



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

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

February 5, 2010

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

**SUBJECT: MONTICELLO NUCLEAR GENERATING PLANT
NRC INTEGRATED AND POWER UPRATE REVIEW INSPECTION REPORT
05000263/2009005**

Dear Mr. O'Connor:

On December 31, 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 January 7, 2010, with you and other members of your staff.

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

Based on the results of this inspection, the NRC has determined that one Severity Level IV violation of NRC requirements occurred. Additionally, one self-revealed finding of very low safety significance was identified involving a violation 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, four licensee-identified violations are listed in Section 4OA7 of this report.

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

In addition, if you disagree with the 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 the Monticello Nuclear Generating Plant. The information that you provide will be considered in accordance with Inspection Manual Chapter 0305.

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

Sincerely,

/RA/

Kenneth Riemer, Chief
Branch 2
Division of Reactor Projects

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

Enclosure: Inspection Report 05000263/2009005
w/Attachment: Supplemental Information

cc w/encl: Distribution via ListServ

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

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

Report No: 05000263/2009005

Licensee: Northern States Power Company, Minnesota

Facility: Monticello Nuclear Generating Plant

Location: Monticello, MN

Dates: October 1 through December 31, 2009

Inspectors: S. Thomas, Senior Resident Inspector
L. Haeg, Resident Inspector
P. Zurawski, Resident Inspector, Prairie Island
T. Go, Health Physicist
M. Bielby, Senior Operations Engineer
D. Reeser, Operations Engineer
J. Bozga, Reactor Inspector
M. Garza, Emergency Response Specialist

Observers: J. Corujo-Sandin, Reactor Engineer
P. Smagacz, Reactor Engineer

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

Enclosure

TABLE OF CONTENTS

SUMMARY OF FINDINGS	1
REPORT DETAILS	3
Summary of Plant Status.....	3
1. REACTOR SAFETY	3
1R01 Adverse Weather Protection (71111.01)	3
1R04 Equipment Alignment (71111.04)	4
1R05 Fire Protection (71111.05)	5
1R06 Flooding (71111.06).....	6
1R11 Licensed Operator Requalification Program (71111.11).....	6
1R12 Maintenance Effectiveness (71111.12)	11
1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13)	13
1R15 Operability Evaluations (71111.15).....	16
1R19 Post-Maintenance Testing (71111.19).....	17
1R22 Surveillance Testing (71111.22)	18
1EP4 Emergency Action Level and Emergency Plan Changes (71114.04)	19
1EP6 Drill Evaluation (71114.06)	20
2. RADIATION SAFETY	20
2OS1 Access Control to Radiologically Significant Areas (71121.01)	20
2OS2 As-Low-As-Is-Reasonably-Achievable Planning and Controls (71121.02).....	21
2OS3 Radiation Monitoring Instrumentation and Protective Equipment (71121.03)....	22
4. OTHER ACTIVITIES	25
4OA1 Performance Indicator Verification (71151)	25
4OA2 Identification and Resolution of Problems (71152)	28
4OA3 Follow-Up of Events and Notices of Enforcement Discretion (71153)	30
4OA5 Other Activities.....	31
4OA6 Management Meetings	32
4OA7 Licensee-Identified Violations	33
SUPPLEMENTAL INFORMATION	1
Key Points of Contact.....	1
List of Items Opened, Closed and Discussed.....	1
List of Documents Reviewed	2
List of Acronyms Used	8

SUMMARY OF FINDINGS

IR 05000263/2009005; 10/01/2009 – 12/31/2009; Monticello Nuclear Generating Plant; Maintenance Effectiveness; Maintenance Risk Assessments and Emergent Work Control.

This report covers a three-month period of inspection by resident inspectors and announced baseline inspections by regional inspectors. One self-revealed Green finding and one Severity Level IV finding was identified by the inspectors. 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-Revealed Findings

Cornerstone: Barrier Integrity

- Green. A finding of very low safety significance and associated NCV of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was self-revealed for the licensee's failure to include acceptance criteria appropriate to the circumstances for a preventive maintenance procedure for the 'A' standby gas treatment (SBGT) subsystem. Due to the lack of a specific caution to avoid over-tightening of bolts for installation of a blocking device on the 'A' SBGT subsystem suction valve (AO-2945), the valve failed to open during return-to-service testing on September 29, 2009. Failure of AO-2945 to open resulted in an inadvertent initiation of the 'B' SBGT subsystem due to a low flow condition. The licensee took immediate corrective actions and entered the issue into their corrective action program. In order to re-perform return-to-service testing of the 'A' SBGT subsystem after the AO-2945 issue was resolved, the 'B' SBGT subsystem had to be shutdown, requiring entry into limiting condition for operation (LCO) 3.0.3 due to the inoperability of both SBGT subsystems. The inspectors determined that the performance deficiency affected the cross-cutting area of Problem Identification and Resolution, having corrective action program components, and involving aspects associated with identifying issues completely and accurately commensurate with their safety significance. [P.1(a)]

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

The inspectors determined that the performance deficiency was more than minor and a finding because it involved the procedure quality attribute of the Barrier Integrity Cornerstone objective to provide reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. 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 because 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. (Section 1R12)

Severity Level IV. A Severity Level IV NCV of 10 CFR 50.72(b)(3)(v)(C) was identified by the inspectors for the failure of the licensee to make an eight hour notification to the NRC for a condition that, at the time of discovery, could have prevented the fulfillment of the SBGT system safety function. The licensee entered this issue into their corrective action program as CAP 01210817. The inspectors determined that the contributing cause that provided the most insight into the performance deficiency affected the cross-cutting area of Problem Identification and Resolution, having corrective action program components, and involving aspects associated with properly classifying and evaluating for reportability conditions adverse to quality. [P.1(c)]

The inspectors determined that the issue was a performance deficiency because it was the result of the failure to meet a requirement, and the cause was reasonably within the licensee's ability to foresee and correct, and should have been prevented. The inspectors determined that the performance deficiency was more than minor and a finding because the failure to report the condition that could have prevented the fulfillment of the SBGT system safety function affected the NRC's ability to perform its regulatory function. Because violations of 10 CFR 50.72 are considered to be violations that potentially impede or impact the regulatory process, they are dispositioned using the traditional enforcement process instead of the SDP. Per NRC Enforcement Policy, Supplement I, Example D.4, a failure to make a required Licensee Event Report is categorized as a Severity Level IV violation. The inspectors considered the failure to make a required 50.72 report to meet the intent of this example. Because the violation was not repetitive or willful, and it was entered into the licensee's corrective action program, this violation is being treated as a Severity Level IV NCV, consistent with Section VI.A.1 of the NRC Enforcement Policy. (Section 1R13)

B. Licensee-Identified Violations

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 with the following exceptions:

- brief downpower maneuvers to accomplish rod pattern adjustments and to conduct planned surveillance testing activities;
- downpower to approximately 30 percent reactor power (October 1 - 3, 2009), to perform secondary plant level transmitter repairs; and
- downpower to approximately 70 percent reactor power (November 21 - 22, 2009), to investigate increased leakage from secondary plant components.

1. REACTOR SAFETY

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

1R01 Adverse Weather Protection (71111.01)

.1 Winter Seasonal Readiness Preparations

a. Inspection Scope

The inspectors conducted a review of the licensee's preparations for impending adverse winter conditions to verify that the plant's design features and implementation of procedures were sufficient to protect mitigating systems from the effects of adverse weather. This inspection focused on recent changes to Abnormal Procedure C.4-B.08.03.A, "Loss of Heating Boiler," which implements the use of temporary heaters, instead of a temporary boiler, to heat risk-significant areas of the plant subsequent to the loss of the station heating boiler. This sample was completed in lieu of the external flooding sample, since the Monticello site risk exposure to external flooding is not significant. Documentation for selected risk-significant systems was reviewed to ensure that these systems would remain functional when challenged by inclement weather. During the inspection, the inspectors focused on plant specific design features and the licensee's procedures used to mitigate or respond to adverse weather conditions. 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. Cold weather protection, such as heat tracing and area heaters, was verified to be in operation where applicable. The inspectors also reviewed corrective action program (CAP) items to verify that the licensee was identifying adverse weather issues at an appropriate threshold and entering them into their CAP in accordance with station corrective action procedures. Specific documents reviewed during this inspection are listed in the Attachment to this report.

This inspection constituted one winter seasonal readiness preparations sample as defined in Inspection Procedure (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 system:

- motor control center (MCC) 133 during testing of MCC 143 breakers.

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 one partial system walkdown sample as defined in IP 71111.04-05.

b. Findings

No findings of significance were identified.

.2 Semi-Annual Complete System Walkdown

a. Inspection Scope

On November 28, 2009, the inspectors performed a complete system alignment inspection of the high pressure coolant injection (HPCI) 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. Documents reviewed are listed in the Attachment to this report.

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

b. Findings

No findings 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:

- FZ 23B (intake structure corridor);
- FZ 06 (refuel floor);
- FZ 33 (emergency filtration treatment (EFT) building 3rd floor);
- FZ 31B (EFT building 1st floor); and
- FZ 19B and 19C (essential MCC area and feedwater pipe chase).

