures

CAP 1195642; CV-1001B Moisture Separator went Full Open  
EC 113009; Feedwater Heater Replacement for 13, 14, and 15 A&B  
Monticello Maintenance Rule Program System Basis Document B.6.5; Condensate and  
Feedwater; Revision 2  
System Health Report; Condensate and Reactor Feedwater; June 12, 2010

### Section 1R13

CAP 01227229; 1AR Transformer Lockout Caused by 1N6 Ground Fault  
CAP 01550362; Reactor Scram Number 121 Occurred September 11, 2008  
EWI-08.19.01; Cable Condition Monitoring Program; Revision 1  
4858-04-OCD; 1AR Reserve Transformer Maintenance Isolation; Revision 14  
CAP 01228135; SRV Lift Test Surveillance Interval Potentially Missed  
PRA-MEMO-10-002; Risk Assessment of SRV Missed Surveillance; April 20, 2010  
CAP 01229823; P109C IST Reference Value Change  
CAP 01228961; 13 RHRSW Pump Entered the Required Action Range  
CAP 01231120; Reactor Water Conductivity Went > BWR/1 Limit of 0.3 Micro Siemens per  
Centimeter  
CAP01231114; Reactor Water Chemistry Exceeds BWR Action Level 1  
CAP 01231097; Unexpected Plant Chemistry Response during GEZIP Work Plan  
CAP 01231759; Exceeded Feed Water Fuel Warranty and BWR Conductivity  
CAP 01231168; Project Schedule did not Minimize Lack of Zinc Injection  
CAP 01232366; Failure of ES-17-451B, Causes Reactor Building Ventilation and Fuel Pool  
Radiation Channel 'B' Low  
0068; Spent Fuel Pool & Reactor Building Exhaust Plenum Monitor Calibration; Revision 34  
0009; Turbine Stop Valve Closure Scram Test Procedure; Revision 18  
CAP 001237137; Relay Malfunction on SV-4 during Performance of 0009  
WO 407001; Investigate and Repair SVOS-4

### Section 1R15

Calculation CA-96-165; No. 12 Diesel Fuel Oil Line Analysis; Revision 0  
MPS-1100; Specification for the Analysis of Piping and Piping Support Systems; Revision 8  
CAP 01202800; Rise in Unidentified Drywell Leakage on Daily Plant Reports  
CAP 01233243; Diesel Oil Transfer and Service Pumps Discharge Pressures High  
WO 405227; P-11, Insufficient Flow and Discharge Pressure

### Section 1R18

EC 15500; Manually Control V-MZ-5 Dampers  
EC 15527; VFD for VMZ-5  
EC 15474; Temporary Chiller Unit for Condenser Room Cooling  
EC 16142; Temporary Chiller Unit for the Condenser Room  
CAP 01234375; Temporary Chiller for V-AC-1 Tripping Frequently  
CAP 01234429; Equipment not Placed as Described in TMod [NRC-Identified]  
4948-PM; AC Induction 4kv/480V Motor Online (EMAX) Testing Procedure; Revision 3  
WO 00398975-01; Install VFD TMOD – EC 15527  
ODMI 07; V-AC-1 Service Water Leak  
CAP 01222851; Ops Manual B.03.02-05 Incorrectly Allows Backseating of MOV  
CAP 01202800; Rise in Unidentified Drywell Leakage on Daily Plant Report  
CAP 01219446; Recent Drywell Continuous Air Monitor Increase Possibly due to MO-2034  
Packing Leak

50.59 Screening SCR-10-0120-R0; Back Seat MO-2034, and Monitor for Effectiveness  
EC 15893; MO-2034 Backseating Guidelines; Revision 2  
CAP 1236345; Procedure 8117 not Used for Final Placement of Temporary Air Handler  
CAP 1236724; Work Instruction Use and Adherence  
CAP 1236535; 8151 Heavy Loads Procedure Data Entered Incorrectly  
CAP 1234429; Equipment not Placed as Described In TMOD  
CAP 1235567; CAP not Immediately Written when Issue Identified with TMOD  
Human Performance Event Review Committee Meeting Minutes; June 8, 2010  
8151; Heavy Load Movement Procedure; Revision 13  
WO 405117-01; Install and Test Temporary Chiller Unit  
WO 405117-04; Set-Up Air Handling Equipment during Down Power  
EC 16142; Temporary Chiller Unit for the Condenser Room  
CAP 1237966; Deficiency I The Turbine Heavy Loads Procedure 8117  
CAP 1236998; Potential Heavy Loads Issue when GEZIP Installed  
WO 361095; Transport and Set New GEZIP Skid

