

# UNITED STATES NUCLEAR REGULATORY COMMISSION

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

October 26, 2009

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 05000263/2009004

Dear Mr. O'Connor:

On September 30, 2009, the U.S. Nuclear Regulatory Commission (NRC) completed an integrated inspection at your Monticello Nuclear Generating Plant. The enclosed report documents the inspection findings, which were discussed on October 8, 2009, 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. The 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. Additionally, three licensee-identified violations are listed in Section 40A7 of this report.

If you contest the subject or severity of a 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 addition, if you disagree with the characterization of 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. The information you provide will be considered in accordance with Inspection Manual Chapter 0305.

T. O'Connor

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 Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS), accessible from the NRC Web site at <a href="http://www.nrc.gov/reading-rm/adams.html">http://www.nrc.gov/reading-rm/adams.html</a> (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 05000263/2009004 w/Attachment: Supplemental Information
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# U. S. NUCLEAR REGULATORY COMMISSION

# **REGION III**

Docket No: License No:	50-263 DPR-22
Report No:	05000263/2009004
Licensee:	Northern States Power Company, Minnesota
Facility:	Monticello Nuclear Generating Plant
Location:	Monticello, MN
Dates:	July 1 through September 30, 2009
Inspectors:	S. Thomas, Senior Resident Inspector L. Haeg, Resident Inspector J. Bozga, Reactor Engineer C. Brown, Reactor Engineer
Observers:	J. Corujo-Sandin, Reactor Engineer
Approved by:	Kenneth Riemer, Chief Branch 2 Division of Reactor Projects

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# SUMMARY OF FINDINGS

IR 05000263/2009004; 07/01/2009 – 09/30/2009; Monticello Nuclear Generating Plant; Surveillance Testing, Follow-Up of Events and Notices of Enforcement Discretion.

This report covers a three-month period of inspection by resident inspectors and announced baseline inspections by regional inspectors. Two Green findings were identified by the inspectors. These finding 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-Revealed Findings

# **Cornerstone: Initiating Events**

 <u>Green</u>. The inspectors identified a finding of very low significance and NCV of 10 CFR 50, Appendix B, Criterion V, for the licensee's failure to develop and implement an adequate surveillance test procedure to accurately assess the as-found trip setpoint for the pressure switches associated with the main steam line low pressure isolation function. Specifically, the testing methodology incorporated in the surveillance procedures utilized by the licensee to determine the reset and as-found trip setpoints data unacceptably preconditions the pressure switches prior to obtaining the required test data. The licensee entered this issue into their corrective action program. The inspectors identified no cross-cutting aspects associated with this finding.

The inspectors determined that the performance deficiency was more than minor and a finding because it impacted the Reactor Safety Initiating Events Cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power conditions. 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. Since the finding does not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment functions will not be available, the inspectors concluded that the finding was of very low safety significance. (Section 1R22)

# **Cornerstone: Barrier Integrity**

 <u>Green</u>. The inspectors identified a finding of very low significance and NCV of Technical Specification (TS) 3.6.4.3.B for the licensee not entering the associated limiting condition for operation (LCO) when presented with information that the 'A' standby gas treatment (SBGT) system had not met all necessary acceptance criteria to pass a surveillance test required by TSs. Specifically, the time interval between the date of the failed test and the date when 'A' SBGT was declared inoperable exceeded the required LCO and specific action time of TS 3.6.4.3.A (one standby gas subsystem inoperable). The licensee entered this 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 using conservative assumptions in decision making. [H.1(b)]

The inspectors determined that the performance deficiency was more than minor and a finding because it impacted the Reactor Safety Barrier Integrity Cornerstone objective to provide reasonable assurance that physical design barriers; specifically, maintaining the functionality of the standby gas system, protect the public from radionuclide releases caused by accidents or events. 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 Containment Barrier Cornerstone. Since the finding only represented a degradation of the radiological barrier function provided for the SBGT system, the inspectors concluded that the finding was of very low safety significance. (Section 4OA3)

## B. <u>Licensee-Identified Violations</u>

Violations of very low safety significance that were identified by the licensee have been reviewed by inspectors. Corrective actions planned or taken by the licensee have been entered into the licensee's corrective action program. These violations and corrective action tracking numbers are listed in Section 4OA7 of this report.

# **REPORT DETAILS**

# **Summary of Plant Status**

Monticello operated at full power for most of the assessment period except for 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 <u>Readiness For Imminent Adverse Weather Condition Severe Thunderstorm Watch</u>
  - a. Inspection Scope

Since thunderstorms with potential tornados and high winds were forecast in the vicinity of the facility on September 11, 2009, the inspectors reviewed the licensee's overall preparations/protection for the expected weather conditions. On the morning of September 11, 2009, the inspectors observed exterior plant activities, and performed walk downs of the the condensate storage tanks and offgas system, and the licensee's emergency alternating current (AC) power systems, because their safety-related functions could be affected or required as a result of high winds or tornado-generated missiles or the loss of offsite power. The inspectors evaluated the licensee staff's preparations against the site's procedures and determined that the staff's actions were adequate. During the inspection, the inspectors focused on plant specific design features and the licensee's procedures used to respond to specified adverse weather conditions. The inspectors also toured the plant grounds to look for any loose debris that could become missiles during a tornado. The inspectors evaluated operator staffing and accessibility of controls and indications for those systems required to control the plant. Additionally, the inspectors reviewed the Updated Safety Analysis Report (USAR) and performance requirements for systems selected for inspection, and verified that operator actions were appropriate as specified by plant specific procedures. The inspectors also reviewed a sample of corrective action program (CAP) items to verify that the licensee identified adverse weather issues at an appropriate threshold and dispositioned them through the CAP in accordance with station corrective action procedures. Specific documents reviewed during this inspection are listed in the Attachment to this report.

This inspection constituted one readiness for imminent adverse weather condition sample as defined in IP 71111.01-05.

b. Findings

No findings of significance 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:

- Division I control room emergency filtration (CREF) system with Division II CREF out-of-service for planned maintenance;
- Division I residual heat removal service water (RHRSW) system during 14 RHRSW pump replacement;
- 'A' standby gas treatment (SBGT) system with 'B' SBGT out-of-service for planned maintenance; and
- Division II residual heat removal (RHR) system with 11 & 13 RHRSW pumps out-of-service for planned maintenance.