The inspectors reviewed areas to assess if the licensee had implemented a fire protection program that adequately controlled combustibles and ignition sources within the plant; effectively maintained fire detection and suppression capability; maintained passive fire protection features in good material condition; and implemented adequate compensatory measures for out-of-service, degraded or inoperable fire protection equipment, systems, or features in accordance with the licensee's fire plan. The inspectors selected fire areas based on their overall contribution to internal fire risk as documented in the plant's Individual Plant Examination of External Events with later additional insights; their potential to impact equipment which could initiate or mitigate a plant transient; or their impact on the plant's ability to respond to a security event. 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 that 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 Flooding (71111.06)

.1 Internal Flooding

a. Inspection Scope

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

- turbine building 931' west stator cooling water room (potential to impact essential 4.16 kV switchgear rooms).

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

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Regualification Program (71111.11)

.1 Resident Inspector Quarterly Review (71111.11Q)

a. Inspection Scope

On October 13, 2009, the inspectors observed a crew of licensed operators in the plant's simulator during licensed operator regualification 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.

.2 Facility Operating History (71111.11B)

Completion of Sections .3 through .10 constituted one biennial licensed operator requalification inspection sample as defined in IP 71111.11B.

a. Inspection Scope

The inspectors reviewed the plant's operating history from September 1, 2007, through September 30, 2009, to identify operating experience that was expected to be addressed by the Licensed Operator Requalification Training (LORT) program. The inspectors verified that the identified operating experience had been addressed by the facility licensee in accordance with the station's approved Systems Approach to Training (SAT) program to satisfy the requirements of 10 CFR 55.59(c). The documents reviewed during this inspection are listed in the Attachment to this report.

b. Findings

No findings of significance were identified.

.3 Licensee Requalification Examinations

a. Inspection Scope

The inspectors performed an inspection of the licensee's LORT test/examination program for compliance with the station's SAT program which would satisfy the requirements of 10 CFR 55.59(c)(4). The reviewed operating examination material consisted of two operating tests, each containing two dynamic simulator scenarios and six job performance measures (JPMs). The written examinations reviewed consisted of two written examinations, consisting of approximately 30 questions for each examination. The inspectors reviewed the annual requalification operating test and biennial written examination material to evaluate general quality, construction, and difficulty level. The inspectors assessed the level of examination duplication from week-to-week for the operating test and written examination material administered in 2009. The inspectors reviewed the methodology for developing the examinations, including the LORT program 2-year sample plan, probabilistic risk assessment insights,

previously identified operator performance deficiencies, and plant modifications. The documents reviewed during this inspection are listed in the Attachment to this report.

b. Findings

No findings of significance were identified.

.4 Licensee Administration of Requalification Examinations

a. Inspection Scope

The inspectors observed the administration of a requalification operating test to assess the licensee's effectiveness in conducting the test to ensure compliance with 10 CFR 55.59(c)(4). The inspectors evaluated the performance of one operating crew in parallel with the facility evaluators during two dynamic simulator scenarios and evaluated various licensed crew members concurrently with facility evaluators during the administration of several JPMs. The inspectors assessed the facility evaluators' ability to determine adequate crew and individual performance using objective, measurable standards. The inspectors observed the training staff personnel administer the operating test, including conducting pre-examination briefings, evaluations of operator performance, and individual and crew evaluations upon completion of the operating test. The inspectors evaluated the ability of the simulator to support the examinations. A specific evaluation of simulator performance was conducted and documented in the section below titled, "Conformance with Simulator Requirements Specified in 10 CFR 55.46." The documents reviewed during this inspection are listed in the Attachment to this report.

b. Findings

No findings of significance were identified.

.5 Examination Security

a. Inspection Scope

The inspectors observed and reviewed the licensee's overall licensed operator requalification examination security program related to examination physical security (e.g., access restrictions and simulator considerations) and integrity (e.g., predictability and bias) to verify compliance with 10 CFR 55.49, "Integrity of Examinations and Tests." The inspectors also reviewed the facility licensee's examination security procedure and the implementation of security and integrity measures (e.g., security agreements, sampling criteria, bank use, and test item repetition) throughout the examination process. The documents reviewed during this inspection are listed in the Attachment to this report.

b. Findings

No findings of significance were identified.

.6 Licensee Training Feedback System

a. Inspection Scope

The inspectors assessed the methods and effectiveness of the licensee's processes for revising and maintaining its LORT program up-to-date, including the use of feedback from plant events and industry experience information. The inspectors reviewed the licensee's quality assurance oversight activities, including licensee training department self-assessment reports. The inspectors evaluated the licensee's ability to assess the effectiveness of its LORT program and their ability to implement appropriate corrective actions. This evaluation was performed to verify compliance with 10 CFR 55.59(c) and the licensee's SAT program. The documents reviewed during this inspection are listed in the Attachment to this report.

b. Findings

No findings of significance were identified.

.7 Licensee Remedial Training Program

a. Inspection Scope

The inspectors assessed the adequacy and effectiveness of the remedial training conducted since the previous biennial requalification examinations and the training from the current examination cycle to ensure that they addressed weaknesses in licensed operator or crew performance identified during training and plant operations. The inspectors reviewed remedial training procedures and individual remedial training plans. This evaluation was performed in accordance with 10 CFR 55.59(c) and with respect to the licensee's SAT program. The documents reviewed during this inspection are listed in the Attachment to this report.

b. Findings

No findings of significance were identified.

.8 Conformance with Operator License Conditions

a. Inspection Scope

The inspectors reviewed the facility and individual operator licensees' conformance with the requirements of 10 CFR Part 55. The inspectors reviewed the facility licensee's program for maintaining active operator licenses and to assess compliance with 10 CFR 55.53(e) and (f). The inspectors reviewed the procedural guidance and the process for tracking on-shift hours for licensed operators and which control room positions were granted watch-standing credit for maintaining active operator licenses. The inspectors reviewed the facility licensee's LORT program to assess compliance with the requalification program requirements as described by 10 CFR 55.59(c). Additionally, medical records for six licensed operators were reviewed for compliance with 10 CFR 55.53(l). The documents reviewed during this inspection are listed in the Attachment to this report.

b. Findings

No findings of significance were identified.

.9 Conformance with Simulator Requirements Specified in 10 CFR 55.46

a. Inspection Scope

The inspectors assessed the adequacy of the licensee's simulation facility (simulator) for use in operator licensing examinations and for satisfying experience requirements as prescribed in 10 CFR 55.46, "Simulation Facilities." The inspectors also reviewed a sample of simulator performance test records (i.e., transient tests, malfunction tests, steady state tests, and core performance tests), simulator discrepancies, and the process for ensuring continued assurance of simulator fidelity in accordance with 10 CFR 55.46. The inspectors reviewed and evaluated the discrepancy process to ensure that simulator fidelity was maintained. Open simulator discrepancies were reviewed for importance relative to the impact on 10 CFR 55.45 and 55.59 operator actions as well as on nuclear and thermal hydraulic operating characteristics. The inspectors conducted interviews with members of the licensee's simulator staff about the configuration control process and completed the IP 71111.11, Appendix C, checklist to evaluate whether or not the licensee's plant-referenced simulator was operating adequately as required by 10 CFR 55.46(c) and (d). The documents reviewed during this inspection are listed in the Attachment to this report.

b. Findings

No findings of significance were identified.

.10 Annual Operating Test Results (71111.11B)

a. Inspection Scope

The inspectors reviewed the overall pass/fail results of the biennial written examination, the individual JPM operating tests, and the simulator operating tests (required to be given per 10 CFR 55.59(a)(2)) administered by the licensee from September 21, through October 30, 2009, as part of the licensee's operator licensing requalification cycle. These results were compared to the thresholds established in IMC 0609, Appendix I, "Licensed Operator Requalification Significance Determination Process (SDP)." The evaluations were also performed to determine if the licensee effectively implemented operator requalification guidelines established in NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," and IP 71111.11, "Licensed Operator Requalification Program." The documents reviewed during this inspection are listed in the Attachment to this report.

Completion of this section constituted one biennial licensed operator requalification inspection sample as defined in IP 71111.11B.

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:

- standby gas treatment system (SBGT); and
- drywell purge and vent system.

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

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

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

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

b. Findings

Introduction

A finding of very low safety significance and NCV of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was self-revealed for failing to include acceptance criteria appropriate to the circumstances for a preventive maintenance (PM) procedure for the 'A' SBGT subsystem. Specifically, the licensee did not include a specific caution within Procedure 4171-01-PM to avoid over-tightening of bolts for installation of a blocking device on the 'A' SBGT subsystem suction valve prior to performing planned maintenance. This resulted in the valve failing to open during return-to-service testing on September 29, 2009, and entry into limiting condition for operation (LCO) 3.0.3 in order to retest the system.

