



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**

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

April 25, 2008

Mr. Timothy J. O'Connor  
Site Vice President  
Monticello Nuclear Generating Plant  
Nuclear Management Company, LLC  
2807 West County Road 75  
Monticello, MN 55362-9637

**SUBJECT: MONTICELLO NUCLEAR GENERATING PLANT  
NRC INTEGRATED INSPECTION REPORT 05000263/2008002**

Dear Mr. O'Connor:

On March 31, 2008, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Monticello Nuclear Generating Plant. The enclosed integrated inspection report documents the inspection findings which were discussed on April 1, 2008, Mr. Sawatzke 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, there were two NRC-identified findings, and one self-revealed finding; each of very low safety significance and each involving a violation of NRC requirements. However, because the violations were of very low safety significance and because the issues were entered into your corrective action program, the NRC is treating these findings as non-cited violations (NCVs) in accordance with Section VI.A.1 of the NRC's Enforcement Policy.

If you contest the subject or severity of an NCV, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001, with 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 accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document

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Sincerely,

***/RA by N. Shah, Acting for/***

Kenneth Riemer, Chief  
Branch 2  
Division of Reactor Projects

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

Enclosure: Inspection Report 05000263/2008002  
w/Attachment: Supplemental Information

cc w/encl: D. Koehl, Chief Nuclear Officer  
Manager, Nuclear Safety Assessment  
P. Glass, Assistant General Counsel  
Nuclear Asset Manager, Xcel Energy, Inc.  
J. L. Stine, State Liaison Officer, Minnesota Department of Health  
R. Nelson, President, Minnesota Environmental Control Citizens  
Association (MECCA)  
Commissioner, Minnesota Pollution Control Agency  
R. Hiivala, Auditor/Treasurer,  
Wright County Government Center  
Commissioner, Minnesota Department of Commerce  
Manager - Environmental Protection Division  
Minnesota Attorney General's Office

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Commissioner, Minnesota Pollution Control Agency  
R. Hiivala, Auditor/Treasurer,  
Wright County Government Center  
Commissioner, Minnesota Department of Commerce  
Manager - Environmental Protection Division  
Minnesota Attorney General's Office

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SUBJECT: MONTICELLO NUCLEAR GENERATING PLANT NRC INTEGRATED  
INSPECTION REPORT 05000263/2008002

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

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

Report No: 05000263/2008002

Licensee: Nuclear Management Company, LLC

Facility: Monticello Nuclear Generating Plant

Location: Monticello, Minnesota

Dates: January 1 through March 31, 2008

Inspectors: S. Thomas, Senior Resident Inspector  
L. Haeg, Resident Inspector

Observers: L. Benton, General Engineer

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

Enclosure

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## SUMMARY OF FINDINGS

IR 05000263/2008002; 01/01/2008 – 03/31/2008; Monticello Nuclear Generating Plant; Maintenance Effectiveness; Identification and Resolution of Problems; Follow-up of Events and Notice of Enforcement Discretion.

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 and one Green finding was self-revealed. The findings were considered 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-Revealing Findings

#### **Cornerstone: Initiating Events**

Green. A finding of very low safety significance and associated non-cited violation (NCV) of Technical Specification (TS) 5.4 was self-revealed for failing to establish procedures to adequately control work activities in the owner-controlled switchyard. Due to the lack of procedural guidance for review and concurrence of switchyard activities, intrusive maintenance activities were conducted within a protective relay cabinet resulting in the unplanned isolation of a risk-significant offsite power source. The licensee took immediate corrective actions and entered the issue into their corrective action program. The inspectors determined that the performance deficiency affected the cross-cutting area of Human Performance, having decision-making components, and involving aspects associated with formally defining the authority and roles for decisions affecting nuclear safety, implementing these roles and authorities as designed, and obtaining interdisciplinary input and reviews on risk-significant decisions. [H.1(a)]

The inspectors determined that the finding was more than minor because it involved the configuration control attribute of the Initiating Events Cornerstone objective of limiting the likelihood of events that upset plant stability during power operations. The finding was of very low safety significance (Green) because it was not: (1) associated with the likelihood of initiating a loss of coolant accident; (2) did not contribute to both the likelihood of a scram and unavailability of mitigating systems; and (3) did not increase the likelihood of a fire or internal/external flood. (Section 4OA3)

#### **Cornerstone: Barrier Integrity**

Green. A finding of very low safety significance and NCV of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings" was identified by the inspectors for the failure to accomplish inservice TS surveillance testing in accordance with documented instructions. Specifically, an evaluation was not performed to demonstrate the acceptability of stroking and performing maintenance activities on main steam isolation valves (MSIVs) prior to stroke time testing during shutdown for the March-April 2007 Refueling Outage (RFO) 23. The licensee reviewed as-left test data to support current operability of the MSIVs and entered the issue 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 plant conditions that affect work activities. [H.3(b)]

The inspectors determined that the finding was more than minor because it involved the containment barrier performance attribute of the Barrier Integrity Cornerstone objective of providing reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. The finding was of very low safety significance (Green) because it did not represent an actual open pathway in the physical integrity of reactor containment. (Section 1R12)

**Cornerstone: Miscellaneous**

Severity Level IV: A finding of very low safety significance and NCV of TS 5.2.2.d, was identified by the inspectors for the failure to properly implement procedures for controlling plant staff work hours for personnel performing safety-related activities. Specifically, several approved overtime deviations in calendar year (CY) 2007 did not conform to the guidelines contained in TS-required Administrative Procedure 4 AWI-08.10.01, "Overtime Restrictions and Fitness for Duty Requirements." The inspectors determined that the performance deficiency affected the cross-cutting area of Human Performance, having resource components, and involving aspects to ensure that personnel and other resources are available and adequate to assure nuclear safety; specifically, those necessary for sufficient qualified personnel to maintain work hours within working hour guidelines. [H.2(b)]

The inspectors determined that the finding was more than minor because, if left uncorrected, approval of work hour deviations under improper circumstances could increase the likelihood of human errors and would become a more significant safety concern. The finding is not suitable for Significance Determination Process (SDP) evaluation, but has been reviewed by NRC management and is determined to be a finding of very low safety significance because no significant events or human performance issues were a direct result of personnel fatigue from excessive hours worked. The licensee entered the issue into their corrective action program. In accordance with NRC Enforcement Policy, Supplement I.D, the issue is a Severity Level IV Violation. (Section 4OA2)

**B. Licensee-Identified Violations**

No violations of significance were identified.