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

These activities constituted four partial system walkdown samples as defined in IP 71111.04-05.

b. Findings

No findings of significance were identified.

1R05 <u>Fire Protection</u> (71111.05)

### .1 <u>Routine Resident Inspector Tours</u> (71111.05Q)

a. <u>Inspection Scope</u>

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 19-A; make-up demineralizer area;
Fire Zone 12-A; lower 4 kV room;
Fire Zone 32-B; emergency filtration train (EFT) building second floor Division II;
Fire Zone 04-E; reactor building plenum; and
Fire Zone 15A; 12 diesel generator 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 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. The inspectors verified that fire hoses and extinguishers were in their designated locations and available for immediate use; that fire detectors and sprinklers were unobstructed; that transient material loading was within the analyzed limits; and fire doors, dampers, and penetration seals appeared to be in satisfactory condition. The inspectors also verified that minor issues identified during the inspection were entered into the licensee's CAP. Documents reviewed are listed in the Attachment to this report.

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

b. Findings

No findings of significance were identified.

- 1R06 <u>Flooding</u> (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. The inspectors performed a walkdown of the following underground bunkers/manholes subject to flooding:

 Vaults 2MH04 [(RHR), core spray (CS), safety relief valve (SRV) and alternate shutdown system (ASDS) cables]; NMH308 [1AR transformer feeder cables]; and NMH333 [2R transformer feeder cables].

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

b. Findings

No findings of significance were identified.

## 1R11 Licensed Operator Regualification Program (71111.11)

- .1 <u>Resident Inspector Quarterly Review</u> (71111.11Q)
  - a. Inspection Scope

On September 8, 2009, 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. 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 of significance were identified.

# 1R12 <u>Maintenance Effectiveness</u> (71111.12)

# .1 <u>Routine Quarterly Evaluations</u> (71111.12Q)

## a. Inspection Scope

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

 1AR transformer unavailability exceeded maintenance rule allowed unavailability time.

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

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

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

This inspection constituted one quarterly maintenance effectiveness sample as defined in IP 71111.12-05.

b. Findings

No findings of significance were identified.

- 1R13 <u>Maintenance Risk Assessments and Emergent Work Control</u> (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:

- unexpected test box and relay indications during turbine control valve fast closure scram test;
- transfer to mechanical pressure regulator to repair oil leak on 11 electric pressure regulator oil pump;
- reactor core isolation cooling (RCIC) outboard steam line isolation motor-operated valve (MOV) 2076 failed stroke time, resulting in emergent torque switch adjustment;
- rod position indication power supply failure and repair; and
- identification of inoperable 'A' SBGT system and subsequent 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.

These maintenance risk assessments and emergent work control activities constituted five samples as defined in IP 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:

- calculation errors identified for minimum motor terminal voltages for 'B' offgas stack dilution fan, 'B' SBGT system exhaust fan, and 12 emergency service water (ESW) pump;
- reactor coolant system and suppression pool chemistry monitoring in support of assumptions in alternate source term post-loss of coolant accident (LOCA) pH analyses;
- non-conservative assumptions for isolation time in steam chase high energy line break (HELB) analyses; and
- emergency diesel generator (EDG) exhaust silencer susceptibility to tornado-generated missile(s).

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 to this report.

These operability inspections constituted four samples as defined in IP 71111.15-05.

b. Findings

No findings of significance were identified.

- 1R18 Plant Modifications (71111.18)
  - .1 Temporary Plant Modifications
    - a. Inspection Scope

The inspectors reviewed the following temporary modification:

• Engineering Change (EC) 14584; place CV-1004/P ['C' moisture separator drain tank drain valve] in bypass.

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 in place could impact overall plant performance. Documents reviewed in the course of this inspection are listed in the Attachment to this report.

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

b. Findings

No findings of significance were identified.

# 1R19 <u>Post-Maintenance Testing</u> (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:

- investigation and corrective maintenance of minor grounds on Division II 250 VDC battery;
- removal of jumpers to enable power range neutron monitor (PRNM) system defense-in-depth algorithm for reactor protection system (RPS) trip logic;
- comprehensive pump test following the replacement of 14 RHRSW pump;
- replacement of relay 3A-K40 (rod drift alarm relay); and
- 1AR transformer post-installation and maintenance testing.

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 five PM testing samples as defined in IP 71111.19-05.

b. Findings

No findings of significance were identified.

# 1R22 <u>Surveillance Testing</u> (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:

- 0006; scram discharge volume high level scram test and calibration procedure; Revision 26 (routine);
- 007-A; condenser low vacuum scram instruments test and calibration procedure; Revision 22 (routine);
- 0187-02; 12 EDG/12 emergency service water (ESW) quarterly pump and valve test; Revision 69 (routine);
- 0255-06-IA-1; high pressure coolant injection (HPCI) quarterly pump and valve test; Revision 80 (inservice test);
- 0465-01; emergency filtration treatment system; Revision 33 (routine); and
- 0253-01; SBGT 'A' train quarterly test; Revision 40 (routine).

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

- did preconditioning occur;
- were the effects of the testing adequately addressed by control room personnel or engineers prior to the commencement of the testing;
- were acceptance criteria clearly stated, demonstrated operational readiness, and consistent with the system design basis;
- plant equipment calibration was correct, accurate, and properly documented;
- as-left setpoints were within required ranges, and the calibration frequency 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 to this report.

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

# b. Findings

### **Introduction**

The inspectors identified a finding of very low significance and non-cited violation (NCV) of 10 CFR 50, Appendix B, Criterion V, for the licensee's failure to develop and implement an adequate surveillance test procedure to accurately assess the as-found trip setpoint for the pressure switches associated with the main steam line low pressure isolation function. This will close Unresolved Item (URI) 05000263/2008004-02.

## Description

On July 7, 2008, the inspectors observed the performance of surveillance test 0054B, "Main Steam Line Low Pressure Group 1 Isolation Instrument Test and Calibration." During power operations, the pressure switches associated with this protective function are subjected to main steam pressure. In accordance with the surveillance procedure, the inspectors observed that the basic testing methodology associated with these pressure switches was as follows: 1) isolate the pressure switch to be tested; 2) uncap the test connection; 3) connect the test equipment to the test connection; 4) increase the pressure until the pressure switch resets and record the RESET test data; 5) bleed off the pressure until the pressure switch trips and record the AS-FOUND trip setpoint; 6) remove the test equipment and restore the pressure switch to operation. This testing methodology caused the pressure switch and associated contacts to change state when the system pressure was relieved in Step 2; again when pressure was applied to reset the pressure switch in Step 4; then a third time when the pressure was bled off to obtain the AS-FOUND trip setpoint in Step 5. This testing methodology subjected the pressure switch to a maximum pressure differential (operating pressure to atmospheric) and fully cycled the pressure switch prior to obtaining the AS-FOUND trip setpoint data.