Description

Following planned maintenance on the 'A' SBT subsystem, and in day 2 of a 7 day shutdown TS action, a quarterly TS surveillance test was initiated on September 29, 2009. During the initial portions of the test, the 'A' SBT subsystem was to be manually started via a manual secondary containment isolation and auto-initiation signal. Following activation of the test pushbuttons to start the 'A' SBT subsystem the fan started, but the suction valve (AO-2945) failed to open as expected. Due to low-flow sensing instrumentation installed in the 'A' SBT subsystem, the 'B' SBT subsystem automatically started per design. The 'B' SBT subsystem was left running in its safety lineup while troubleshooting commenced for AO-2945. As part of the troubleshooting effort, the licensee attempted to manually open AO-2945, since it would not open remotely from the control room. After applying more than normal force to the valve stem the valve opened, indicating that the valve had likely been over-driven into its seat. The licensee identified that during the PM activities, a blocking device was installed on AO-2945 per Procedure 4171-01-PM to maintain the valve closed. Based on internal operating experience, a similar issue occurred on the 'B' SBT subsystem in August 2007. Over-tightening of the blocking device was identified as the likely cause and procedure changes were made to the 'B' SBT subsystem PM procedure. Following the troubleshooting effort, the licensee manually and remotely exercised AO-2945 and determined that the valve could perform its function. It was concluded that the cause of AO-2945 being stuck closed was over-tightening of the blocking device bolts due to lack of guidance in the 4171-01-PM procedure.

Prior to re-performing the 'A' SBT subsystem TS surveillance test, the licensee realized that the 'B' SBT subsystem would have to be shutdown in order to start and run the 'A' SBT subsystem. The existing plant operating procedure that is used to shut down the 'B' SBT subsystem renders the subsystem inoperable for a short period of time during the shutdown process. In order to shutdown the 'B' SBT subsystem with the 'A' SBT subsystem inoperable, LCO 3.0.3 would have to be entered immediately per TS 3.6.4.3, Condition D, due to two SBT subsystems inoperable in Mode 1. In order to comply with existing procedures, the licensee elected to enter LCO 3.0.3 (requiring, in part, action within one hour to place the unit in Mode 2 within seven hours), and shutdown the 'B' SBT subsystem. Once shutdown and realigned to standby, the 'B' SBT subsystem was considered operable. Following this evolution, the licensee successfully completed the 'A' SBT subsystem surveillance test and exited the 7 day TS action.

Analysis

The licensee determined that corrective actions from the August 2007 event resulted in the addition of caution notes to preclude over-tightening of the blocking device for 'B' SBT subsystem maintenance procedures. However, because the issue was identified before surveillance testing, the issue significance did not lead to extent-of-condition/cause evaluations, which would have identified the lack of caution notes in the 'A' SBT subsystem 4171-01-PM procedure. The inspectors determined that the August 2007 event provided the licensee with a reasonable opportunity to identify the common procedure inadequacies and revise the 4171-01-PM procedure.

The inspectors determined that per Section 1-1 of IMC 0612, Appendix B, "Issue Screening," the failure to include acceptance criteria appropriate to the circumstances

within Procedure 4171-01-PM was a performance deficiency because it was the result of the failure to meet a requirement, and the cause was reasonably within the licensee's ability to foresee and correct and should have been prevented. Because the performance deficiency resulted in the licensee having to render both subsystems of SBTG inoperable, the inspectors screened the performance deficiency to determine whether it was more than minor per Section 1-3 of IMC 0612, Appendix B. The inspectors determined that the performance deficiency involved the procedure quality attribute of the Barrier Integrity Cornerstone objective to provide reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. Therefore, the performance deficiency was more than minor and a finding.

The inspectors determined that the contributing cause that provided the most insight into the performance deficiency was associated with the cross-cutting area of Problem Identification and Resolution, having CAP components, and involving aspects associated with identifying issues completely and accurately commensurate with their safety significance. [P.1(a)]

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

Enforcement

Title 10 CFR 50, Appendix B, Criterion V requires, in part, that activities affecting quality shall be prescribed by documented procedures, of a type appropriate to the circumstances, and shall include appropriate quantitative or qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished. Contrary to this requirement, the licensee failed to include acceptance criteria appropriate to the circumstances for a PM procedure for the 'A' SBTG subsystem. This resulted in the 'A' SBTG subsystem suction valve failing to open during return-to-service testing and entry into TS 3.0.3 in order to retest the system. Because this violation was of very low safety significance and was entered into the licensee's CAP (AR 01200304), this violation is being treated as an NCV, consistent with Section VI.A.1 of the NRC Enforcement Policy. (NCV 05000263/2009005-01)

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

.1 Maintenance Risk Assessments and Emergent Work Control

a. Inspection Scope

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

- troubleshooting following 'A' SBGT inlet air-operated valve failing to open during post-maintenance (PM) testing;
- issue evaluation following identification of low halon bottle pressure for cable spreading room fire suppression system;
- issue evaluation following identification of inadequate moment arm length for torus vent valve AO-2896;
- troubleshooting following Division 1 residual heat removal (RHR) outboard torus cooling isolation valve reverse rotation during PM testing; and
- troubleshooting following damage to grouted penetrations following HPCI steam line movement.

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

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

b. Findings

Introduction

A Severity Level IV NCV of 10 CFR 50.72(b)(3)(v)(C) was identified by the inspectors for the failure of the licensee to make an eight hour notification to the NRC for a condition that; at the time of discovery, could have prevented the fulfillment of the SBGT system safety function.

Description

On September 29, 2009, a quarterly TS surveillance test was initiated for the 'A' SBGT subsystem. Due to a failure of the 'A' SBGT subsystem suction valve to open (see finding discussion in Section 1R12 above), the 'B' SBGT subsystem system automatically started per design. The licensee shutdown the 'A' SBGT subsystem and re-aligned it to a standby condition. With the 'A' SBGT subsystem inoperable, but available, and 'B' SBGT subsystem running, the station remained in the applicable TS action (3.4.6.3.A) for one SBGT subsystem inoperable. In order to conduct required operability testing of the 'A' SBGT subsystem following troubleshooting of the suction valve, the licensee determined that the 'B' SBGT subsystem would have to be shutdown since the SBGT system had not been analyzed for both subsystems to be operating at the same time. The licensee also determined that in order to shutdown the 'B' SBGT subsystem using existing operating procedures, the 'B' SBGT subsystem would be rendered inoperable for a brief period when the 'B' SBGT subsystem filter heaters were de-energized and the control switch placed in manual. Operability of the

'B' SBGT subsystem would not be re-established until hand switch HS-2988B was placed in automatic. This course of action would require two subsystems of SBGT to be declared inoperable, and entry into LCO 3.0.3 per TS 3.6.4.3.D. The licensee evaluated the ramifications of entering LCO 3.0.3 and elected to shutdown the 'B' SBGT subsystem using existing procedures. Following successful shutdown of the 'B' SBGT subsystem, placing the subsystem in automatic, and declaring the 'B' SBGT subsystem operable, LCO 3.0.3 was entered and exited within approximately 20 minutes. Approximately 24 hours following this evolution, the licensee successfully completed the 'A' SBGT subsystem surveillance test and exited the 7 day shutdown TS action 3.6.4.3.A.

Following the restoration of the SBGT system, the inspectors questioned the status of the SBGT system during shutdown of the 'B' SBGT subsystem, particularly whether the automatic-initiation capability for both subsystems was a safety function of the SBGT system. The inspectors further questioned why the entry into LCO 3.0.3, due to both SBGT subsystems being inoperable, was not reported per 10 CFR 50.72(b)(3)(v)(C). The licensee prepared a position paper that documented their justification for not reporting the condition. The licensee's position was that because an operator was briefed and stationed near the SBGT system panel in the control room and could have manually restored the 'B' SBGT subsystem had plant conditions warranted, the SBGT system could have fulfilled its safety function, if needed. The position paper also stated that the shutdown of the 'B' SBGT subsystem with the 'A' SBGT subsystem inoperable was planned, and in accordance with an approved procedure and TS.

The inspectors consulted NRC regional and headquarters staff to determine whether the inability for the SBGT system to automatically initiate was a condition that could have prevented the fulfillment of the SBGT safety system function, and whether operator actions could substitute for an automatic-initiation function of a system to maintain its safety function. The inspectors noted that NUREG-1022, "Event Reporting Guidelines 10 CFR 50.72 and 50.73, Revision 2" states, in part, that "removal of a system from service as part of a planned evolution for maintenance or surveillance testing when done in accordance with an approved procedure and the plant's TS, is generally not reportable." The inspectors determined that the condition that could have prevented the fulfillment of the SBGT system safety function was not planned (prior to conducting maintenance and testing of the 'A' SBGT subsystem), and the existing operating procedure for shutdown of the 'B' SBGT subsystem was inadequate, in that, performance of the procedure directly resulted in the condition that could have prevented the fulfillment of the SBGT system safety function. In addition, substitution of an automatic-initiation safety function with operator action (in this case, in an emergent fashion and without approved procedures to do so), is not addressed as appropriate per NUREG-1022 and other regulatory guidance. The inspectors also noted that 10 CFR 50.72(b)(3)(vi) states, in part, that "individual component failures need not be reported pursuant to paragraph (b)(3)(v) of this section if redundant equipment in the same system was operable and available to perform the required safety function." In this case, the 'B' SBGT system was unavailable to automatically initiate for a period of time during the shutdown sequence while the redundant subsystem ('A' SBGT subsystem) was inoperable. Since testing to demonstrate operability of the 'A' SBGT subsystem was not conducted until 24 hours following the unavailability of the redundant equipment ('B' SBGT subsystem), the condition, at the time of discovery, could have prevented the fulfillment of the SBGT system safety function. Therefore,

based on guidance in NUREG-1022 and consultation with regional and headquarters staff, the NRC position was that the condition was subject to the reporting requirements of 10 CFR 50.72(b)(3)(v)(C).