## REPORT DETAILS

### Summary of Plant Status

Monticello operated at full power for the entire assessment period except for brief down-power maneuvers to accomplish rod pattern adjustments and to conduct planned surveillance testing activities.

#### 1. REACTOR SAFETY

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

#### 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:

- 12 emergency diesel generator (EDG) when 11 EDG was out-of-service for planned maintenance (January 14-15, 2008);
- alternate shutdown system panel with 12 EDG air start subsystem inoperable for planned maintenance (January 31 to February 1, 2008); and
- 'B' loop residual heat removal service water (RHRSW) system when 'A' loop RHRSW was out-of-service for planned maintenance (March 5, 2008).

The inspectors selected these systems based on their risk significance relative to the Reactor Safety Cornerstone 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, Administrative TS, outstanding work orders (WOs), corrective action program (CAP) documents, 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 had entered them into the CAP with the appropriate significance characterization. Documents reviewed are listed in the Attachment.

These activities constituted three partial system walkdown samples as defined in Inspection Procedure 71111.04-05.

b. Findings

No findings of significance were identified.

.2 Semi-Annual Complete System Walkdown

a. Inspection Scope

On February 28, 2008, the inspectors performed a complete system alignment inspection of the accessible portions of the core spray 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 line ups, 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. The documents used for the walkdown and issue review are listed in the Attachment.

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

b. Findings

No findings of significance 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 1-A (No. 12 residual heat removal (RHR) and core spray pump room);
- Fire Zone 1-G (control rod drive pump room);
- Fire Zone 33 (emergency filtration train building third floor);
- Fire Zone 15-B (No. 11 diesel generator room and day tank rooms) during hot work activities;
- Fire Zone 13-B (reactor feedwater pump and lube oil reservoir room);
- Fire Zone 13-A (lube oil storage tank room);
- Fire Zone 13-C (turbine building 911' elevation east motor control center area);
- and
- Fire Zone 8 (cable spreading room).

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 had 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; 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, 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 eight quarterly fire protection inspection samples as defined in Inspection Procedure 71111.05-05.

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures (71111.06)

a. Inspection Scope

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

- 'B' RHR room.

This inspection constitutes one internal flooding sample as defined in Inspection Procedure 71111.06-05.

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 February 4, 2008, 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 problems; and training was being conducted in accordance with licensee procedures. The inspectors evaluated the following areas:

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

The crew's performance in these areas was compared to pre-established operator action expectations and successful critical task completion requirements. The documents used for the walkdown and issue review are listed in the Attachment.

This inspection constitutes one quarterly licensed operator requalification program sample as defined in Inspection Procedure 71111.11.

b. Findings

No findings of significance 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:

- plant heating and ventilation systems;
- diesel generators;
- RHRSW system; and
- primary containment system.

The inspectors reviewed events, such as where ineffective equipment maintenance has 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.

This inspection constitutes four quarterly maintenance effectiveness samples as defined in Inspection Procedure 71111.12-05.

b. Findings

Introduction

The inspectors identified a finding of very low safety significance and non-cited violation (NCV) of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings" for the failure to accomplish inservice TS surveillance testing in accordance with documented instructions. Specifically, an evaluation was not performed to demonstrate the acceptability of stroking and performing maintenance activities on main steam isolation valves (MSIVs) prior to stroke time testing during shutdown for the March-April 2007 Refueling Outage (RFO) 23.

Description

While reviewing maintenance activities performed on the MSIVs, the inspectors questioned whether MSIV stroke time inservice testing, per TS surveillance requirement 3.6.1.3.6, was performed prior to initial closure during shutdown for RFO 23. After reviewing maintenance records, the licensee determined that the MSIVs were stroked closed and had maintenance activities performed on them prior to conducting inservice stroke time test 0255-07-IA-2, "Main Steam Isolation Valve Functional Checks Test." Administrative Work Instruction 4 AWI-09.04.01, "Inservice Testing Program," requires, in part, that the inservice test (IST) coordinator shall be responsible for "providing preconditioning evaluations as necessary for those components where preventive or corrective maintenance may be scheduled in close sequence prior to scheduled IST surveillance tests." Operations Work Instruction 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 or performance trending are conducted in the as-found condition, without exercising, calibration, adjustment or any other preconditioning which may affect or alter the equipment response." Additionally, TS surveillance test 0255-07-IA-2 includes a precaution that states, in part, that "MSIV stroke timing testing per Steps 2 (meets TS surveillance requirement 3.6.1.3.6) and 17 shall be completed prior to any other testing that strokes or adjusts the applicable

MSIV, or an evaluation for potential preconditioning is completed and shown acceptable.” The inspectors questioned whether a preconditioning evaluation was performed before the valves were stroked and before maintenance was conducted, which could have masked the as-found condition of the valves. The licensee reviewed work logs and determined that an evaluation was not performed for the MSIVs in this instance.

The inspectors also questioned whether a conflict existed in 0255-07-IA-2 due to the precaution requiring a preconditioning evaluation and a prerequisite for conducting the test when the plant was in cold shutdown (MSIVs would have had to have been closed). The licensee entered the issues into their CAP and verified that as-left surveillance testing was performed to demonstrate current operability for the fast-closure function of the MSIVs.

### Analysis

The inspectors determined that the failure to accomplish procedures for inservice TS surveillance testing used to determine as-found operability of safety-related components was a performance deficiency warranting significance evaluation in accordance with Inspection Manual Chapter (IMC) 0612, Appendix B, “Issue Disposition Screening.” The inspectors determined that the finding was more than minor because it involved the containment barrier performance attribute of the Barrier Integrity Cornerstone objective of providing reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. 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 plant conditions that affect work activities. [H.3(b)]

The inspectors evaluated the finding using IMC 0609, Appendix A, Attachment 1, “Significance Determination of Reactor Inspection Findings for At-Power Situations.” Using the Phase 1 worksheet for the Barrier Integrity Cornerstone, the inspectors determined that the finding was of very low safety-significance (Green) because it did not represent an actual open pathway in the physical integrity of reactor containment.