The inspectors noted that the existing licensee pressure switch testing methodology ensured operability of the pressure switches subsequent to the performance of the applicable surveillance test, since the required AS-LEFT pressure switch setpoint was adjusted (if required) prior to the completion of the surveillance. The inspectors determined that the existing testing methodology potentially masks existing conditions; such as sticking contacts, mechanical binding, and setpoint drift; and could mask existing operability concerns because the pressure switch is fully cycled prior to obtaining the AS-FOUND trip setpoint data.

Inspection Manual Chapter (IMC) 9900 states, in part, that unacceptable preconditioning is defined as the alteration; variation; manipulation; or adjustment of the physical condition of a SSC before or during TS surveillance or ASME Code testing that will alter one or more of SSCs operational parameters, which results in acceptable test results. Such changes could mask the actual as-found condition of the SSC and possibly result in an inability to verify the operability of the SSC. In addition, unacceptable preconditioning could make it difficult to determine whether the SSC would perform its intended function during an event in which the SSC might be needed. Therefore, the inspectors concluded that since the licensee had not performed an evaluation which

justified that the preconditioning of the pressure switches was acceptable, the licensee's surveillance testing methodology which cycles a pressure switch prior obtaining AS-FOUND trip setpoint data constituted unacceptable preconditioning of the pressure switch.

Further investigation by the inspectors revealed that approximately 30 pressure switches, which are relied upon to initiate TS-related protective functions, were tested in a manner similar to that described above.

## <u>Analysis</u>

The inspectors determined that the failure to develop and implement an adequate surveillance test procedure to accurately assess the as-found trip setpoint for the pressure switches associated with the main steam line low pressure isolation function constituted a performance deficiency warranting significance evaluation in accordance with IMC 0612, Appendix B, "Issue Disposition Screening." The inspectors determined that the performance deficiency was more than minor and a finding because it impacted the Reactor Safety Initiating Events Cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power conditions. The inspectors did not identify any cross-cutting aspects associated with this finding.

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. Since the finding does not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment function will not be available, the inspectors concluded that the finding was of very low safety significance.

### Enforcement

Title 10 CFR, Part 50, Appendix B, Criterion V states, in part, that activities affecting quality shall be prescribed by documented instructions of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings. Contrary to the above, on July 7, 2008, the licensee failed to prescribe a documented instruction that was appropriate to the circumstances for the testing of the pressure switches for the Main Steam Low Pressure Group I Isolation, an activity affecting quality. Specifically, Procedure 0054-B incorporated a testing methodology that inappropriately manipulated the pressure switches prior to obtaining as-found-data, thus resulting in unacceptable pre-conditioning. Because this violation was of very low safety significance and was entered into the licensee's corrective action program (CAP 1143424), it is being treated as an NCV, consistent with Section VI.A.1 of the NRC Enforcement Policy. (NCV 05000263/2009004-01)

## 1EP6 Drill Evaluation (71114.06)

### .1 <u>Emergency Preparedness Drill Observation</u>

### a. Inspection Scope

The inspectors evaluated the conduct of a routine licensee emergency drill on July 8, 2009, 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 to this report.

This emergency preparedness drill inspection constituted one sample as defined in IP 71114.06-05.

b. Findings

No findings of significance were identified.

- 4OA1 <u>Performance Indicator Verification</u> (71151)
  - .1 <u>Mitigating Systems Performance Index Emergency AC Power System</u>
    - a. Inspection Scope

The inspectors sampled licensee submittals for the Mitigating Systems Performance Index (MSPI) - Emergency AC Power System performance indicator (PI) for the period from the 3<sup>rd</sup> Quarter 2008 through the 2<sup>nd</sup> Quarter 2009. 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, was used. The inspectors reviewed the licensee's operator narrative logs, MSPI derivation reports, issue reports, event reports and NRC Integrated Inspection Reports were used to validate the accuracy of the submittals. The inspectors reviewed the MSPI component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection and; if so, that the change was in accordance with applicable NEI guidance. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the PI data collected or transmitted for this indicator and none were identified. Documents reviewed are listed in the Attachment to this report.

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

# b. <u>Findings</u>

No findings of significance were identified.

- .2 <u>Mitigating Systems Performance Index High Pressure Injection Systems</u>
- a. Inspection Scope

The inspectors sampled licensee submittals for the Mitigating Systems Performance Index - High Pressure Injection Systems PI for the period from the 3<sup>rd</sup> Quarter 2008 through the 2<sup>nd</sup> Quarter 2009. 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, was used. The inspectors reviewed the licensee's operator narrative logs, issue reports, MSPI derivation reports, event reports and NRC Integrated Inspection Reports were used to validate the accuracy of the submittals. The inspectors reviewed the MSPI component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection and; if so, that the change was in accordance with applicable NEI guidance. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the PI data collected or transmitted for this indicator and none were identified. Documents reviewed are listed in the Attachment to this report.

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

b. Findings

No findings of significance were identified.

- .3 Mitigating Systems Performance Index Heat Removal System
- a. Inspection Scope

The inspectors sampled licensee submittals for the Mitigating Systems Performance Index (MSPI) - Heat Removal System PI for the period from the 3<sup>rd</sup> Quarter 2008 through 2<sup>nd</sup> Quarter 2009. 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, was used. The inspectors reviewed the licensee's operator narrative logs; issue reports; event reports; MSPI derivation reports; and NRC Integrated Inspection Reports to validate the accuracy of the submittals. The inspectors reviewed the MSPI component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection and; if so, that the change was in accordance with applicable NEI guidance. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the PI data collected or transmitted for this indicator and none were identified. Documents reviewed are listed in the Attachment to this report.

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

# b. Findings

No findings 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. <u>Scope</u>

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 Attachment to this report.

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

b. Findings

No findings of significance were identified.