#### Section 1R19

4525-PM; Nos. 13 and 16 Battery Charger Preventive Maintenance; Revision 8  
WO 392225; Perform Charger PM Battery  
CAP 01230856; D-80 Charger Current Limit Setting Out of Specification High  
WO 403142; Replace Service Water to ESW Crosstie Isolation Valve  
CAP 01226012; Indications of Loss of Cooling to V-AC-7A/B  
0255-04-IA-1-2; RHR Loop 'B' Quarterly Pump and Valve Tests; Revision 84  
CAP 01232033; Operating Experience on RCIC Lube Oil Cooler not Incorporated in  
Plant Documents  
CAP 01232099; Leak which Appears to be from Packing on RCIC-32  
CAP 01232176; RCIC Pump Inboard Bearing Oil Level Low during Testing  
WO 404186; E-205, RCIC Lubrication Oil Cooler, One Time License Renewal Inspection  
WO 388783; Repair Oil Leak from Inboard RCIC Pump Constant Level Oiler  
0255-08-IA-1; RCIC Quarterly Pump and Valve Tests; Revision 65  
WO 356131; CRD-6-2, 12 CRD Pump Recirc to CST Check Valve Leaking  
WO 404124; Pipe Connection Leak at RCHW-28-1 to Main Piping  
WO 397019; PM 4048 (Reactor Building Supply Fan Isolation Dampers) Spring  
4048-PM; Secondary Containment Isolation Damper Maintenance; Revision 23  
0255-06-III-1; HPCI Comprehensive Pump and Valve Tests; Revision 17

#### Section 1R22

0255-02-III; SBLC Quarterly Pump and Valve Tests; Revision 48  
0030; ECCS High Drywell Pressure Sensor Calibration; Revision 15  
0141; Reactor Building to Torus Vacuum Breaker Operability Check; Revision 30  
0003; Drywell High Pressure Scram and Group 2, 3, & SCTMT Isolation Test and  
Calibration Procedure; Revision 28  
CAP 01229358; NRC Question Regarding the Pre-Conditioning of Charger D90  
[NRC-Identified]  
CAP 01235130; Improper Scheduling Resulted in Unacceptable Preconditioning  
[NRC-Identified]  
ESP-ELE-0549-09; D90 250 VDC Swing Charger 24 Month Capacity Test; Revision 4  
WO 393157; ELEC-ELE, ESP-ELE-0549-09 D90 250 VDC Swing Charger Capacity Test  
WO 346328; ESP-ELE-0549-04 D52 250 VDC Charger 24 Month Capacity Test

WO 331326; PM 4525 (D52 250 VDC Charger)  
CAP 01136744; Battery Charger D52 Exhibits Oscillating Current  
0533; Containment Sump Flow Measurement Instrumentation; Revision 16

#### Section 2RS1

AR 01182083; Holes in On-Site Cargo Containers; May 14, 2009  
AR 01206389; Sea Land Containers Used to Store RAM are Rusting; November 10, 2009  
AR 01210412; Control Rod Blades Not Secured to SFP; December 11, 2009  
AR 01216146; Alpha Monitoring Program Not Fully Implemented; January 30, 2010  
4AWI-08.04.01; Radiation Protection Plan; Revision 28  
4AWI-08.05.13; Control of Items in the Spent Fuel Pool; Revision 08  
Form 5528; Radiation Protection Survey Records; Revision 24  
Form 5611; Radiation Protection Key Log; Revision 08  
Form 5812; VHRA/LHRA Access Guarding Instructions; Revision 08  
Form 5816; VHRA/LHRA Key Log; Revision 05  
FP-RP-ICC-01; Instrument and Control and Calibration/Function Check Frequencies of  
RP Instruments; Revision 0  
FP-RP-JPP-01; RP Job Planning; Revision 06  
FP-RP-RWP-01; Radiation Work Permit; Revision 08  
R-01-04; Control of Personnel in High Radiation and Airborne Areas; Revision 23  
R-02-02; Surface Contamination Surveys; Revision 24  
R-02-04; Analysis of Airborne Radioactivity Samples; Revision 21  
R-07-02; Area Posting, Special Status Signs and Hot Spot Stickers; Revision 36  
R-12-02; Radiation Protection Key Control; Revision 28  
R-13-01; Job Coverage; Revision 27  
R-13-03; Radiography; Revision 11  
R-13-08; Radiological Work Plan for Underwater Diving; Revision 06  
RPGP-01-19; Chemistry and Radiation protection Identification of High Risk Activities and Job  
Monitoring; Revision 03  
Work Order 407001 (RWP Package) Troubleshoot/Repair Turbine Stop Valve No. 4 Limit  
Switch; June 12, 2010  
WO 399877 (RWP Package); Change Out 'B' Condensate Demin Filters; April 21, 2010

#### Section 4OA1

FG-PA-KPI-01; Performance Indicator Data Reporting; Revision 00  
FP-PA-PI-02; NRC/INPO/WANO Performance Indicator Reporting; Revision 06