Analysis

The inspectors determined that per IMC 0612, Appendix B, "Issue Screening," the failure to report the condition that could have prevented the fulfillment of the SBT system safety function in accordance with 10 CFR 50.72(b)(3)(v)(C) 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 the failure to report the condition affected the NRC's ability to perform its regulatory function. Because violations of 10 CFR 50.72 are considered to be violations that potentially impede or impact the regulatory process, they are dispositioned using the traditional enforcement process instead of the SDP. Per NRC Enforcement Policy, Supplement I, Example D.4, a failure to make a required Licensee Event Report (LER) is categorized as a Severity Level IV violation. The inspectors considered the failure to make a required 50.72 report to meet the intent of this example. The inspectors determined that the contributing cause that provided the most insight into the performance deficiency affected the cross-cutting area of Problem Identification and Resolution, having CAP components, and involving aspects associated with properly classifying and evaluating for reportability conditions adverse to quality. [P.1(c)]

Enforcement

Title 10 CFR 50.72(b)(3)(v)(C) requires, in part, that operating reactor licensees shall notify the NRC within eight hours of the occurrence of any event or condition that at the time of discovery could have prevented the fulfillment of the safety function of structures or systems that are needed to control the release of radiological material. Contrary to this requirement, on September 29, 2009, the licensee failed to report the condition that could have prevented the fulfillment of the SBT system safety function to the NRC. Because this violation was not repetitive or willful, and it was entered into the licensee's corrective action program as CAP 01210817, this violation is being treated as a Severity Level IV NCV, consistent with Section VI.A.1 of the NRC Enforcement Policy. (NCV 05000263/2009005-02)

1R15 Operability Evaluations (71111.15)

.1 Operability Evaluations

a. Inspection Scope

The inspectors reviewed the following issues:

- OPR 1204430 (calculations were found to have incorrect input with regard to concrete strength);
- OPR 1204777 (turbine bypass valve capacity is less than what is stated in licensing documents for current operating cycle);

- A/R 1200170 (pickup voltage on 480v MCC contactors not periodically tested); and
- OPR 1194493 (timeliness of operator actions associated with a postulated feedwater crack in the steam chase).

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.

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

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 PM activities to verify that procedures and test activities were adequate to ensure system operability and functional capability:

- testing of 'B' offgas stack dilution fan following lubrication and inspection;
- testing of 11 residual heat removal service water (RHRSW) pump motor following cooler cleaning;
- testing of 'A' control room emergency filtration (CREF) system following relay replacement;
- testing of HPCI following various valve maintenance activities; and
- testing of 11 core spray system following supply breaker maintenance.

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 Surveillance Testing (71111.22)

.1 Surveillance Testing

a. Inspection Scope

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

- 0006; scram discharge volume hi level scram test and calibration procedure; Revision 27 (routine);
- 0533; containment sump flow measurement instrumentation; Revision 15 (reactor coolant system (RCS) leakage);
- 0255-11-III-4; 14 emergency service water (ESW) quarterly pump and valve tests; Revision 53 (inservice test (IST));
- 1069; HPCI flow control system dynamic test procedure; Revision 20 (routine); and
- 0465-01; EFT system; Revision 34 (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 three routine surveillance testing samples; one IST sample; and one RCS leak detection inspection sample, as defined in IP 71111.22, Sections -02 and -05.

b. Findings

No findings of significance were identified.

1EP4 Emergency Action Level and Emergency Plan Changes (71114.04)

.1 Emergency Action Level and Emergency Plan Changes

a. Inspection Scope

Since the last NRC inspection of this program area, Emergency Plan Revision 32 and Procedure A.2-101 "Classification of Emergencies" Revision 41 were implemented. These documents were implemented based on your determination, in accordance with 10 CFR 50.54(q), that the changes resulted in no decrease in effectiveness of the Plan, and that the revised Plan as changed continues to meet the requirements of 10 CFR 50.47(b) and Appendix E to 10 CFR Part 50. The inspectors conducted a sampling review of the Emergency Plan changes and a review of the Emergency Action Level changes to evaluate for potential decreases in effectiveness of the Plan. However, this review does not constitute formal NRC approval of the changes. Therefore, these changes remain subject to future NRC inspection in their entirety. Documents reviewed are listed in the Attachment to this report.

This emergency action level and emergency plan changes inspection constituted one sample as defined in IP 71114.04-05.

b. Findings

No findings of significance were identified.

1EP6 Drill Evaluation (71114.06)

.1 Training Observation

a. Inspection Scope

The inspector observed a simulator training evolution for licensed operators on November 16, 2009, which required emergency plan implementation by a licensee operations crew. This evolution was planned to be evaluated and included in performance indicator (PI) data regarding drill and exercise performance. The inspectors observed event classification and notification activities performed by the crew. The inspectors also attended the post-evolution critique for the scenario. The focus of the inspectors' activities was to note any weaknesses and deficiencies in the crew's performance and ensure that the licensee evaluators noted the same issues and entered them into the CAP. As part of the inspection, the inspectors reviewed the scenario package and other documents listed in the Attachment to this report.

This inspection of the licensee's training evolution with emergency preparedness drill aspects constituted one sample as defined in IP 71114.06-05.

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety

2OS1 Access Control to Radiologically Significant Areas (71121.01)

.1 Plant Walkdowns and Radiation Work Permit Reviews

a. Inspection Scope

The inspectors reviewed the licensee's physical and programmatic controls for highly activated and/or contaminated materials (non-fuel) stored within the spent fuel pool or other storage pools. The inspectors walked down the spent fuel pool with reactor engineers and radiation protection (RP) staff to inspect the highly activated and/or contaminated materials.

This inspection constituted one sample as defined in IP 71121.01-5.

b. Findings

No findings of significance were identified.

2OS2 As-Low-As-Is-Reasonably-Achievable Planning and Controls (71121.02)

.1 Radiological Work Planning

a. Inspection Scope

The inspectors compared the results achieved (including dose rate reductions and person-rem used) with the intended dose established in the licensee's as-low-as-is-reasonably-achievable (ALARA) planning for the five work activities listed below. Reasons for inconsistencies between intended and actual work activity doses were reviewed:

- inservice inspection of nozzles in the drywell;
- safety relief valves change out and surveillance;
- replaced insulation blankets in the drywell;
- installed lead shields in the drywell; and
- HPCI run and investigation of the HPCI supply line for vibration.

This inspection constituted one required sample as defined in IP 71121.02-5.

b. Findings

No findings of significance were identified.

.2 Job Site Inspections and As-Low-As-Is-Reasonably-Achievable Control

a. Inspection Scope

The inspectors observed the following jobs that were being performed in radiation areas, airborne radioactivity areas, or high radiation areas to evaluate work activities that presented the greatest radiological risk to workers:

- in-service inspection of nozzles in the drywell;
- safety relief valves change out and surveillance;
- replaced insulation blankets in the drywell;
- installed lead shields in the drywell; and
- HPCI run and investigation of the HPCI supply line for vibration.

The inspectors reviewed the licensee's use of ALARA controls for the work activities. The licensee's use of engineering controls to achieve dose reductions was evaluated to verify that procedures and controls were consistent with the licensee's ALARA reviews, that sufficient shielding of radiation sources was provided, and that the dose expended to install/remove the shielding did not exceed the dose reduction benefits afforded by the shielding.

This inspection constituted one required sample as defined in IP 71121.02-5.

b. Findings

No findings of significance were identified.

.3 Problem Identification and Resolutions

a. Inspection Scope

The inspectors reviewed the licensee's self-assessments, audits, and Special Reports related to the ALARA program since the last inspection to determine if the licensee's overall audit program's scope and frequency for all applicable areas under the Occupational Cornerstone met the requirements of 10 CFR 20.1101(c).

This inspection constituted one required sample as defined in IP 71121.02-5.

b. Findings

No findings of significance were identified.

2OS3 Radiation Monitoring Instrumentation and Protective Equipment (71121.03)

.1 Inspection Planning and Identification of Instrumentation

a. Inspection Scope

The inspectors reviewed the licensee's USAR to identify applicable radiation monitors associated with measuring transient high and very high radiation areas, including those intended for remote emergency assessment. The inspectors identified the types of portable radiation detection instrumentation that were used for job coverage of high radiation area work, including instruments for underwater surveys, portable and fixed area radiation monitors that were used to provide radiological information in various plant areas, and continuous air monitors (CAMs) that were used to assess airborne radiological conditions and work areas with the potential for workers to receive a 50 millirem or greater committed effective dose equivalent (CEDE). Whole body counters that were used to monitor for internal exposure and those radiation detection instruments that were used to conduct surveys for the release of personnel and equipment from the radiologically controlled area (RCA), including contamination monitors and portal monitors, were also identified.

This inspection constituted two samples as defined in IP 71121.03-5.

b. Findings

No findings of significance were identified.

.2 Calibration and Testing of Radiation Monitoring Instrumentation

a. Inspection Scope

The inspectors reviewed radiological instrumentation to determine if it had been calibrated as required by the licensee's procedures, consistent with industry and regulatory standards. The inspectors also reviewed alarm set-points for selected instruments to determine whether they were established consistent with the USAR or TSs; as applicable, and with industry practices and regulatory guidance. Specifically,

the inspectors reviewed calibration procedures and the most recent calibration records for the following radiation monitoring instrumentation and calibration equipment:

- NMC CAM;
- Eberline AMS-4;
- area radiation monitors (ARMs), transverse in-core probe ARMs;
- PM-7 portal monitors;
- Canberra ARGOS contamination monitors; and
- MGP telepoles.