# .2 Daily Corrective Action Program Reviews

a. <u>Scope</u>

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 of significance were identified.

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

# .1 (Closed) Licensee Event Report (LER) 05000263/2009-001-00 and LER 05000263-2009-001-01: Containment Overpressure not Ensured in the Appendix R Analysis

On April 2, 2009, the licensee issued LER 05000263/2009-001-00. The inspectors questioned the adequacy of the safety significance section of the LER. The licensee subsequently revised the safety significance section and re-submitted as LER 05000263/2009-001-01 on September 18, 2009. Both LER revisions discussed a 10 CFR 50, Appendix R analyses for a fire in the main control room or cable spreading room requiring safe shutdown from the alternate shutdown (ASD) panel that did not evaluate spurious opening and venting of primary containment via purge and vent valves. This unanalyzed condition was identified while reviewing calculations in response to a request for additional information from NRC to support the licensee's extended power uprate license amendment. During this postulated event, venting of primary containment could result in insufficient net positive suction head (NPSH) for the 12 CS and Division II RHR pumps (low pressure injection and suppression pool cooling, respectively) needed for safe shutdown following the fire. The licensee determined that the issue had existed since the plant design bases were re-analyzed in 2002. The calculation process prior to 2002 did not require specific fire protection program review that would have likely identified this issue. Based on available instrumentation and controls at the ASD panel; procedures; and operator training; the licensee concluded that during an actual event operators may not have had sufficient pump performance guidance to manage cavitation and flow oscillations resulting from a potential loss of containment overpressure and inadequate NPSH. The potential existed for pump cavitation that may not have been appropriately mitigated to preclude damage to the pumps. The corrective actions associated with this event were documented in CAP 01176349 and included revisions to plant procedures to enact compensatory measures for any hot work in the main control and cable spreading rooms.

The inspectors determined that the issue was a performance deficiency because the issue was the result of the licensee's failure to meet a regulatory requirement and the cause was reasonably within their ability to foresee and correct and should have been prevented. The performance deficiency was more than minor and an inspection finding because it was associated with the Mitigating Systems Cornerstone attribute of external events (fire) and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Continued functionality of the 12 CS and Division II RHR pumps was not ensured during safe shutdown from the ASD panel following a control room or cable spreading room fire due to failure to protect the circuits of the torus and drywell purge and vent valves.

Since the finding was a fire protection-related finding and the licensee was in transition to National Fire Protection Association (NFPA) 805, the licensee completed a quantitative risk assessment evaluation for this issue using the methodology contained in IMC 0609 Appendix F. The licensee's evaluation concluded that the finding was not

associated with a finding of high safety significance based on calculated changes in core damage frequency for the four separate fire areas affected by this issue. A Region III senior risk analyst and fire protection engineer reviewed the licensee's evaluation and agreed with the licensee's overall conclusion that the risk significance associated with this issue was less than the red risk threshold.

This licensee-identified finding involved a violation of 10 CFR 50, Appendix B, Criterion III, "Design Control." The enforcement aspects of this violation are discussed in Section 40A7 of this report. Documents reviewed as part of this inspection are listed in the Attachment. Revisions 0 and 1 of this LER are closed.

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

# .2 (Closed) Licensee Event Report 05000263-2009-004-00: Missed Technical Specification Action for Failed Technical Specification Surveillance on Standby Gas Treatment System

## a. Inspection Scope

On July 1, 2009, during the performance of a TS surveillance test, an out-of-band reading was taken during a procedure step that was specified as an acceptance criteria step for the procedure. The impact of this out-of-band parameter on the operability of the system was not recognized until later reviews of the completed surveillance procedure, and resulted in the licensee not entering the required TS action statement. The inspectors reviewed the applicable documents; timeline; performance deficiencies; and licensee corrective actions associated with this event.

### b. Findings

### **Introduction**

The inspectors identified a finding of very low significance and NCV of TS 3.6.4.3.B for the licensee not entering the associated limiting condition for operation (LCO) when presented with information that the 'A' SBGT system had not met all necessary acceptance criteria to pass a surveillance test required by TSs. Specifically, the time interval between the date of the failed test and the date when the 'A' SBGT system was declared inoperable exceeded the required LCO and specific action time of TS 3.6.4.3.A (one standby gas subsystem inoperable). Additionally, two licensee-identified violations of regulatory requirements associated with this LER closure are discussed in Section 4OA7 of this report.

### **Description**

A brief timeline, which documents the pertinent information associated with this event, is documented below.

• <u>July 1 (day shift)</u>: Operations performed quarterly surveillance test 0253-01 for the 'A' SBGT system. During the performance of the test, a licensed operator recorded a flow value which was outside the required acceptance band and contacted the control room supervisor (CRS). The CRS incorrectly justified the parameter as acceptable and continued with the performance of the test. To compound the error, upon the discovery of the acceptance criteria step that was not met, the CRS did not notify the applicable system engineer as required by the surveillance test procedure.

- <u>July 1 (night shift)</u>: Two senior reactor operators (SROs) reviewed the completed 0253-01 procedure. During their review, neither SRO identified that a flow parameter in an acceptance criteria step was outside the allowable band and that since the surveillance procedure had not been competed satisfactorily, the operability of 'A' SBGT system was in question.
- <u>July 7</u>: During a review of the completed 0253-01 test procedure, the system engineer noted the out-of-band reading, but did not recognize that the out-of-band reading constituted a failed surveillance affecting the operability of the SBGT subsystem. The system engineer attempted to contact the two SROs who had performed the review of the 0253-02 procedure via email to verify that the flow value had been documented correctly. The issue was not entered into the CAP at this time.
- <u>July 9</u>: One of the SROs responded to the system engineer via email and stated that the flow value recorded in the procedure was correct. This issue was not entered into the CAP at this time.
- <u>July 15</u>: The system engineer responded to the SRO via email, questioning whether the 0253-01 procedure needed to be re-performed to ensure or place the flow rate within the acceptance band. This issue was not entered into the CAP at this time.
- <u>July 17</u>: The SRO responded to the system engineer via email and questioned the system engineer regarding adjusting the system flow, with the system in automatic, and also asked if the system engineer had entered the issue into the CAP. The system engineer responded via email, and questioned the SRO if entering the issue into the CAP was appropriate. The SRO responded to the system engineer via email that the issue should be entered into the CAP. This issue was not entered into the CAP at this time.
- <u>July 20 (09:15)</u>: CAP 01189968 was written to document the issue associated with the 'A' SBGT system flow not being within the acceptance band during the conduct of the 0253-01 surveillance test on July 1.
- <u>July 20 (09:46)</u>: Upon the receipt of CAP 01189968, the duty crew declared the 'A' SBGT system inoperable, entered TS 3.6.4.3, and entered the 7-day LCO associated with having one standby gas subsystem inoperable. The duty crew determined that the time of discovery for the failed surveillance was July 20, 2009, at 09:46.
- <u>July 21</u>: After receiving specific information associated with the performance and review of the surveillance test conducted by operations on July 1, 2009, and subsequent email traffic between the SBGT system engineer associated with the acceptability of the test flow data, the inspectors questioned senior licensee management regarding the appropriateness of the July 20, 2009, discovery time