### Enforcement

Title 10 CFR, Part 50, Appendix B, Criterion V states, in part, that “activities affecting quality shall be accomplished in accordance with prescribed instructions, procedures, or drawings.” Contrary to this requirement, the licensee failed to perform preconditioning evaluations for MSIV stroking and maintenance prior to conducting TS surveillance test 0255-07-IA-2. Because this violation was of very low safety-significance and it was entered into the licensee’s CAP, it is being treated as an NCV, consistent with Section VI.A.1 of the NRC Enforcement Policy. (NCV 05000263/2008002-01)

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

### 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:

- diesel oil relief valve cycling when the diesel oil transfer pump for 11 EDG was placed inservice;
- main generator voltage regulator exciter ground detection card replacement;
- 'A' feedwater regulating valve lock-up during power reduction;
- 13 RHR pump failed to start during quarterly pump and valve test;
- high pressure coolant injection (HPCI) and RHRSW flow oscillation during HPCI quarterly pump and valve test; and
- troubleshooting efforts to resolve equipment issues causing frequent trips of the station heating boiler.

These activities were selected based on their potential risk significance relative to the Reactor Safety Cornerstone. 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 are listed in the Attachment.

These activities constituted six samples as defined in Inspection Procedure 71111.13-05.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

.1 Operability Evaluations

a. Inspection Scope

The inspectors reviewed the following issues:

- non-conservative high energy line break (HELB) analyses affecting Division I 4kV switchgear;
- cracked weld on 11 EDG airbox support;
- evaluation of parameters assumed in loss of coolant accident analysis;
- evaluation of environmental qualification, Part 'B' specifications for room temperatures, pressures, and water levels analyzed for a reactor building HELB using Gothic Version 7.1; and
- 'B' RHRSW flow control valve oscillation, while in torus cooling mode.

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 also 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.

This inspection constituted five samples as defined in Inspection Procedure 71111.15-05.

b. Findings

No findings of significance were identified.

1R18 Plant Modifications (71111.18)

.1 Annual Resident Review

a. Inspection Scope

The inspectors reviewed and discussed with engineering personnel the engineering change package associated with the temporary plant modification to install a flood barrier for the lower 4kV room. The modification was initiated during re-evaluation of turbine building HELB calculations where existing flood levels were found to be non-conservative. Past operability was pending at the time of this review. Documents were reviewed for adequacy of the associated 10 CFR 50.59 safety evaluation screening, consideration of design parameters, implementation of the modification, post-modification testing, and relevant procedures, design, and licensing documents were properly updated. The inspectors observed ongoing and completed work activities to verify that installation was consistent with the design control documents. Documents reviewed are listed in the Attachment.

This inspection constitutes one temporary plant modification sample as defined in Inspection Procedure 71111.18.

b. Findings

No findings of significance were identified.



## 1R19 Post-Maintenance Testing (71111.19)

### .1 Post-Maintenance Testing

#### a. Inspection Scope

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

- 'B' RHR pump and valve test;
- 'A' reactor building supply fan testing;
- core spray loop 'A' quarterly pump and valve test; and
- 'A' RHRSW quarterly pump and valve test.

These activities were selected based upon the SSCs ability to impact risk. The inspectors evaluated these activities for the following: 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 post-maintenance tests to determine whether the licensee was identifying problems and entering them in the CAP and that the problems were being corrected commensurate with their importance to safety. Documents reviewed are listed in the Attachment.

This inspection constitutes four samples as defined in Inspection Procedure 71111.19.

#### b. Findings

No findings of significance were identified.

## 1R22 Surveillance Testing (71111.22)

### .1 Routine 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 that testing was conducted in accordance with applicable procedural and TS requirements:

- scram discharge volume high level scram test; and
- control rod exercises and withdrawal stall flow testing.

The inspectors observed in-plant activities and reviewed procedures and associated records to determine whether: any preconditioning occurred; effects of the testing were adequately addressed by control room personnel or engineers prior to the commencement of the testing; acceptance criteria were clearly stated, demonstrated operational readiness, and were consistent with the system design basis; plant equipment calibration was correct, accurate, and properly documented; as-left setpoints were within required ranges; the calibration frequency was in accordance with TS, 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, test results not meeting acceptance criteria were addressed with an adequate operability evaluation or the system or component was declared inoperable; where applicable for safety-related instrument control surveillance tests, reference setting data were accurately incorporated in the test procedure; where applicable, actual conditions encountering high resistance electrical contacts were such that the intended safety function could still be accomplished; prior procedure changes had not provided an opportunity to identify problems encountered during the performance of the surveillance or calibration test; equipment was returned to a position or status required to support the performance of the safety functions; and all problems identified during the testing were appropriately documented and dispositioned in the CAP. Documents reviewed are listed in the Attachment.

This inspection constitutes two routine surveillance testing samples as defined in Inspection Procedure 71111.22.

b. Findings

No findings of significance were identified.

.2 Inservice Testing Surveillance

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:

- reactor building to torus vacuum breaker test (mechanical check valves).

The inspectors observed in-plant activities and reviewed procedures and associated records to determine whether: any preconditioning occurred; effects of the testing were adequately addressed by control room personnel or engineers prior to the commencement of the testing; acceptance criteria were clearly stated, demonstrated operational readiness, and were consistent with the system design basis; plant equipment calibration was correct, accurate, and properly documented; as-left setpoints were within required ranges and the calibration frequency 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 inservice testing activities, testing was performed in accordance with the applicable version of Section XI, American Society of Mechanical Engineers (ASME) Code, and reference values were consistent with the system design basis; where applicable, test results not meeting acceptance criteria were addressed with an adequate operability evaluation or the system or component was declared inoperable; where applicable for safety-related instrument control surveillance tests, reference setting data were accurately incorporated in the test procedure; where applicable, actual conditions encountering high resistance electrical contacts were such that the intended safety function could still be accomplished; prior procedure changes had not provided an opportunity to identify problems encountered during the performance of the surveillance or calibration test; equipment was returned to a position or status required to support the performance of its safety functions; and all problems identified during the testing were appropriately documented and dispositioned in the CAP. Documents reviewed are listed in the Attachment.

This inspection constitutes one inservice inspection sample as defined in Inspection Procedure 71111.22.

b. Findings

No findings of significance were identified.

.3 Reactor Coolant System Leak Detection Inspection Surveillance

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:

- containment sump flow measurement instrumentation.