#### Section 4OA2

CAP 01228476; RSW MR Database Color Red Although it is in (a)(2) Status  
CAP 01228889; Procedure OWI-03.08 Improperly Connects FSW with CREF  
CAP 01229358; NRC Question Regarding the Preconditioning of Charger D90  
Department Roll-Up Meeting Results: Production Planning; 4<sup>th</sup> Quarter 2009, 1<sup>st</sup> Quarter 2010  
Department Roll-Up Meeting Results: Training; 4<sup>th</sup> Quarter 2009, 1<sup>st</sup> Quarter 2010  
Department Roll-Up Meeting Results: Emergency Preparedness; 4<sup>th</sup> Quarter 2009,  
Department Roll-Up Meeting Results: Maintenance; 4<sup>th</sup> Quarter 2009, 1<sup>st</sup> Quarter 2010  
Department Roll-Up Meeting Results: Engineering; 4<sup>th</sup> Quarter 2009, 1<sup>st</sup> Quarter 2010  
Department Roll-Up Meeting Results: Security; 4<sup>th</sup> Quarter 2009, 1<sup>st</sup> Quarter 2010  
Department Roll-Up Meeting Results: Operations; 4<sup>th</sup> Quarter 2009, 1<sup>st</sup> Quarter 2010

CAP 01228630; OPS DRUM Identified a Potential Adverse Trend in OPS Burdens  
CAP 01228661; Security DRUM Inadequate Evaluation of CAP Trend Data  
CAP 01228627; OPS DRUM Identified the Methodology for Observations is not Proactive  
CAP 01228169; 01Q10 Engineering DRUM Identified KIPi for EQV Backlog Exceed Goal  
CAP 01228179; Incomplete Data Presented at 01Q10 Engineering DRUM  
CAP 01229346; 1<sup>st</sup> Quarter Training DRUM Monitor Trend on Simulator Lockups  
CAP 01229351; CAP Trend Coding by Training Department Needs Improvement  
CAP 01229989; AMAG Server Problems Impact OCA Ingress for NRC  
CAP 01231312; Unidentified White Crystal Substance on Torus Floor  
CAP 01232135; NRC Resident Identified Housekeeping Issues during Tour  
CAP 01233452; NRC Questions/Concerns with Operator Burden Program [NRC-Identified]  
CAP 01228630; Operations DRUM Identified a Potential Adverse Trend in Operator Burdens  
Monticello Operator Burden Report; Printed May 11, 2010  
Monticello Operator Burden Report; Printed May 20, 2010  
Monticello Operational Challenges List; Overdue Challenges Report; Printed May 11, 2010  
Operator Burden Impact Factor Report; Printed May 11, 2010  
FP-OP-OB-01; Operator Burden Program; Revision 1  
QF-1150; Operator Burden – Identification and Impact; Revision 0

### Section 4OA3

C.2-05; Power Operation; Revision 37  
4 AWI-08.01.03; HELB Practices; Revision 16

## LIST OF ACRONYMS USED

AC	Alternating Current
ADAMS	Agencywide Document Access Management System
ASME	American Society of Mechanical Engineers
BWR	Boiling Water Reactor
CAP	Corrective Action Program
CFR	Code of Federal Regulations
CRV	Control Room Ventilation
DRP	Division of Reactor Projects
EC	Engineering Change
ECCS	Emergency Core Cooling System
ED	Electronic Dosimeter
EDG	Emergency Diesel Generator
EFT	Emergency Filtration Train
EPD	Electronic Personal Dosimeter
ESW	Emergency Service Water
GEZIP	General Electric Zinc Injection Passivation
HEPA	High-Efficiency Particulate Air
HP	Health Physics
HPCI	High Pressure Coolant Injection
HRA	High Radiation Area
IMC	Inspection Manual Chapter
IP	Inspection Procedure
IPE	Individual Plant Examination
IST	Inservice Test
kV	Kilovolt
LER	Licensee Event Report
MCC	Motor Control Center
MCR	Main Control Room
NCV	Non-Cited Violation
NEI	Nuclear Energy Institute
NRC	U.S. Nuclear Regulatory Commission
ODCM	Offsite Dose Calculation Manual
PARS	Publicly Available Records System
PI	Performance Indicator
PM	Post or Preventative Maintenance
PWR	Pressurized Water Reactor
RCA	Radiological Controlled Area
RCIC	Reactor Core Isolation Cooling
RCS	Reactor Coolant System
RETS	Radiological Effluent Technical Specifications
RHR	Residual Heat Removal
RPM	Radiation Protection Manager
RWP	Radiation Work Permit
RPS	Reactor Protection System
SBLC	Standby Liquid Control
SDP	Significance Determination Process
SR	Surveillance Requirement
SRO	Senior Reactor Operator
SRV	Safety Relief Valve

SSC	Systems, Structures, and Components
TS	Technical Specification
TSO	Transmission Safety Officer
UHS	Ultimate Heat Sink
USAR	Updated Safety Analysis Report
Vdc	Volts Direct Current
VHRA	Very High Radiation Area
WO	Work Order

T. O'Connor

-2-

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Sincerely,

**/RA/**

Kenneth Riemer, Chief  
Branch 2  
Division of Reactor Projects

Enclosure: Inspection Report 05000263/2010003  
w/Attachment: Supplemental Information

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Letter to T. O'Connor from K. Riemer dated August 6, 2010

SUBJECT: MONTICELLO NUCLEAR GENERATING PLANT  
NRC INTEGRATED AND POWER UPRATE REVIEW INSPECTION REPORT  
05000263/2010003

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