for the issue. The inspectors informed senior licensee management that since the duty crew was aware of the improper flow during the July 1<sup>st</sup> surveillance test and that the SBGT system engineer had contacted Operations on July 7<sup>th</sup>, questioning the system flow that was documented in the completed surveillance procedure, the time of discovery should be during this time period (July 1<sup>st</sup> to July 7<sup>th</sup>). Additionally, the inspectors asked licensee management why, if July 7<sup>th</sup> was assumed as the time of discovery and the LCO and Action completion time associated with one standby gas subsystem being inoperable had expired, had they not taken action to begin shutting down the plant in accordance with Technical Specifications. Licensee management informed the inspectors that the time of discovery was when the duty shift manager was made aware of the issue and; therefore, the July 20, 2009, identification date was appropriate. The inspectors also engaged a senior licensee regulatory affairs manager and received a similar answer regarding time of discovery.

- <u>July 21 (17:41)</u>: Subsequent to the completion of several corrective actions and the successful completion of surveillance procedure 0253-01, the 'A' SBGT system was declared operable.
- <u>August 21</u>: Root Cause Evaluation (RCE) 01190129, "Failure to Promptly Identify Failed SBGT Surveillance," was issued. In this report, the licensee RCE team determined that the time of discovery; as determined by the duty crew, was incorrect and should have been dated back to the time of occurrence, approximately 1100 on July 1, 2009. The team's conclusion was based on the fact that the time of system inoperability could have been readily determined, because during the initial performance of the 0253-01 procedure, the operators were aware that the flow was out of the required band and should have recognized the requirement to declare the system inoperable due to a failed surveillance. Additionally, the team determined that the station should have discovered the inoperability during the surveillance completion review conducted by the two SROs, following the completion of the surveillance.

The inspectors determined that there was one NRC-identified violation and two licensee-identified violations of regulatory requirements associated with this issue. The first licensee-identified violation was associated with the licensee failing to properly implement TS surveillance test 0253-01, "Standby Gas Treatment 'A' Train Quarterly Test," on July 1, 2009. Specifically, while performing Step 10b (Step 10b implements Surveillance Requirement 3.6.4.3.2 in accordance with TS 5.5.6, "Ventilation Filter Testing Program"), shift supervision did not recognize the significance of a system flow indication which was outside of its acceptance criteria band, and did not notify the applicable system engineer as required by the procedure. The second licensee-identified violation was associated with the failure, on several occasions, to promptly identify that the measured flowrate recorded during the performance of surveillance test 0253-01 was outside the acceptance criteria band, which should have resulted in a failed surveillance and resulted in the 'A' SBGT subsystem being declared inoperable. Due to the failure to promptly identify this condition adverse to quality, the 'A' SBGT subsystem was not declared inoperable until July 20, 2009, approximately 19 days after the abnormal flow indication was first observed. These two violations of regulatory requirements are further discussed as licensee-identified violations in Section 4OA7 of this report.

# <u>Analysis</u>

The inspectors determined that the failure to recognize that conditions associated with the extended inoperability of 'A' SBGT subsystem, due to a failed surveillance test requiring entry into TS 3.6.4.3.B, was a performance deficiency warranting significance evaluation in accordance with IMC 0612, Appendix B, "Issue Disposition Screening." The inspectors determined that the performance deficiency was more than minor and a finding because it impacted the Reactor Safety Barrier Integrity Cornerstone objective to provide reasonable assurance that physical design barriers; specifically, maintaining the functionality of the standby gas system, protect the public from radionuclide releases caused by accidents or events. The inspectors determined that the performance, having Decision Making components, and involving aspects associated with using conservative assumptions in decision making. [H.1(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 Containment Barrier Cornerstone. Since the finding only represented a degradation of the radiological barrier function provided for the SBGT system, the inspectors concluded that the finding was of very low safety significance.

## **Enforcement**

Technical Specification 3.6.4.3 states, in part, with one SGT subsystem inoperable, restore the SGT subsystem to an operable status within 7 days (Action A). For operating Modes 1, 2, or 3, if the required action cannot be accomplished within associated completion time, then place the plant in Mode 3 within 12 hours and Mode 4 within 36 hours (Action B). Contrary to this requirement, on July 20, 2009, when presented with information that the 'A' SBGT system had not met all necessary acceptance criteria to pass a surveillance test required by TSs, the time interval between the date of the failed test and the date when the 'A' SBGT system was declared inoperable exceeded the required LCO and specific action time of TS 3.6.4.3.A (one standby gas subsystem inoperable) and TS 3.6.4.3.B was not entered. Because this violation was of very low safety significance and was entered into the licensee's corrective action program (CAP 01190129; 01200258), it is being treated as an NCV, consistent with Section VI.A.1 of the NRC Enforcement Policy. (NCV 05000263/2009004-02)

### .3 (Closed) Licensee Event Report 05000263-2009-003-00: Main Steam Line 'B' Flow Isolation Instrumentation Inoperable Due to Leaking Equalizing Manifold Valve

On May 12, 2009, while raising reactor power from 30 to 50 percent, the operators identified 'B' main steam line flow isolation indication was indicating approximately 25 percent lower than the other three flow instruments. Subsequent to the identification of the issue, the licensee entered the applicable TS action and implemented corrective actions to address the cause of the event, which was determined to be a leaking instrument manifold equalizing valve. The licensee determined this event to be reportable under 10 CFR 50.72(b)(3)(v)(C and D). The event was considered to be a safety system functional failure.