The inspectors observed in-plant activities and reviewed procedures and associated records to determine whether: preconditioning occurred; effects of the testing were adequately addressed by control room personnel or engineers prior to the commencement of the testing; acceptance criteria were clearly stated, demonstrated operational readiness, and were consistent with the system design basis; plant equipment calibration was correct, accurate, and properly documented; as-left setpoints were within required ranges; and the calibration frequency 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, test results not meeting acceptance criteria were addressed with an adequate operability evaluation or the system or component was declared inoperable; where applicable for safety-related instrument control surveillance tests, reference setting data were accurately incorporated in the test procedure; where applicable, actual conditions encountering high resistance electrical contacts were such that the intended safety function could still be accomplished; prior procedure changes had not provided an opportunity to identify problems encountered during the performance of the surveillance or calibration test; equipment was returned to a position or status required to support the performance of its safety functions; and all problems identified during the testing were appropriately documented and dispositioned in the CAP. Documents reviewed are listed in the Attachment.

This inspection constitutes one reactor coolant system leak detection inspection sample as defined in Inspection Procedure 71111.22.

b. Findings

No findings of significance were identified.

.4 Containment Isolation Valve Testing

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:

- reactor building to torus vacuum breaker test (air-operated valves).

The inspectors observed in-plant activities and reviewed procedures and associated records to determine whether: any preconditioning occurred; effects of the testing were adequately addressed by control room personnel or engineers prior to the commencement of the testing; acceptance criteria were clearly stated, demonstrated operational readiness, and were consistent with the system design basis; plant equipment calibration was correct, accurate, and properly documented; as-left setpoints were within required ranges; and the calibration frequency 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, test results not meeting acceptance criteria were addressed with an adequate operability evaluation or the system or component was declared inoperable; where applicable for safety-related instrument control surveillance tests, reference setting data were accurately incorporated in the test procedure; where applicable, actual conditions encountering high resistance electrical contacts were such that the intended safety function could still be accomplished; prior procedure changes had not provided an opportunity to identify problems encountered during the performance of the surveillance or calibration test; equipment was returned to a position

or status required to support the performance of its safety functions; and all problems identified during the testing were appropriately documented and dispositioned in the CAP. Documents reviewed are listed in the Attachment.

This inspection constitutes one containment isolation valve inspection sample as defined in Inspection Procedure 71111.22.

b. Findings

No findings of significance were identified.

1EP6 Drill Evaluation (71114.06)

a. Inspection Scope

The inspectors evaluated the conduct of a routine licensee emergency drill on February 21, 2008, to identify any weaknesses and deficiencies in classification, notification, and protective action recommendation development activities. The inspectors observed emergency response operations in the simulator control room, technical support center, and emergency offsite facility to determine whether the event classification, notifications, and protective action recommendations were performed in accordance with procedures. The inspectors also attended the licensee drill critique to compare any inspector-observed weakness with those identified by the licensee staff, in order to evaluate the critique and to verify whether the licensee staff was properly identifying weaknesses and entering them into the CAP. As part of the inspection, the inspectors reviewed the drill package and other documents listed in the Attachment.

This inspection constitutes one sample as defined in Inspection Procedure 71114.06-05.

b. Findings

No findings of significance were identified.

**4. OTHER ACTIVITIES**

4OA1 Performance Indicator (PI) Verification (71151)

.1 Data Submission Issue

a. Inspection Scope

The inspectors performed a review of the data submitted by the licensee for the 4<sup>th</sup> Quarter 2007 PIs for any obvious inconsistencies prior to its public release in accordance with IMC 0608, "Performance Indicator Program."

This review was performed as part of the inspectors' normal plant status activities and, as such, did not constitute a separate inspection sample.

b. Findings

No findings of significance were identified.

.2 Unplanned Scrams per 7000 Critical Hours

a. Inspection Scope

The inspectors sampled licensee submittals for the Unplanned Scrams per 7000 Critical Hours PI for the period from the 1<sup>st</sup> Quarter 2007 through the 4<sup>th</sup> Quarter of 2007. To determine the accuracy of the PI data reported during those periods, PI definitions and guidance contained in Revision 5 of the Nuclear Energy Institute (NEI) Document 99-02, "Regulatory Assessment Performance Indicator Guideline," were used. The inspectors reviewed the licensee's operator narrative logs, issue reports, event reports and NRC Inspection Reports to validate the accuracy of the submittals. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the PI data collected or transmitted for this indicator and none were identified. Specific documents reviewed are described in the Attachment to this report.

This inspection constitutes one unplanned scrams per 7000 critical hours sample as defined in Inspection Procedure 71151.

b. Findings

No findings of significance were identified.

.3 Unplanned Scrams with Complications

a. Inspection Scope

The inspectors sampled licensee submittals for the Unplanned Scrams with Complications PI for the period from the 1<sup>st</sup> Quarter 2007 through the 4<sup>th</sup> Quarter 2007. To determine the accuracy of the PI data reported during those periods, PI definitions and guidance contained in Revision 5 of the NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," were used. The inspectors reviewed the licensee's operator narrative logs, issue reports, event reports and NRC Integrated Inspection Reports to validate the accuracy of the submittals. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the PI data collected or transmitted for this indicator. Specific documents reviewed are described in the Attachment to this report.

This inspection constitutes one unplanned scrams with complications sample as defined in Inspection Procedure 71151.

b. Findings

No findings of significance were identified.

.4 Unplanned Transients per 7000 Critical Hours

a. Inspection Scope

The inspectors sampled licensee submittals for the Unplanned Transients per 7000 Critical Hours PI for the period from the 1<sup>st</sup> Quarter 2007 through the 4<sup>th</sup> Quarter 2007. To determine the accuracy of the PI data reported during those periods, PI definitions

and guidance contained in Revision 5 of the NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," were used. The inspectors reviewed the licensee's operator narrative logs, issue reports, maintenance rule records, event reports and NRC Integrated inspection reports to validate the accuracy of the submittals. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the PI data collected or transmitted for this indicator. Specific documents reviewed are described in the Attachment to this report.

This inspection constitutes one unplanned transients per 7000 critical hours sample as defined in Inspection Procedure 71151.

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 CAP

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 of significance were identified.

.2 Daily CAP 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 CAP document 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 of significance were identified.

.3 Selected Issue Follow-Up Inspection: Spent Fuel Pool Sparger Modification

a. Inspection Scope

On December 1, 2006, just prior to the licensee's first attempt to implement the spent fuel pool sparger modification, the inspectors identified that the modification had not been evaluated against the licensee's newly implemented Improved Technical Specifications (ITS) and that a load drop of the diffuser pipe as it was rigged into and out of the spent fuel pool had not been postulated or evaluated. The inspectors' evaluation and assessment of this issue was documented in Section 1R17 of Integrated Inspection Report 05000263/2006005. Documents reviewed in this inspection are listed in the Attachment.