The inspectors determined what actions were taken when, during calibration or source checks, an instrument was found significantly out of calibration or exceeded as-found acceptance criteria. Should that occur, the inspectors determined whether the licensee's actions would include a determination of the instruments' previous uses and the possible consequences of that use since the prior successful calibration. The inspectors also reviewed the results of the licensee's most recent 10 CFR Part 61 source term (radionuclide mix) evaluations to determine if the radiation sources that were used for instrument calibration and for instrument checks were representative of the plant source term.

The inspectors observed the licensee's use of the portable survey instrument calibration units, discussed calibrator output validation methods, and compared calibrator exposed readings with calculated/expected values. The inspectors evaluated compliance with licensee procedures while RP personnel demonstrated the methods for performing source checks of portable survey instruments and source checks of personnel contamination and portal monitors.

This inspection constituted one sample as defined in IP 71121.03-5.

b. Findings

No findings of significance were identified.

.3 Problem Identification and Resolution

a. Inspection Scope

The inspectors reviewed licensee CAP documents and any LERs or special reports that involved personnel contamination monitor alarms due to personnel internal exposures to determine whether identified problems were entered into the CAP for resolution.

While no internal exposure with a CEDE greater than 50 millirem occurred since the last inspection in this area, the inspectors reviewed the licensee's methods for internal dose assessment to determine if affected personnel would be properly monitored using calibrated equipment and if the data would be analyzed and exposures properly assessed.

This inspection constituted one sample as defined in IP 71121.03-5.

The inspectors reviewed CAP reports related to exposure significant radiological incidents that involved radiation monitoring instrument deficiencies since the last

inspection in this area, as applicable. Members of the RP staff were interviewed and corrective action documents were reviewed to determine whether follow-up activities were being conducted in an effective and timely manner commensurate with their importance to safety and risk based on the following:

- initial problem identification, characterization, and tracking;
- disposition of operability/reportability issues;
- evaluation of safety significance/risk and priority for resolution;
- identification of repetitive problems;
- identification of contributing causes;
- resolution of NCVs tracked in the corrective action system; and
- identification and implementation of effective corrective actions.

This inspection constituted one sample as defined in IP 71121.03-5.

The inspectors determined if the licensee's self-assessment and audit activities completed for the approximate two year period that preceded the inspection were identifying and addressing repetitive deficiencies or significant individual deficiencies in problem identification and resolution, as applicable.

This inspection constituted one sample as defined in IP 71121.03-5.

b. Findings

No findings of significance were identified.

.4 Radiation Protection Technician Instrument Use

a. Inspection Scope

The inspectors verified that calibrations for those survey instruments used to perform job coverage surveys and for those currently designated for use had not lapsed. The inspectors determined if response checks of portable survey instruments and checks of instruments used for unconditional release of materials and workers from the RCA were completed prior to instrument use, as required by the licensee's procedure. The inspectors also discussed instrument calibration methods and source response check practices with RP staff and observed staff demonstrate instrument source checks.

This inspection constituted one sample as defined in IP 71121.03-5.

b. Findings

No findings of significance were identified.

.5 Self-Contained Breathing Apparatus Maintenance/Inspection and Emergency Response Staff Qualifications

a. Inspection Scope

The inspectors reviewed the status and surveillance records of self-contained breathing apparatus (SCBAs) that were staged in the plant and ready-for-use and evaluated the

licensee's capabilities for refilling and transporting SCBA air bottles to-and-from the control room and operations support center during emergency conditions. The inspectors determined if control room staff and other emergency response and RP personnel were trained; respirator fit tested; and medically certified to use SCBAs, including personal bottle change-out. Additionally, the inspectors reviewed SCBA qualification records for numerous members of the licensee's radiological emergency teams to determine if a sufficient number of staff were qualified to fulfill emergency response positions, consistent with the licensee's emergency plan and the requirements of 10 CFR 50.47.

This inspection constituted one sample as defined in IP 71121.03-5.

The inspectors reviewed the qualification documentation for at least 50 percent of the onsite; or as applicable, offsite contract personnel that performed maintenance on manufacturer designated vital SCBA components. The inspectors also reviewed vital component maintenance records for several SCBA units that were designated as ready-for-use. The inspectors also evaluated, through record review and observations, if the required air cylinder hydrostatic testing was documented and current and if the Department of Transportation required retest air cylinder markings were in place for several randomly selected SCBA units and spare air bottles. The inspectors reviewed the onsite maintenance procedures governing vital component work, as applicable, including those for the low-pressure alarm and pressure-demand air regulator. The inspectors reviewed the licensee's maintenance procedures and the SCBA manufacturer's recommended practices to determine if there were any inconsistencies between them.

This inspection constituted one sample as defined in IP 71121.03-5.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification (71151)

.1 Mitigating Systems Performance Index - Residual Heat Removal System

a. Inspection Scope

The inspectors sampled licensee submittals for the Mitigating Systems Performance Index (MSPI) - RHR System PI for the period from the Third Quarter 2008 through the Second 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, 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 - RHR system sample as defined in IP 71151-05.

b. Findings

No findings of significance were identified.

.2 Mitigating Systems Performance Index - Cooling Water Systems

a. Inspection Scope

The inspectors sampled licensee submittals for the MSPI - Cooling Water Systems PI for the period from the Third Quarter 2008 through the Second 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 - cooling water system sample as defined in IP 71151-05.

b. Findings

During the conduct of this inspection, the inspectors noted that the licensee's MSPI Basis Document description of the RHRSW system did not match actual plant configuration. An engineering modification installed during the spring 2009 refueling outage changed the method of how cooling water was delivered to the RHRSW motor coolers. The inspectors noted that the modification impacted RHRSW monitored components and PRA event sequences assessed in the MSPI Basis document which were used to evaluate unavailability and unreliability data.

The licensee entered this issue into their corrective action process and are evaluating applicable guidance documents to determine what is required for basis document changes, specifically in regards to timeliness of basis document changes, subsequent to actual changes in the configuration of MSPI monitored components. Pending final resolution of this issue with the licensee, and subsequent review by the NRC, this issue will be treated as an Unresolved Item (URI 5000263/2009005-03).

.3 Reactor Coolant System Specific Activity

a. Inspection Scope

The inspectors sampled licensee submittals for the RCS Specific Activity PI for the period from the First Quarter of 2008 through the Third Quarter of 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 RCS chemistry samples, TS requirements, issue reports, event reports, and NRC Integrated Inspection Reports for the period between the First Quarter of 2008 through the Third Quarter of 2009. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the PI data collected or transmitted for this indicator and none were identified. In addition to record reviews, the inspectors observed a chemistry technician obtain and analyze a RCS sample. Documents reviewed are listed in the Attachment to this report.

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

b. Findings

No findings of significance were identified.

.4 Occupational Exposure Control Effectiveness

a. Inspection Scope

The inspectors sampled licensee submittals for the Occupational Radiological Occurrences PI for the period from the First Quarter 2008 through the Third Quarter of 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 assessment of the PI for occupational radiation safety to determine if indicator related data was adequately assessed and reported. To assess the adequacy of the licensee's PI data collection and analyses, the inspectors discussed with RP staff, the scope and breadth of its data review, and the results of those reviews. The inspectors independently reviewed electronic dosimetry dose rate and accumulated dose alarm and dose reports and the dose assignments for any intakes that occurred during the time period reviewed to determine if there were potentially unrecognized occurrences. The inspectors also conducted walkdowns of numerous locked high and very high radiation area entrances to determine the adequacy of the controls in place for these areas. Documents reviewed are listed in the Attachment to this report.

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

b. Findings

No findings of significance were identified.

.5 Radiological Effluent Technical Specifications/Offsite Dose Calculation Manual
Radiological Effluent Occurrences

a. Inspection Scope

The inspectors sampled licensee submittals for the Radiological Effluent TS (RETS)/Offsite Dose Calculation Manual (ODCM) Radiological Effluent Occurrences PI for the period of January 2008 through September 2009. The inspectors used PI definitions and guidance contained in the NEI Document 99 02, "Regulatory Assessment Performance Indicator Guideline," Revision 5, to determine the accuracy of the PI data reported during those periods. The inspectors reviewed the licensee's issue report database and selected individual reports generated since this indicator was last reviewed to identify any potential occurrences such as unmonitored, uncontrolled, or improperly calculated effluent releases that may have impacted offsite dose. The inspectors reviewed gaseous effluent summary data and the results of associated offsite dose calculations for selected dates from January 2008 through September 2009, to determine if indicator results were accurately reported. The inspectors also reviewed the licensee's methods for quantifying gaseous and liquid effluents and determining effluent dose. Documents reviewed are listed in the Attachment to this report.