The licensee determined the root cause of the failure to be a deficiency in their program which maintains instrument manifold; specifically, to maintain adequate lubrication on threaded components associated with the manifold. Additionally, the licensee determined that contributing causes included valve designs that exposed threads to process fluids which; during repeated use, contributed to the loss of the lubrication. Corrective actions taken by the licensee included replacing the leaking equalizing valve, schedule the replacement of three similar safety-related equalizing valves, and several other safety-related instruments, which may be susceptible to similar types of failure.

The inspectors evaluated this event and determined the event report to be closed.

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

#### 4OA5 Other Activities

#### .1 Quarterly Resident Inspector Observations of Security Personnel and Activities

#### a. Inspection Scope

During the inspection period, the inspectors conducted observations of security force personnel and activities to ensure that the activities were consistent with licensee security procedures and regulatory requirements relating to nuclear plant security. These observations took place during both normal and off-normal plant working hours.

These quarterly resident inspector observations of security force personnel and activities did not constitute any additional inspection samples. Rather, they were considered an integral part of the inspectors' normal plant status review and inspection activities.

### b. Findings

No findings of significance were identified.

### .2 Unit 1 Power Uprate-Related Inspection Activities (71004)

During the inspection period, a Component Design Bases Inspection was conducted. During this inspection, the inspectors reviewed EC 11126; EPU – MOD 11 – Balance of Plant Piping Support Modifications; Revision 0 and associated supporting calculations. The inspector's review is ongoing and the inspection sample results will be discussed in NRC Inspection Report 05000263/2009007. Reference to this inspection sample is for tracking purposes only and does not represent an inspection sample in this report.

As discussed in Section 4OA3.1, the inspectors also reviewed the licensee's actions to address LER 05000263-2009-001-01. This review was part of the routine evaluation of items entered into the corrective action program (associated with power uprate activities) and is not considered an inspection sample.

### 4OA6 Management Meetings

#### .1 Exit Meeting Summary

On October 8, 2009, 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.

#### 4OA7 Licensee-Identified Violations

The following violations of very low significance (Green) were identified by the licensee and are violations of NRC requirements, which meet the criteria of Section VI of the NRC Enforcement Policy, NUREG-1600, for being dispositioned as an NCV.

• The following violation met the criteria established by the NRC's Interim Enforcement Policy Regarding Enforcement Discretion for Certain Fire Protection Issues (10 CFR Part 50.48) for a licensee in NFPA 805 transition. Therefore, the NRC exercised its enforcement discretion to not cite this violation.

Title 10 CFR Part 50, Appendix B, Criterion III, "Design Control," requires, in part, that measures shall be established to assure that applicable regulatory requirements and the design basis are correctly translated into specifications, drawings, procedures, and instructions. Contrary to the above, as described in CAP 1176349 dated April 2, 2009, the licensee identified that 10 CFR 50, Appendix R analyses for a fire in the main control room or cable spreading room requiring safe shutdown from the alternate shutdown (ASD) panel, did not evaluate spurious opening and venting of primary containment via purge and vent valves. Spurious openings of these valves due to a control or cable spreading room fire could have decreased containment overpressure and the available NPSH for the low pressure injection systems (residual heat removal (RHR) and core spray (CS)), affecting safe shutdown at the ASD panel. Procedures for shutdown outside of the control room did not contain guidance to ensure adequate NPSH for the 12 CS and Division II RHR pumps.

The licensee is in transition to NFPA 805 and: therefore, the licensee-identified violation was evaluated in accordance with the criteria established by Section A of the NRC's Interim Enforcement Policy Regarding Enforcement Discretion for Certain Fire Protection Issues (10 CFR Part 50.48) for a licensee in NFPA 805 transition. The inspectors determined that for this violation: (1) the licensee would have identified the violation during the scheduled transition to 10 CFR Part 50, Section 48(c); (2) the licensee had established adequate compensatory measures within a reasonable time frame following identification and would correct the violation as a result of completing the NFPA 805 transition; (3) the violation was not likely to have been previously identified by routine licensee efforts; and (4) the violation was not willful. The finding also met additional criteria established in Section 06.06.a.2 of IMC 0305. In addition, in order for the NRC to consider granting enforcement discretion, the violation must not be associated with a finding of high safety significance (i.e., Red). The inspectors determined that the finding was not associated with a Red finding. As a result, the inspectors concluded that the violation met all four criteria

established by Section A and the NRC was exercising enforcement discretion to not cite this violation in accordance with the NRC's Enforcement Policy.

- Technical Specification 5.4.1 requires, in part, that written procedures shall be implemented covering the applicable procedures Appendix A of Regulatory Guide 1.33, Revision 2. Appendix A of Regulatory Guide 1.33 includes, in part, TS surveillance test procedures. Contrary to this requirement, the licensee did not properly implement TS surveillance test 0253-01; "Standby Gas Treatment 'A' Train Quarterly Test", on July 1, 2009. Specifically, the licensee did not satisfactorily complete Step 10b of 0253-01 when the measured flow rate was found outside of the acceptance criteria band (Step 10b implements Surveillance Requirement 3.6.4.3.2 in accordance with TS 5.5.6, "Ventilation Filter Testing Program"). Although the licensed operator performing Step 10b recognized the out-of-specification value and notified the Operations Shift Supervisor, an immediate operability evaluation was not made. The inspectors determined that this 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, the performance deficiency would have the potential to lead to a more significant safety concern. The licensee entered the issue into their corrective action program as CAP 01190129. The inspectors applied IMC 0609, Attachment 4, "Phase 1 - Initial Screening and Characterization of Findings" to this finding. Under Column 4 of the Table 4a worksheet, the inspectors answered "Yes" to Question 1 since the finding only represented a degradation of the radiological barrier function provided by the SBGT system. Therefore, the finding was considered to be of very low safety significance.
- Title 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," requires, in part, . that measures shall be established to assure that conditions adverse to quality are promptly identified and corrected. Contrary to this requirement, the licensee did not promptly identify on July 1, 2009, that a measured flow rate outside of the acceptance criteria of surveillance test 0253-01 rendered the 'A' standby gas treatment (SBGT) system inoperable. Due to the failure to promptly identify this condition adverse to quality, the 'A' SBGT system was not declared inoperable until July 20, 2009, after the operations duty shift manager became aware of the test results from July 1, 2009. The inspectors determined that this 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 finding was more than minor because it involved the configuration control attribute of the Barrier Integrity Cornerstone objective to provide reasonable assurance that physical design barriers (containment) protect the public from radionuclide releases caused by accidents or events. The licensee entered the issue into the corrective action program as CAP 01189968. The inspectors applied IMC 0609, Attachment 4, "Phase 1 – Initial Screening and Characterization of Findings" to this finding. Under Column 4 of the Table 4a worksheet, the inspectors answered "Yes" to Question 1, since the

finding only represented a degradation of the radiological barrier function provided by the SBGT system. Therefore, the finding was considered to be of very low safety significance.