The above constitutes completion of one in-depth problem identification and resolution sample.

b. Assessment and Observations

This in-depth problem identification and resolution sample focused on the licensee's corrective actions associated with CAP 01061380, "NRC Question Regarding Lower Fuel Pool Level ITS Compliance." Prior to the licensee's second attempt at implementing the spent fuel pool sparger modification on January 14, 2008, the inspectors reviewed a significant portion of the applicable engineering change package, including supporting design calculations, to verify that the licensee had adequately evaluated the engineering change against its current licensing basis. Additionally, the inspectors reviewed the Apparent Cause Evaluation (ACE) (associated with CAP 01061380) and evaluated the licensee's actions to correct the condition; actions to address the apparent cause; and the action to address the extent of condition, to ensure that licensee's assessment of the issue was sufficient and proposed corrective actions were adequate.

No findings of significance were identified.



.4 Selected Issue Follow-Up Inspection: Implementation of Overtime Restriction Requirements

a. Inspection Scope

The inspectors reviewed several licensee CAP documents associated with staff overtime issues at Monticello. To further evaluate how overtime hours were controlled, the inspectors reviewed approximately 300 approved overtime deviation forms to determine whether overtime deviations were being authorized in accordance with the licensee administrative guidelines and TS requirements. The inspectors also held discussions with senior Monticello management to further understand overtime guidelines and expectations for deviation authorization. Documents reviewed in this inspection are listed in the Attachment.

The above constitutes completion of one in-depth problem identification and resolution sample.

b. Findings and Observations

Introduction

The inspectors identified a finding of very low safety-significance and NCV of TS 5.2.2.d, for the failure to properly implement procedures for controlling plant staff work hours for personnel performing safety-related activities. Specifically, several approved overtime deviations in calendar year 2007 did not conform to the guidelines contained in TS-required Administrative Procedure 4 AWI-08.10.01, "Overtime Restrictions and Fitness for Duty Requirements."

Description

While performing a review of the licensee's CAP documents associated with overtime control, the inspectors noted several instances where overtime restrictions were inadvertently exceeded. Based on these issues, the inspectors reviewed 4 AWI-08.10.01; specifically Section 4.3, "Deviations from Overtime Work Restrictions." This procedure is implemented to conform to TS 5.2.2.d, which requires limitations on personnel working hours. Subsection 4.3.3 of the administrative procedure lists, in part, examples of situations where deviations are appropriate:

- when a scheduled or otherwise arranged individual fails to arrive or cannot work for any reason, another individual is held over to fill the position;
- an abnormal operating condition has developed that requires implementation of an Emergency Plan Implementing Procedure;
- actual or potential problems threaten plant availability or could result in substantial degradation of plant operations; or
- an individual is held over for Fitness for Duty testing.

Generic Letter 82-12, "Nuclear Power Plant Staff Working Hours," states, in part, that very unusual circumstances may arise requiring deviation from overtime work restrictions. Licensee Administrative Procedure 4 AWI-08.10.01 lists NRC Generic Letter 82-12 as a reference document from which generic working hour guidelines were incorporated.

Upon review of the licensee's approved overtime deviations for CY 2007, the inspectors identified several instances where deviations were approved for reasons not in accordance with the guidelines of 4 AWI-08.10.01. For example, the inspectors identified several instances where deviations were approved for:

- attending meetings or training;
- support of RFO critical path work;
- new fuel receipt inspections;
- daylight savings time changes; and
- installation of monitoring and test equipment for future needs.

The inspectors noted that during CY 2007, no issues or events were associated with worker fatigue as a direct result of exceeding overtime restrictions.

### Analysis

The inspectors determined that the failure to properly implement procedures for controlling plant staff work hours for personnel performing safety-related activities was a performance deficiency. Deviations from overtime restrictions were approved for reasons not in accordance with the guidelines of 4 AWI-08.10.01, an administrative procedure credited for implementation and compliance with TS 5.5.2, "Unit Staff." The inspectors determined that the finding was more than minor because, if left uncorrected, approval of work hour deviations under improper circumstances could increase the likelihood of human errors and would become a more significant safety concern. The finding is not suitable for SDP evaluation, but has been reviewed by NRC management and is determined to be a finding of very low safety-significance because no significant events or human performance issues were a direct result of personnel fatigue from excessive hours worked. In accordance with NRC Enforcement Policy, Supplement I.D, the issue is a Severity Level IV Violation.

Because overtime restriction deviations were approved in a routine manner for reasons not in accordance with TS-required guidelines, specifically for reasons to maintain schedule adherence, there was an increase in the likelihood of worker fatigue which could lead to significant consequences. Therefore, the inspectors determined that the performance deficiency affected the cross-cutting area of Human Performance, having resource components, and involving aspects to ensure that personnel and other resources are available and adequate to assure nuclear safety; specifically, those necessary for sufficient qualified personnel to maintain work hours within working hour guidelines. [H.2(b)]

### Enforcement

Technical Specification 5.2.2.d requires, in part, that administrative procedures be developed and implemented to limit the working hours of personnel who perform safety-related functions. Administrative Procedure 4 AWI-08.10.01, "Overtime Restrictions and Fitness for Duty Requirements," Revision 9, specifies requirements for overtime deviation approval in accordance with guidelines for when deviations from overtime restrictions are appropriate. Contrary to this requirement, several overtime deviations were approved in CY 2007, for reasons other than the examples listed in the TS-required administrative procedure. Specifically, several approved overtime deviations were identified that were not considered "very unusual

circumstances,” primarily maintaining outage schedules and attending meetings or training. Because this violation was of very low safety-significance, was not repetitive or willful, and the issue was entered into the licensee’s CAP, this violation is being treated as an NCV, consistent with Section VI.A.1 of the NRC Enforcement Policy. (NCV 05000263/2008002-02)

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

.1 Unplanned Loss of Power Source to 345kV Ring Bus and Increase In-Plant Online Risk

a. Inspection Scope

The inspectors reviewed the plant’s response to an unplanned loss of the Sherburne County power source to the 345kV ring bus on March 5, 2008. Documents reviewed in this inspection are listed in the Attachment.

This inspection constitutes one sample as defined in Inspection Procedure 71153-05.

b. Findings

Introduction

A finding of very low safety-significance and NCV of TS 5.4, “Procedures,” was self-revealed for the failure to establish procedures to control work activities in the owner-controlled switchyard. Specifically, the licensee did not have a procedure or process established to review and concur on relay replacement activities by Xcel Energy technicians occurring between February and March 2008.