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

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems (71152)

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

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

a. Inspection Scope

As part of the various baseline inspection procedures discussed in previous sections of this report, the inspectors routinely reviewed issues during baseline inspection activities and plant status reviews to verify that they were being entered into the licensee's CAP at an appropriate threshold, that adequate attention was being given to timely corrective actions, and that adverse trends were identified and addressed. Attributes reviewed included: the complete and accurate identification of the problem; that timeliness was commensurate with the safety significance; that evaluation and disposition of performance issues, generic implications, common causes, contributing factors, root causes, extent-of-condition reviews, and previous occurrences reviews were proper and adequate; and that the classification, prioritization, focus, and timeliness of corrective actions were commensurate with safety and sufficient to prevent recurrence of the issue. Minor issues entered into the licensee's CAP as a result of the inspectors' observations are included in the 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. Inspection Scope

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

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

b. Findings

No findings of significance were identified.

.3 Semi-Annual Trend Review

a. Inspection Scope

The inspectors performed a review of the licensee's CAP and associated documents to identify trends that could indicate the existence of a more significant safety issue. The inspectors' review was focused on repetitive equipment issues, but also considered the results of daily inspector CAP item screening discussed in Section 4OA2.2 above, licensee trending efforts, and licensee human performance results. The inspectors' review nominally considered the six month period of June 2009 through November 2009, although some examples expanded beyond those dates where the scope of the trend warranted.

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

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

b. Findings

No findings of significance were identified.

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

.1 Planned Power Reduction to Perform Corrective Maintenance Activities in Condenser Room on October 2, 2009

a. Inspection Scope

The inspectors reviewed operator performance during a planned non-routine power reduction to repair or replace several feedwater heater and moisture separator reheater level transmitters. The inspectors observed power reduction and ascension activities in the control room and reviewed work activities planned. The inspectors verified that emergent issues that arose during the evolution were addressed appropriately. Documents reviewed in this inspection are listed in the Attachment to this report.

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

b. Findings

No findings of significance were identified.

.2 (Closed) Licensee Event Report (LER) 05000263/2009-005-00: Failed Fusible Link on Door 18

a. Inspection Scope

On August 20, 2009, the licensee identified that Door 18 (credited in design bases as a high energy line break (HELB) and fire mitigation door) was closed. Door 18 is held open by a fusible link to ensure that HELB-induced flood water outside of the condenser room can drain into the condenser room to minimize overall flood level in the turbine building basement. Closure of Door 18 with the plant in Mode 1 is considered an unanalyzed condition, which potentially renders the 4.16 kV system inoperable, due to the postulated HELB event. The licensee made eight-hour event notifications to the NRC for the unanalyzed condition, and for a condition that could have prevented the fulfillment of the 4.16 kV system safety function.

During review of LER 2009-005-00, the inspectors identified that the LER only addressed the unanalyzed condition, and did not address the condition that could have prevented the fulfillment of the 4.16 kV system safety function. The LER stated that although the condition initially reported as a condition that could have prevented the 4.16 kV system safety function, the single failure of the 12 EDG did not need to be considered in addition to the HELB of concern. The inspectors conducted several meetings with engineering, operations, and plant management staff to further understand the licensee's evaluation of the condition and the impact on the 4.16 kV system. Following questions raised by the inspectors regarding the ability of offsite power to feed the 4.16 kV system post-HELB, the licensee provided additional information that they considered adequate to demonstrate a reasonable expectation for offsite power remaining available post-HELB. Although the licensee's evaluation of the

issue, and overall position, was not well documented before providing the LER, the inspectors determined that the licensee met the “reasonable expectation of fulfilling the safety function” for the 4.16 kV system, as described in NUREG-1022, “Event Reporting Guidelines 10 CFR 50.72 and 50.73,” Revision 2.

The licensee determined that the cause of the Door 18 closure was ineffective corrective actions following a July 2007 fusible link failure. The inspectors determined that the licensee’s failure to prevent recurrence of a significant condition adverse to quality was a performance deficiency. The performance deficiency was more than minor and a finding because it involved the protection against external events attribute of the Reactor Safety Mitigating Systems Cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage).

The inspectors applied IMC 0609, Attachment 4, “Phase 1 – Initial Screening and Characterization of Findings” to this finding. The inspectors answered “Yes” to Question 1 and “True” to Question 2a under the Table 4b worksheet. Under the Table 4a worksheet, Column 2, the inspectors answered “Yes” to Question 5 requiring a Phase 3 analysis. The inspectors consulted with a Region III senior risk analyst (SRA).

The SRA used the estimate for a feedwater HELB frequency from NUREG/CR-5750, “Rates of Initiating Events at U.S. Nuclear Power Plants: 1987 - 1995.” The SRA assumed a bounding frequency of $3.4\text{E-}3/\text{yr}$. For the approximate one day of exposure, the frequency was $9.3\text{E-}6$. The core damage risk would be significantly less than this frequency, since the probability of subsequent events (e.g., loss of offsite power) and equipment and human recovery failures necessary to lead to core damage would be small. The SRA concluded that the delta core damage frequency (CDF) for this performance deficiency is much less than $1\text{E-}6$, representing a finding of very low risk significance (Green).

This licensee-identified finding involved a violation of 10 CFR 50, Appendix B, Criterion XVI, “Corrective Action.” The enforcement aspects of this violation are discussed in Section 4OA7 of this report. This LER is closed.

This review constituted one LER review sample as defined in IP 71153-05.

4OA5 Other Activities

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

During the inspection period, a Component Design Bases Inspection (CDBI) (NRC Inspection Report 05000263/2009007) 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. Reference to this inspection sample is for tracking purposes only and does not represent an inspection sample in this report.

.2 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.

4OA6 Management Meetings

.1 Exit Meeting Summary

On January 7, 2010, the inspectors presented the inspection results to Mr. O'Connor and other members of the licensee staff. The licensee acknowledged the issues presented. The inspectors confirmed that none of the potential report input discussed was considered proprietary.

.2 Interim Exit Meetings

Interim exits were conducted for:

- Radiation monitoring instrumentation and protective equipment and performance indicator verifications with Mr. K. Jepson, Acting Site Vice President, on October 23, 2009;
- Licensed operator requalification training program inspection results with Mr. J. Grubb, Plant Manager, and Mr. J. Sorensen, Fleet Training General Manager, on October 30, 2009;
- Licensed operator requalification training biennial written examination and annual operating test results with the Supervisor, Operator Continuing Training, Mr. P. Norgaard, via telephone on November 23, 2009;
- Access control to radiologically significant areas and as-low-as-is-reasonably-achievable planning and control with Mr. Timothy O'Connor, Site Vice President, on December 17, 2009; and
- The annual review of Emergency Action Level and Emergency Plan changes with the licensee's Senior Emergency Preparedness Coordinator, Gerry Holthaus, via telephone on December 23, 2009.

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

4OA7 Licensee-Identified Violations

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 NCVs.

- Title 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," requires, in part, that measures shall be established to assure that for significant conditions adverse to quality, the cause of the condition is determined and corrective action(s) taken to preclude repetition. Contrary to this requirement, the licensee did not take adequate corrective actions to prevent recurrence for a significant condition adverse to quality regarding the failure of a fire door fusible link on July 26, 2007. The licensee entered the issue into their corrective action program as CAP 01194446. Based upon consultation with a Region III SRA who determined that the delta CDF for this finding was much less than 1E-6, it was considered to be of very low safety significance (Green).
- Technical Specification 5.4.1 states, in part, that written procedures shall be implemented covering the Fire Protection Program. Licensee Procedure 4-AWI-08.01.00, "Fire Protection Program Plan," implements the TS 5.4.1 requirement. Operations Manual B.08.05-05, "Fire Protection – System Operation," is considered an implementing document that supports the Fire Protection Program. Specification F.1 of Table A.2-1, "Operating Requirements – Fire Detection and Protection Systems," contained within B.08.05-05 states, in part, that the cable spreading room (CSR) halon system shall be operable with the storage tanks having at least 90 percent of full charge pressure. Specification F.2 of Table A.2-1 states, in part, that if Specification F.1 cannot be met, a continuous fire watch with backup fire suppression equipment in the CSR is to be established within one hour. Contrary to this requirement, on August 31, 2009, the licensee did not station a continuous fire watch with backup fire suppression equipment in the CSR within one hour when the as-found pressure of one of four CSR halon system storage tanks resulted in the total available CSR halon system tank pressure being less than 90 percent full charge pressure. After recognizing the halon system storage tank pressure issue on September 1, 2009, the licensee immediately aligned the reserve halon bank and entered the issue into their corrective action program as CAP 01183755.

The inspectors applied IMC 0609, Attachment 4, "Phase 1 – Initial Screening and Characterization of Findings" to this finding. Using the Table 3b worksheet, the inspectors transitioned to IMC 0609, Appendix F, "Fire Protection SDP Phase 1 Qualitative Screening Approach," Step 1.1. The inspectors selected the "Fixed Fire Protection System" finding category. Per Step 1.2, the inspectors used IMC 0609, Appendix F, Attachment 2, "Degradation Rating Guidance Specific to Various Fire Protection Program Elements," to determine the degradation rating. Under the "Gaseous Based Suppression" section, the inspectors determined that the finding was associated with a LOW degradation rating because the as-found halon discharge time would not have exceeded the allowable discharge time by more than 25 percent. This conclusion was based on the inspector's review of conservative licensee evaluations for worst case halon system storage tank pressure and resultant discharge time.

Per Step 1.3 of IMC 0609, Appendix F Phase 1 Qualitative Screening Approach, "Initial Qualitative Screening," because the finding was assigned a LOW degradation rating, it was considered to be of very low safety significance (Green) with no further analysis required.