ATTACHMENT: SUPPLEMENTAL INFORMATION

# SUPPLEMENTAL INFORMATION

# **KEY POINTS OF CONTACT**

### <u>Licensee</u>

- T. O'Connor, Site Vice President
- J. Grubb, Plant Manager
- N. Haskell, Site Engineering Director
- K. Jepson, Business Support Manager
- S. Sharp, Operations Manager
- S. Radebaugh, Maintenance Manager
- M. Holmes, Radiation Protection/Chemistry Manager
- G. Salamon, Acting Regulatory Affairs Manager

Nuclear Regulatory Commission

K. Riemer, Chief, Reactor Projects Branch 2

# LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

## <u>Opened</u>

05000263/2009004-01	NCV	Preconditioning of Safety Related Pressure Switches During Surveillance Testing (Section 1R22)
05000263/2009004-02	NCV	Failure To Appropriately Implement TS 3.6.4.3 (Section 40A3)

### <u>Closed</u>

05000263/2008004-02	URI	Potential Pre-Conditioning of Pressure Instruments/Switches (Section 1R22)
05000263/2009004-01	NCV	Preconditioning of Safety Related Pressure Switches During Surveillance Testing (Section 1R22)
05000263/2009004-02	NCV	Failure To Appropriately Implement TS 3.6.4.3 (Section 40A3)
05000263/2009-001-00	LER	Containment Overpressure not Ensured in the Appendix R Analysis (Section 40A3)
05000263/2009-001-01	LER	Containment Overpressure not Ensured in the Appendix R Analysis (Section 40A3)
05000263/2009-003-00	LER	Main Steam Line 'B' Flow Isolation Instrumentation Inoperable Due to Leaking Equalizing Manifold Valve (Section 40A3)
0500263/2009-004-00	LER	Missed Technical Specification Action for Failed Technical Specification Surveillance on Standby Gas Treatment System (Section 40A3)

# 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 of 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

A.6; Acts of Nature; Revision 31 Operations Work Instruction (OWI)-01.04; Operations General Procedural Guidance; Revision 17 1444; Post Severe Weather Checklist; Revision 7

#### Section 1R04

2201; Plant Prestart Checklist CRV-EFT System; Revision 8 2154-23; RHR Service Water System Prestart Valve Checklist; Revision 30 2154-06; Standby Gas Treatment Prestart Valve Checklist; Revision 11 2154-23; Residual Heat Removal System Prestart Checklist; Revision 44

#### Section 1R05

Strategy A.2-19-A; Make-up Demineralizer Area; Revision 5 Strategy A.3-32-B; EFT Building Second Floor (Div II) Strategy A.3-04-E; Reactor Building Plenum Strategy A.3-15-A; NO. 12 DG Room; Revision 7

#### Section 1R06

EWI-08.19.01; Cable Condition Monitoring Program; Revision 1 WO 378965; Inspection of Manholes for Water or Evidence of Water; Revision 1 WO 376794; Perform Visual Inspection of Manhole

Section 1R11

SEG RQ-SS-94

#### Section 1R12

CAP 01190374; 1AR Exceeded the Maintenance Rule Unavailability Time CAP 01198910; 1AR Maintenance Rule Unavailability Time Exceeded Unavailability Log for 1AR Transformer; March 2006 – September 2009 Monticello Maintenance Rule 4.16 kV Station Auxiliary Basis Document; Revision 7

#### Section 1R13

0011-A; Turbine Control Valve Fast Closure Scram Test and Calibration (>30% of Rated); Revision 11

CAP 01188550; Possible Failure of 5A-K8D to Fully Reset during Test 0011-A

WO 385899; P-140A; 11 EPR Pump Discharge Filter Leak Operations Manual B.05.09-05; Main Steam Pressure Control; System Operation; Revision 10 CAP 01191917; Front Standard / EPR Oil Level Out-of-Specification CAP 01192925; MO-2076; RCIC Steam Line Isolation Outboard 0255-08-IA-1; RCIC Quarterly Pump and Valve Tests; Revision 64 WO 388449; MO-2076; RCIC Steam Line Isolation Outboard 0253-01; SBGT 'A' Train Quarterly Test; Revision 39

# Section 1R15

CAP 01193840; Error/Wrong Input in Calculation (CA) 06-104, 480V Motor Terminal Voltage CAP 01056182; Motor Terminal Voltages Could Drop Below 90% Rated II.05; Chemistry Limits & Sampling Frequencies; Revision 20 CA 04-042; MNGP AST – Post LOCA pH Analyses; Revision OA CAP 01194499; CALC 96-080 and 97-044 Operator Action < 10 Minutes CAP 01079705; Modify EDG Silencer Lines to Restore the EDGs Within a Reasonable Time Frame CAP 01086218; Station Evaluation and Review of NRC Violation in IR 2007-06 Safety Evaluation by the Division of Reactor Licensing; U.S. Atomic Energy Commission in the Matter of Northern States Power Company Monticello Nuclear Generating Plant, Unit 1; Docket Number 50-263; March 18, 1970 1487; Site Housekeeping Quarterly Inspection; Revision 5 A.6; Acts of Nature; Revision 31

## Section 1R18

CAP 01190596; CV-1003 ('C' MSDT Dump) is Lifting/Leaking by – Thermal Performance WO 387692; Install T-Mod to Control CV-1004