Description

While performing relay upgrades in the Monticello switchyard on March 5, 2008, Xcel Energy technicians proceeded with ground bar modifications to facilitate installation of a new relay cabinet. In order to achieve proper installation of the new cabinet, a ground bar in the adjacent 8N11/8N12 breaker relay cabinet had to be temporarily removed. Both the Xcel technicians and Monticello electrical maintenance supervision agreed that there would be no adverse consequences to performing cutting activities inside the cabinet due to the solid-state construction of the relaying equipment. Using a reciprocating saw, the technicians began cutting the ground bar. During the cutting activity, 8N11 and 8N12 breaker relays actuated, causing the Sherburne County power supply to Monticello’s 345kV ring bus to be isolated. Several control room alarms were received, and overall online plant risk (core damage frequency) was assessed to increase from Green to Yellow ( $>1.20E-5/\text{yr}$ ). The cutting activity was quickly identified as the cause of the event, and work activities in the switchyard relay building were halted until an investigation could be performed.

Analysis

The inspectors determined that the failure to establish procedures for review of maintenance activities that could affect plant stability and risk was a performance deficiency warranting significance evaluation in accordance with IMC 0612, Appendix B, “Issue Disposition Screening.” The inspectors determined that the finding was more

than minor because it involved the configuration control attribute of the Initiating Events Cornerstone objective of limiting the likelihood of events that upset plant stability during power operations.

The licensee determined that the primary cause of the event was the assumption that the solid-state relays would not be susceptible to spurious actuation due to vibration. Although the licensee informally reviewed the technicians' work scope and discussed the process by which the ground bar would be removed, a formal review was not conducted due to the lack of procedural guidance. Having a formal process in place would have required a more in-depth assessment of the work and may have required the licensee to first isolate the affected power source in a controlled, planned fashion rather than in an unexpected manner. The inspectors determined that the performance deficiency affected the cross-cutting area of Human Performance, having decision-making components, and involving aspects associated with formally defining the authority and roles for decisions affecting nuclear safety, implementing these roles and authorities as designed, and obtaining interdisciplinary input and reviews on risk-significant decisions. [H.1(a)]

The inspectors evaluated the finding using IMC 0609, Appendix A, Attachment 1, "Significance Determination of Reactor Inspection Findings for At-Power Situations." Using the Phase 1 worksheet for the Initiating Events Cornerstone, the inspectors determined that the finding was of very low safety significance (Green) because it was not: (1) associated with the likelihood of initiating a loss of coolant accident; (2) did not contribute to both the likelihood of a scram and unavailability of mitigating systems; and (3) did not increase the likelihood of a fire or internal/external flood.

### Enforcement

Technical Specification 5.4 requires, in part, that written procedures be established covering applicable procedures recommended in Regulatory Guide 1.33, Revision 2. Regulatory Guide 1.33 discusses, in part, that maintenance affecting performance of safety-related equipment should be properly pre-planned in accordance with procedures. Contrary to the above, the licensee did not establish a formal, written procedure to ensure that offsite power source availability would not be affected during maintenance activities. Specifically, maintenance activities in the licensee-controlled switchyard were not formally and adequately reviewed prior to conducting maintenance. This contributed to the unplanned loss of a risk-significant offsite power source. Because this violation was of very low safety-significance and was entered into the licensee's CAP, this violation is being treated as an NCV, consistent with Section VI.A.1 of the NRC Enforcement Policy. (NCV 05000263/2008002-03)

## 4OA6 Management Meetings

### .1 Exit Meeting Summary

On April 1, 2008, the inspectors presented the inspection results to Mr. Sawatzke and other members of the licensee staff. The licensee acknowledged the issues presented. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

4OA7 Licensee-Identified Violations

No violations of significance were identified.

ATTACHMENT: SUPPLEMENTAL INFORMATION

## SUPPLEMENTAL INFORMATION

### KEY POINTS OF CONTACT

#### Licensee:

T. O'Connor, Site Vice President  
B. Sawatzke, Plant Manager  
J. Grubb, Site Engineering Director  
W. Guldemon, Business Support and Nuclear Safety Assurance Manager  
S. Sharp, Operations Manager  
S. Radebaugh, Maintenance Manager  
B. Cole, Radiation Protection/Chemistry Manager  
T. Blake, Regulatory Affairs Manager

#### Nuclear Regulatory Commission

K. Riemer, Chief, Reactor Projects Branch 2

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

#### Opened and Closed

05000263/2008002-01	NCV	Improper Procedure Implementation Results in Unevaluated Preconditioning of MSIVs (Section 1R12)
05000263/2008002-02	NCV	Improper Overtime Restriction Deviations (Section 4OA2)
05000263/2008002-03	NCV	Unplanned Loss of 345kV Power Source (Section 4OA3)

## LIST OF DOCUMENTS REVIEWED

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

### 1R04 Equipment Alignment

- 2154-28; DG Air Start System Prestart Valve Checklist; Revision 9
- 2124; Plant Prestart Checklist for Diesel Generators and Fuel Oil System; Revision 7
- 2203; Plant Prestart Checklist Alternate Shutdown System (ASDS); Revision 3
- C.4-C; Shutdown Outside Control Room; Revision 29
- 2154-23; RHRSW System Prestart Valve Checklist; Revision 27
- Core Spray System Health Report; dated February 25, 2008
- 7120; Core Spray System Maintenance Procedure; Revision 11
- 2119; Plant Restart Checklist – Core Spray System; Revision 8
- M-122; MNGP Core Spray System P&ID; Revision 76
- 2154-11; Core Spray System Prestart Valve Checklist; Revision 18
- CAP 01128402; Degradation in Core Spray Test Return Due to Interference

### 1R05 Fire Protection

- Fire Strategy A.3-01-A; No. 12 RHR and Core Spray Pump Room; Revision 3
- Fire Strategy A.3-01-G; CRD Pump Room; Revision 3
- Fire Strategy A.3-33; EFT Building Third Floor; Revision 6
- Fire Strategy A.2-15-B; No. 11 Diesel Generator Room and Day Tank Rooms; Revision 9
- Fire Strategy A.3-13-A; Lube Oil Storage Tank Room; Revision 5
- Fire Strategy A.3-13-B; Reactor (Rx) Feed Pump and Lube Oil Reservoir Room; Revision 9
- WO 332718; Install New Sprinkler Head and Support in No. 11 EDG Room
- 4 AWI-08.-1.02; Combustion Source Use Permit; Revision 9
- CAP 01127288; Safety Concern, Scaffold Covered with a Combustible Mesh
- Fire Strategy A.3-13-C; Turbine Building 911' Elevation East MCC Area; Revision 6
- Fire Strategy A.3-08; Cable Spreading Room; Revision 11