- Title 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," requires, in part, that activities affecting quality shall be prescribed by documented procedures of a type appropriate to the circumstances. Contrary to this requirement, Procedure 1429, "CRV-EFT Low Flow Test," was not appropriate to the circumstances, in that, the procedure as written, approved, and performed, rendered both subsystems of CREF inoperable on October 10, 2009. The licensee entered the issue into their corrective action program as CAP 01201990. Because the finding only represented a degradation of the radiological barrier function provided for the control room, it was considered to be of very low safety significance (Green).
- Title 10 CFR 50, Appendix B, Criterion III, "Design Control," requires, in part, that measures shall be established to assure that the design basis is correctly translated into procedures. Contrary to this requirement, the licensee did not assure that a critical dimensional parameter (moment arm length) for AO-2896 (outboard torus nitrogen vent valve) was correctly prescribed in Procedure 4321-PM, "Primary Containment T-Seated Butterfly Valves." Because Procedure 4321-PM did not incorporate moment arm length information documented in calculation CA-03-022, "Air Operated Valve Component Calculation, Primary Containment, Vent & Purge Valves," Revision 2, the valve was found to have a non-conservative moment arm length on October 28, 2009. After the issue was identified during calculation review, the licensee entered the issue into their corrective action program as CAP 01204645. The licensee declared AO-2896 inoperable until the valve moment arm length could be adjusted.

The inspectors applied IMC 0609, Attachment 4, "Phase 1 – Initial Screening and Characterization of Findings" to this finding. Using the Table 4a worksheet, the inspectors answered "No" to Questions 1, 2, and 4. Because the inspectors determined that the finding did not represent an actual open pathway in the physical integrity of reactor containment (Question 3), the finding was determined to be of very low safety significance (Green).

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

T. O'Connor, Site Vice President
J. Grubb, Plant Manager
N. Haskell, Site Engineering Director
K. Jepson, Business Support Manager
W. Paulhardt, Assistant Plant Manager
S. Sharp, Operations Manager
S. Radebaugh, Maintenance Manager
M. Holmes, Radiation Protection/Chemistry Manager
S. Speight, Regulatory Affairs Manager
J. Sorensen, Fleet Training General Manager
P. Norgaard, Licensed Operator Requalification Training Supervisor
M. Petersen, Fleet Training Supervisor
M. Walter, Training Manager
J. Temple, RP ALARA Specialist
R. Latham, Radiation Protection/Chem. General Supervisor
G. Holthaus, Senior Emergency Preparedness Coordinator

Nuclear Regulatory Commission

K. Riemer, Chief, Reactor Projects Branch 2

LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

Opened

05000263-2009005-01	NCV	Inadequate Maintenance Procedure for 'A' SBTG System (Section 1R12)
05000263-2009005-02	NCV	Failure to Make Required Eight Hour Event Report per 10 CFR 50.72(b)(3)(v) (Section 1R13)
05000263/2009005-03	URI	MSPI Basis Document does not Reflect Current Plant Configuration for RHRSW (Section 4OA1)

Closed

05000263/2009005-01	NCV	Inadequate Maintenance Procedure for 'A' SBTG System (Section 1R12)
05000263-2009005-02	NCV	Failure to Make Required Eight Hour Event Report per 10 CFR 50.72(b)(3)(v) (Section 1R13)
05000263/2009-005-00	LER	Failed Fusible Link on Door 18 (Section 4OA3)

LIST OF DOCUMENTS REVIEWED

The following is a list of documents reviewed during the inspection. Inclusion on this list does not imply that the NRC inspectors reviewed the documents in their entirety, but rather, that selected sections or portions of the documents were evaluated as part of the overall inspection effort. Inclusion of a document on this list does not imply NRC acceptance of the document or any part of it, unless this is stated in the body of the inspection report.

Section 1R01

C.4-B.08.03.A; Heating Boiler; Revision 06
EC-15007; Temporary Heating Plan

Section 1R04

2155-10; Motor Control Center Checklist MCC-133; TB East 911'; Revision 09
2155-13; Motor Control Center Checklist MCC-143; TB East 931'; Revision 13
System Health Report; HPC High Pressure Coolant Injection; dated 11/5/2009

Section 1R05

Strategy A.3-23-B; Intake Structure Corridor; Revision 5
Strategy A.3-06; Refuel Floor; Revision 6
Strategy A.3-33; EFT Building Third Floor; Revision 6
Strategy A.3-31-B; EFT Building 1st Floor (Div II); Revision 12
Strategy A.3-19-B; Essential MCC Area (No. 142 & 143 931' Elevation); Revision 10
Strategy A.3-19-C; F.W. Pipe Chase; Revision 5.

Section 1R11

Simulator Scenario RQ-SS-72
Monticello Licensed Operator Examination Results; November 18, 2009
NRC License Maintenance Responsibilities, OWI-01.08; Revision 11
Walkthrough Exam Summary, QF-1073-01; Revision 1
Two-Year Plan; 05/18/2009
Six-Year Plan; 05/18/2009
Licensed Operator Requalification Training Program Description; Revision 0
Remediation Training Form; Multiple; Various Dates
NRC IP-71111.11B Self-Assessment; 2009
NRC Exam Security Requirements; Revision 1
PINGP 910; NRC Licensed Duty Quarterly Report Tracking Report; Revision 1
Licensed Operator Requalification Training Attendance Records; 2008-2009
Licensed Operator Requalification Training Feedback Summary Forms QF-1050-01a; Revision 3
Curriculum Review Committee, M-9100 Licensed Operator Requal, 2009 Meeting Minutes, QF-1060-10; Revision 1
FP-T-SAT-80; Simulator Configuration Manager; Revision 3
FP-T-SAT-81; Simulator Testing and Documentation; Revision 5
SSP-01; Simulator Performance Test Procedure-Steady State Performance, 08-01-2008
FP-T-SAT-71; NRC Exam Security Requirements; Revision 1
NRC License Active Status Maintenance; Revision 8
XX-01, Simulator Performance Test Procedure-Simulator Real Time Measurement, 08-04-2008
XX-02, SPTP-Simulator Repeatability; 08-04-2008
T-01, SPTP-Manual Scram; 07-25-2008
T-03, SPTP-Simultaneous Closure of All MSIV's; 07-25-2008

T-09, SPTP-Maximum Steam Rupture in Containment; 07-28-2008
C.5.1-2006, Reactor Pressure Vessel Flooding (Bases); Revision 9
C.5-3205, Terminate and Prevent; Revision 6
Two Simulator Crew and Individual Evaluation Reports; Various Dates
Six Licensed Operator Medical Records; Various Dates
Four Simulator Scenarios for Annual License Examination Evaluation; Various Dates
24 Job Performance Measures; Various Dates
Two Written Examinations for Biennial License Examination; Various Dates

Section 1R12

4 AWI-08.01.03; HELB Practices; Revision 15
CAP 01200304; AO-2945 Failed to Open during 0253-01 'A' SBTG Quarterly Test
CAP 01109043; AO-2944, 'B' SBTG Inlet Valve Appears Mechanically Bound
4171-02-PM; Standby Gas Treatment System Air Heater – 'B' Train; Revision 8
0253-01; SBTG 'A' Train Quarterly Test; Revision 40
Operations Manual B.04.02-05; Secondary Containment/Standby Gas Treatment; Revision 23
CAP 01210817; NRC Feedback on Reportability of SBTGS Event

Section 1R13

4 AWI-08.01.00; Fire Protection Program Plan; Revision 11
Operations Manual B.08.05-05; Fire Protection – System Operation; Revision 46
EC 14960; Cable Spreading Room Halon Low Pressure Performance
0327; Cable Spreading Room Halon Tank Weight and Pressure Test; Revision 17
CAP 01183755; Low Halon Pressure on Cable Spreading Room Cylinder
CAP 01204645; PCT Valves Inoperable due to Field Setup Not Matching Calculations
CAP 01204653; AO-2377 Declared Inoperable due to Setup Issues
CAP 01204654; AO-2896 Declared Inoperable due to Setup Issues
CAP 01204660; AO-2387, Exact Field Dimensions Could not be Obtained
42321-PM; Primary Containment T-Seated Butterfly Valves; Revision 9
WO 392352; MECH-AO-2896, Adjust Link and Lever Dimension
CAP 01209704; Incorrect Rotation on MO-2006 Following 480V Bucket Swap
EC15312; Evaluate Condition of MO-2006 Following Backseat
CAP 01210858; HPCI Steam Line Support Concerns
CAP 01210762; Cosmetic Damage to Grouted Fire Barrier
NH36249; High Pressure Coolant Injection System Steam Side P&ID; Revision 77

Section 1R15

OPR 1204430; Calculations were Found to Have Incorrect Input with Regards to Concrete Strength
OPR 1204777 Turbine Bypass Valve Capacity is Less than What is Stated in Licensing Documents for Current Operating Cycle
CAP 1200170; Pickup Voltage on 480v MCC Contactors not Periodically Tested
CAP 1200723; P-111B Calculated Starter Voltage Lower than Expected
CAP 1202633; B4319 Contactor Failed Degraded Voltage Testing
CAP 1136111; Manual Isolations Required after HELB in Turbine Building
EC 14776; Isolation of Feedwater Crack in Steam Chase
CAP 1194493; Feedwater HELB Crack in Main Steam Chase