### Section 1R19

CAP 01180958; Division II 250V Battery Monitoring Panel Readings Unusual WO 384617; ELEC-Y-81, Ground Investigation and Repair OWI-03.05; Safety Function Determination Program; Revision 2 Operations Manual C.4-B.09.13.G; Loss of Y-80; Revision 11 EC 10856; Restoration of PRNMS DIDA RPS Trips CAP 1195955; Question on Pre-Service Testing Adequacy for Operability WO 386503-07; 14 RHRSW Pump Comprehensive Test 4214-PM; RHR Service Water Pump Replacement; Revision 3 0255-05-IA-1-2; 'B' RHRSW Quarterly Pump and Valve Tests; Revision 68 0255-05-III-4A; Comprehensive 14 RHRSW Pump and Valve Tests; Revision 18 WO 383957; 3A-K40 Relay Replacement 4858-04-OCD; 1AR Reserve Transformer Maintenance Isolation; Revision 13 WO 376486; Restoration of PRNMS DIDA RPS Trips Condition Evaluation 01187408; Required 1AR Testing to Verify as a Qualified Offsite Power Source; Revisions 0, 1, and 2

# Section 1R22

CAP 01191073; Loose Bolt on 11 EDG Exhaust Manifold Flange CAP 01191151; G-3A, Exhaust Bolts not at Current Prescribed Torques 0007A; Condenser Low Vacuum Scram Instruments Test and Calibration Procedure; Revision 22

### Section 1EP6

MNGP Emergency Plan Drill; July 8 & 9, 2009; Controller Manual; Revision 0 CAP 01188769; General Emergency Classification Untimely during 7/08/09 Drill CAP 01188771; Follow-up Protective Action Recommendation Development Inaccurate/Untimely

## Section 4OA1

MSPI Basis Document; PRA-CALC-05-003; Revision 1 4 AWI-04.08.11; NRC/WANO PIs and Monthly Operating Report Program; Revision 13 EWI-04.08.11; NRC and WANO Performance Indicator - Data Collection; Revision 3 FP-PA-PI-02; NRC/INPO/WANO Performance Indicator Reporting; Revision 6 FG-E-MSPI-01; Mitigating System Performance Index; Revision 2 Unavailability Log for RCIC; July 2008 - June 2009 MSPI Unavailability Index Derivation Report for Heat Removal System; July 2008 – June 2009 MSPI Unavailability Index Derivation Report for Emergency AC Power Systems; July 2008 - June 2009 MSPI Unavailability Index Derivation Report for High Pressure Injection System; July 2008 - June 2009 MSPI Unreliability Index Derivation Report for Heat Removal System: July 2008 – June 2009 MSPI Unreliability Index Derivation Report for Emergency AC Power Systems; July 2008 - June 2009 MSPI Unreliability Index Derivation Report for High Pressure Injection System; July 2008 - June 2009 MSPI Performance Limit Exceeded Derivation Report for Emergency AC Power Systems: July 2008 – June 2009 MSPI Performance Limit Exceeded Derivation Report for Heat Removal System; July 2008 - June 2009 MSPI Performance Limit Exceeded Derivation Report for High Pressure Injection System; July 2008 – June 2009 CAP 01164976; Unplanned Technical Specification Action Entry due to RCIC Inoperability CAP 01179631; MO-2110 (RCIC Test Return) did not Close as Expected During Surveillance Section 4OA3 CAP 01176349: Containment Valves do not Appear to Meet Appendix R Requirements CAP 01186755; NRC Question Regarding Core Spray Flow Throttling for ASDS CAP 01186659; Station Needs to Revise Safety Significance for LER 2009-01 CAP 01190129; Failure to Promptly Identify Failed SBGT Surveillance CAP 01189968; 'A' SBGT Flow not Within Band 4 AWI-08.01.00; Fire Protection Program Plan; Revision 11

4 AWI-08.01.01; Fire Prevention Practices; Revision 34

Operations Manual B.08.05-05; Fire Protection; Revision 45

Operations Manual C.4-C; Shutdown Outside Control Room; Revision 32 Form 3067; Combustion Source Use Permit; Revision 12 CA 01-177; Determination of Containment Overpressure Required for Adequate NPSH for Low Pressure ECCS Pumps Updated for Suction Strainer Debris Loading; Revision 1 CAP 01200258; NRC Violation – SBGTS 'A' – Station Did Not Enter TS Action CAP 01181868; Manifold Equalizing Valve Failure Causes 'B' Main Steam Line Flow Isolation Instrumentation to Become Inoperable

# LIST OF ACRONYMS USED

AC	Alternating Current
ADAMS	Agencywide Document Access Management System
ASD	Alternate Shutdown
ASDS	Alternate Shutdown System
ASME	American Society of Mechanical Engineers
CAP	Corrective Action Program
CFR	Code of Federal Regulations
CREE	Control Room Emergency Filtration
CRE	Control Room Supervisor
CRO	Coro Spray
	Division of Popoter Projecto
	Engineering Change
EC	Engineering Change
EDG	Emergency Diesel Generator
EFI	
ESW	Emergency Service Water
HELB	High Energy Line Break
HPCI	High Pressure Coolant Injection
IMC	Inspection Manual Chapter
kV	Kilovolt
LCO	Limiting Condition for Operation
LER	Licensee Event Report
LOCA	Loss of Coolant Accident
MOV	Motor-Operated Valve
MSPI	Mitigating Systems Performance Index
NCV	Non-Cited Violation
NEI	Nuclear Energy Institute
NFPA	National Fire Protection Association
NPSH	Net Positive Suction Head
NRC	U.S. Nuclear Regulatory Commission
OWI	Operator Work Instruction
PARS	Publicly Available Records
PI	Performance Indicator
PM	Planned or Preventative Maintenance
PRNMS	Power Range Neutron Monitor System
RCE	Root Cause Evaluation
RCIC	Reactor Core Isolation Cooling
	Posidual Hoat Pomoval
	Residual Heat Removal Service Water
RHROW	Residual field Removal Service Water
RPS CDCT	Reactor Protection System
SBGI	Standby Gas Treatment
SDP	Significance Determination Process
SRO	Senior Reactor Operator
SRV	Safety Relief Valve
SSC	Systems, Structures, and Components
TS	Technical Specification
USAR	Updated Safety Analysis Report
URI	Unresolved Item
Vdc	Volts Direct Current
WO	Work Order

T. O'Connor

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Sincerely,

## /RA/

Kenneth Riemer, Chief Branch 2 Division of Reactor Projects

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SUBJECT: MONTICELLO NUCLEAR GENERATING PLANT NRC INTEGRATED AND POWER UPRATE REVIEW INSPECTION REPORT 05000263/2009004

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