### 1R06 Flood Protection Measures

- DBD T.08; Internal Flooding; Revision 3
- CA-07-029; Rx and Turbine Building & Intake Structure Height for Internal Flooding; Revision 00
- CA-07-021; Reactor Building, Turbine Building & Intake Structure Water Height – Internal Flooding
- CA-07-019; Fire Protection, Demin System and Condensate System Break Flows for Internal Flooding; Revision 00
- CA-07-018; Service Water Break Flow; Revision 00
- CA-06-086; Demin and Condensate Water Systems Calculation for Postulated Internal Flooding Scenarios; Revision 00
- CA-06-084; Fire Protection Break Flow Calculation for Postulated Internal Flooding Scenarios; Revision 00

CA-06-083; Fire Protection Break Flow for Postulated Internal Flooding Scenarios- Reactor Building; Revision 00

1R11 Licensed Operator Requalification Program

- Simulator Exercise Guide RQ-SS-59E

1R12 Maintenance Effectiveness

- Monticello Maintenance Rule Program System Basis Document; Heating and Ventilation System; Revision 4  
Monticello Maintenance Rule Program System Basis Document; Secondary Containment; Revision 4  
Monticello Maintenance Rule Program System Basis Document; 4.16 kV Station Auxiliary; Revision 6  
CAP 01061159; TCV-8027 not Maintaining V-MZ-1 Temperature Above Trip Setpoint  
CAP 01105319; Loss of 4kV Ventilation (V-MZ-1 Trip on Low Temperature)  
CAP 01105744; V-MZ-1 Low Temperature Alarm Received at 85 Degrees F  
CAP 01114068; Maintenance Rule HTV System Disposition to (a)(1) Status  
CAP 01124420; V-MZ-1 Tripped due to Low Temperature  
CAP 01124623; Possible Adverse Trend with H&V Issues  
Monticello Maintenance Rule Program System Basis Document; DGs; Revision 1  
CAP 01020570; Received Unexpected Alarm C08-C-27 (#12 EDG Start Failure)  
CAP 01054920; Unexpected Results from 11 EDG Overspeed Trip Test  
CAP 01084801; Emergency Shutdown of 12 EDG Due to Oil Leak  
CAP 01085239; Broken Fuel Oil Pump Coupling on 12 EDG  
Monticello Maintenance Rule Program System Basis Document; RHRSW System; Revision 1  
CAP 01034567; CV-1729, Air leak on Air Line into Valve Positioner  
CAP 01035449; CV-1728 Auto/Manual Valve Inadvertently Mispositioned  
CAP 01094761; Loss of Motor Cooling Flow to Division 1 RHRSW Pumps  
CAP 01124744; PI-7332 Reads 0 PSIG, Unplanned LCO Action Entry  
CAP 01125992; P-109A, Low Motor Cooling Flow to 11 RHRSW Pump  
CAP 01126192; SW-22-2 Found Stuck Open with Mud  
Monticello Maintenance Rule Program System Basis Document; Primary Containment System; Revision 7  
CAP 01131417; MSIV Stroke Time Tests not Performed Prior to 2007 RFO Maintenance  
CAP 01126482; Drywell-Torus Vacuum Breakers  
0255-07-IA-2; MSIV Functional Checks Test; Revision 21  
4 AWI-09.04.01; Inservice Testing Program; Revision 30  
OWI-01.04; Operations General Procedural Guidance; Revision 14  
2204; Shutdown Checklist; Revision 35

1R13 Maintenance Risk Assessments and Emergent Work Control

- CAP 01123730; RV-1523 Diesel Oil Transfer Pump Discharge Relief Valve Lifts  
CAP 00695898; RV-1523 Cycling  
WO 00352843; Reset Voltage Regulator M2 Ground Detector Oscillator Alarm  
EC 773; Main Generator Voltage Regulator Replacement; Revision 1  
CAP 01125950; 'A' FW Reg Valve Locked-up While Reducing Reactor Power  
Troubleshooting Log for WO 354068  
CAP 01129707; P-202C (13 RHR) Failed to Start During 0255-04-IA-1-1



4948-PM; AC Induction 4kV/480V Motor Online (EMAX) Testing Procedure; Revision 2  
WO 346650; P-202C/MTR, Perform 4948-PM 4kV/480V Motor Online Testing  
0255-06-IA-1; HPCI Quarterly Pump and Valve Tests; Revision 79  
CAP 01130761; CV-1729 not Controlling at 7000 gpm, Results in Unplanned LCO  
CAP 01130606; HPCI Failed 0255-06-IA-1 Surveillance  
CAP 01130817; Inadequate PMT for CV-3503  
WO 356552; HPC, HPCI Erratic Flow During 0255-06-IA-1  
WO 356592; PM 12 RHR HX RHRSW Outlet (CV-1729)  
IMP-2010; AOV Testing Using Viper 20; Revision 0  
7070; RHR Service Water System Instrument Maintenance Procedure; Revision 24  
Troubleshooting Log for WO 356552; March 10, 2008  
Troubleshooting Log for the Heating Boiler; February 6, 2008  
1060-01; Heating Boiler Burner Interlock and Relief Valve Test; Revision 12  
CAP 01126289; Heating Boiler Found Tripped on Flame Failure Lockout  
CAP 01126077; Heating Boiler Stuck in Pre-Purge  
WO 354276; S1, Received Hold Purge D-8 Limit Lockout on C-85

#### 1R15 Operability Evaluations

- CAP 01127448; NRC Comments on OPR 1125675, Lower 4kV Rm and HELB  
CA-92-151; Evaluation of Mechanical and Structural Modification for Modification Package  
92Q290; Flood Protection for the Lower 4kV Switchgear Room; Revision 0  
CAP 01125675; Non-Conservative HELB Gothic Model on HELBs in Cond Rm  
Operations Manual C.4-I; Plant Flooding  
CAP 01127382; Support Beam on EDG No. 11 has Broken Weld  
EC 012148; Evaluation of Parameters Assumed in LOCA Analysis  
CAP01124033; Evaluation of Parameters Assumed in LOCA Analysis  
EC 12421; Engineering Evaluation, Effect of EPU reactor Building HELB Liquid Breaks on EQ  
Specifications, Part B  
CAP 01130561; EPU HPCI Line Steam Break in HPCI Room Exceeds EQ Specification  
Requirement  
CAP 01129815; EPU Reactor Building HELB Analyses Results Exceed EQ Requirements;  
and Associated Operability Recommendation  
CAP 01130518; GOTHIC Version 7 Analysis Method Different Than Version 4  
CAP 01130761; CV-1729 not Controlling at 7000 gpm, Results in Unplanned LCO

#### 1R18 Plant Modifications

- EC 11963; Installation of the Lower 4kV Room Flood Barrier  
WO 351646; Install T-Mod EC-11963 Lower 4kV Flood Barrier  
SCR-07-0534; Installation of the Lower 4kV Room Flood Barrier; Revision 0  
CA 00-038; Lower 4kV Area Flood Barrier; Revision 0  
CA 00-061; Turbine Building Flood Analysis from Feedwater Line Break Prior to September  
1999; Revision 0  
CA 97-148; Feedwater Crack in the Condenser Area, for Rerate, 1819 MWt, Analysis Case  
RFD-TB-CFW-C-15-R1; Revision 1  
CAP 01120259; Non-Cons HELB Gothic Model on FW Crack in Condenser Rm

### 1R19 Post Maintenance Testing

- 0255-04-IA-1-2; RHR Loop 'B' Quarterly Pump and Valve Tests; Revision 75  
WO 346649; P-202D/MTR, Perform 4948-PM 4kV/480V Motor Online Testing  
CAP 01126064; V-AH-4B Tripped While Isolating V-AH-4A  
WO 353591; LC-8073B, V-AH-4A Trips During Cold Weather  
2019-1; Reactor Building Differential Pressure (dP); Revision 1  
0255-05-IA-1-1; 'A' RHRSW Quarterly Pump and Valve Tests; Revision 61  
CAP 01130032; SV-4937A, 11 RHRSW Motor Cooling Solenoid Stuck Open  
0255-03-IA-1-1; Core Spray Loop 'A' Quarterly Pump and Valve Tests; Revision 47  
WO 349073; P-208A/MTR, Mechanical Offline Motor PM  
WO 347715; Perform 4946-PM AC Induction 4kV/480V Motor Offline Testing

### 1R22 Surveillance Testing

- 0141; Reactor Building to Torus Vacuum Breaker Operability Check; Revision 29  
DBD-B.04.01; Primary Containment; Revision C  
0006; Scram Discharge Volume Hi Level Scram Test and Calibration Procedure; Revision 25  
0255-10-IA-4; Reactor Building to Torus Vacuum Breaker Mechanical Exercise Test;  
Revision 20  
CA-97-102; Reactor Building to Torus Vacuum Breaker Opening Torque  
CAP 01123283; DBD References Self-Actuated Vacuum Breaker Open in 1 Second  
CAP 01123280; Tech Spec Preconditioning Concern for DWV-8-1/8-2  
0533; Containment Sump Flow Measurement Instrumentation; Revision 12  
1022; CRD - Withdrawal Stall Flow Test; Revision 16  
0074; CRD Exercise; Revision 49

### 1EP6 Drill Evaluation

- Emergency Plan Drill Guide; February 20, 2008; Revision 0

### 4OA2 Problem Identification and Resolution

- CAP 01061380; NRC Question Regarding Lower Fuel Pool Level ITS Compliance  
EC 7563; Spent Fuel Pool Diffuser Pipe Modification; Revision 1  
SCR-06-0217; Lower Fuel Pool Level and Restoration; Revision 5  
EC 9516; Evaluation for Performing Work in the Fuel Pool for the Fuel Pool Diffuser  
Modification; Revision 00  
8240; Lowering Fuel Pool Level and Restoration; Revision 2  
NMC Calculation 06-073; Evaluation of SF Cooling and Clean-Up Sparger per Mod EC 7536;  
Revision 1  
NMC Calculation 07-066; Engineering Evaluation of Spent Fuel Pool Cooling and Clean-Up  
Sparger Pipe Jet Loads; Revision 00  
NMC Calculation 06-074; Fuel Pool Cooling and Clean-Up System Sparger Analysis;  
Revision 1  
NMC Calculation 06-110; Evaluation of Temporary Support for Abandoned Fuel Pool Return  
Piping; Revision 00  
NMC Calculation 06-111; Evaluation of Temporary Platform Over the Fuel Pool; Revision 00  
4 AWI-08.10.01; Overtime Restrictions and Fitness for Duty Requirements, Revision 9  
3361; Authorization to Exceed Overtime Work Restrictions; January 1 to December 31, 2007  
CAP 01073271; Workers Exceed 24 Hours Work Time in 48 Hour Period

CAP 01078225; Security Officer Exceeded Hours Worked Requirements  
CAP 01096069; Officer Inadvertently Exceeded Hours Worked Requirement  
CAP 01132227; NRC Identified Issue with Station Overtime Program

4OA3 Followup of Events and Notices of Enforcement Discretion

- CAP 01129998; Received 2 Unexpected Alarms in Control Room, 8-A-3 & 8-A-13  
4 AWI-04.04.06; Transmission Work Request; Revision 6  
Transmission Work Request 826831; Replace Dickinson – Lake Pulaski – Monticello 115kV  
Line Relaying; Revision 2

## LIST OF ACRONYMS USED

ASME	American Society of Mechanical Engineers
CAP	Corrective Action Program
CFR	Code of Federal Regulations
DRP	Division of Reactor Projects
EDG	Emergency Diesel Generator
HELB	High Energy Line Break
HPCI	High Pressure Coolant Injection
IMC	Inspection Manual Chapter
IR	Inspection Report
IST	Inservice Test
ITS	Improved Technical Specification
kV	Kilovolt
MSIV	Main Steam Isolation Valve
NCV	Non-Cited Violation
NEI	Nuclear Energy Institute
NRC	U.S. Nuclear Regulatory Commission
PI	Performance Indicator
RFO	Refueling Outage
RHR	Residual Heat Removal
RHRSW	Residual Heat Removal Service Water
SDP	Significance Determination Process
SSC	Structures, Systems, and Components
TS	Technical Specification
USAR	Updated Safety Analysis Report
WO	Work Order