Section 1R19

CAP 01208120; TS Impact of Restoring V-EF-18B from Maintenance Questioned
4460-14-PM; V-EF-18B Lubrication and Inspection; Revision 6
WO 379869; PM 4460-14 V-EF-18B
WO 347705; Perform 4946-PM Ac Induction 4KV/480V Motor Offline Testing
CAP 01201990; CRV Post-Maintenance Testing Required 3.0.3 Entry
WO 388007; Investigate/Repair Auto-Start Circuitry for 'A' CRV
0255-06-III-1; HPCI Comprehensive Pump and Valve Tests; Revision 16
CAP 01210814; NRC Feedback on Retraction of CREFT SSFF
CAP 01211484; 150G-505, 152-505 Ground Relay not Within Acceptance Criteria
0255-03-IA-1-1; 'A' Core Spray Quarterly Pump and Valve Test; Revision 50

Section 1R22

0533; Containment Sump Flow Measurement Instrumentation; Revision 15
0255-11-III-4; 14 ESW Quarterly Pump and Valve Test; Revision 53
1069; HPCI Flow Control System Dynamic Test Procedure; Revision 20
CAP 1210821; Unexpected Annunciator Received during Startup of HPCI

Section 1EP4

Monticello Nuclear Generating Plant Emergency Plan; Revision 31
Monticello Nuclear Generating Plant Emergency Plan; Revision 32
A.2-101; Classification of Emergencies; Revision 40
A.2-101; Classification of Emergencies; Revision 41

Section 2OS1

WO-385617; RWP-372; Comprehensive HPCI Run Including HPCI Steam Supply Line to
Visually Check for Vibration; dated December 16, 2009
4-AWI-04.05.13; Control of Items in the Spent Fuel Pool; Revision 7
R.07.02; Area Posting, Special Status Signs and Hot Spot Stickers; Revision 35
CAP-01173234; Improper Boundaries of HCA Could Allow Contamination Out-Skirting of
HCA Boundaries at the Entrance of CRD Rebuild Facility; dated March 16, 2009
CAP-01173307; Worker Entered CA without Protective Clothing into RHR Room; dated
April 17, 2009
RWP-00000886-01; SRV Change-Out; Locked High Radiation Area (LHRA); dated
March 19, 2009
CAP-01173835; Condenser Room Contamination Control; dated March 19, 2009
CAP-01173891; Improper RP work Practices during Scaffold Erection; dated March 18, 2009
CAP- 01175853; RP Dose Rate Labeling Issues of HP Turbine Diaphragms from HP Turbine
Causes Work Delays; dated March 31, 2009
CAP-01176558; Incorrect Guidance Caused Unnecessary Dose Received in the Drywell; dated
April 3, 2009
R.01.04; Control of Personnel in High Radiation and Airborne Areas; Revision 21
R.13.08; Radiological Work Plan for Underwater Diving; Revision 6
R.13.03; Monticello Nuclear Generating Plant; Radiography; Revision 11
R.13.08; Radiological Work Plan for Underwater Diving; Revision 6

Section 2OS2

4-AWI-08.04.01; Radiation Protection Plan; Revision 27

ALARA Report from the Coordinator; Monticello Nuclear Generating Plant 2009

Monticello Nuclear Generating Plant; Long Term Dose Reduction Plan 2008 -2012; Revision 3
CD 9.2; Nuclear Department Corporate Directive; Radiation Dose Guidelines; dated
November 11, 2008

CAP-01179081; WO-00372646 Exceeded the Dose Estimate; dated April 22, 2009

CAP-01181227; 1843 mrem was Received for Final Drywell Cleaning; dated May 7, 2009

CAP-01175551; Dose Estimate was Exceeded on WO-345547-02; dated March 29, 2009

CAP-01180004; DW Shielding Installation Exceeded the Dose Estimate; dated April 28, 2009

Nuclear Oversight First Quarter 2009 Assessment Report for Monticello

Nuclear Oversight Second Quarter 2009 Assessment Report for Monticello

WO-00378893; Install General Lead Shielding in Drywell; RP ALARA Task; dated
December 17, 2009

TE-0272; Work Order Dose Report for RFO-24

QF-1207; WO-00344150; Radiological Work Assessment Form ALARA Review Checklist:
Replace Degraded Insulation Blankets in Drywell; dated March 10, 2009

QF-1203; Radiological Work Assessment Form; dated March 9, 2009

QF-1226; Radiological Work Assessment Form Post Job Review: WO-00344150; dated
September 24, 2009

QF-1207; WO-00368058; Radiological Work Assessment Form ALARA Review Checklist;
SRV Change-Out Main Valve and Topwork Test SRV Discharge; dated February 11, 2009

QF-1226; Radiological Work Assessment Form Post Job Review; Drywell SRV Work; date
September 14, 2009

QF-1207; WO-00367391; Radiological Work Assessment Form ALARA Review Checklist;
Drywell Scaffold Support; dated March 10, 2009

QF-1226; Radiological Work Assessment Form Post Job Review; Drywell Scaffold Support;
dated September 24, 2009

QF-1207; WO-00367391; Radiological Work Assessment Form ALARA Review Checklist;
ISI Nozzle Examination; dated March 5, 2009

Section 2OS3

CAP 01130721; DARM No. 9 in RW with Past Due Function Check; dated February 17, 2009

CAP 01169907; Unexpected Annunciator Refuel Floor Area High Radiation Spurious;
March 31, 2009

CAP 01174121; RP Department Lacks Alarm Response Procedure on AMS-4; June 15, 2009

CAP 0118338; Received Unexpected Sewer Radiation Monitor Alarm; July 8, 2009

CAP 01186986; DARM-10 Failed the Routine Monthly Function Check; August 8, 2009

CAP 01148748; Received Unexpected OFF Gas ARM/CAM Trip Annunciator; October 27, 2008

CAP 011115517; Unable to Calibrate ARGOS AZ-8 due to High Background; October 22, 2008

CAP 01138756; SJAЕ CAM Found in Alarm Status; May 5, 2008

CAP 01151658; Portable DARM Dose Rate Alarmed on Refueling Bridge with Unknown Cause;
December 23, 2008

CAP 01164448; SJAЕ CAM Trending Upward; February 16, 2009

CAP 01196576; ARGOZ AZ5 Failed Daily Function Check- Head Detector; September 13, 2009

CAP 01201573; ARGOZ AZ-5 Failed Function Check during Daily Source Check;
October 12, 2009

CAP 01114825; Fire Brigade Leader did not Use Glasses Insert with SCBA during Fire Brigade
Drill; November 24, 2007

CAP 01125177; Monthly SCBA Inspection not Performed by the Due Dates; March 10, 2008

CAP 01141376; Missing SCBA Mask Inserts in Alternate Fire Brigade Room;
 December 20, 2008
 R-05-07; SCBA Inspection and Functional Check; Revision 20
 Snapshot Summary for RP Instrument Program SAR 01094362
 Snapshot Self Assessment of MNGP Respiratory Protection Program
 5719; NMC CAM Calibration Data Sheets; Revision 17; 2008 – 2009
 5848; AMS-4 Calibration Data Sheets; Revision 0; 2009 – 2009
 5598-01; Semiannual Smear Counter Functional Checks; Revision 2
 R-09-31; NMC Continuous Air Monitors; Revision 16
 Part 61; Waste Stream Activities (uCi/gram); Condensate Resin; Dry Active Waste; Reactor
 Water Clean-Up (RWCU); July 2008
 R-11-08; Selection and Entry of 10 CFR Part 61 Correlation Factors; Revision 7
 Technical Basis Document No. 04-002; Evaluation of the Canberra Argos Zeus-4G Personnel
 Contamination Monitor; March 25, 2005
 0386; Drywell Particulate Monitor Calibration; Revision 24
 R-09-66; Operation of MG Telepole Dose Rate Instrument; Revision 1
 R-09-60; Function Check and Calibration of PM-7 Portal Monitor; Revision 9
 R-09-62; ARGOS Contamination Monitors; Functional Check and Calibration; Revision 12

Section 4OA1

3530-08; NRC/WANO Performance Indicator RCS Activity Fuel Performance and Chemistry;
 Revision 10
 3530-06; NRC/WANO Performance Indicator Radiation Safety and Exposure; Revision 5
 Occupational Exposure/Public Exposure RETS/ODCM Occurrences from 1st Quarter 2008
 through 3rd Quarter 2009, Reporting Periods
 Fuel Performance; Maximum I-131 Dose Equivalent Activity from 1st Quarter 2008 through
 3rd Quarter 2009, Reporting Periods
 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 RHR; July 2008 – June 2009
 MSPI Unavailability Index Derivation Report for Heat Removal System; July 2008 – June 2009
 MSPI Unreliability Index Derivation Report for Heat Removal System; July 2008 – June 2009
 MSPI Performance Limit Exceeded Derivation Report for Heat Removal System;
 July 2008 - June 2009

Section 4OA2

CAP 01184276; Operations DRUM Identifies Adverse Trend in Tagout/Lockout Process
 CAP 01184941; Adverse Trend: Work Plan Changes Made Without Review and Approval
 CAP 01202466; Adverse Trend in Double Disc Gate Valve LLRT Performance
 3rd Quarter 2009 Operations Department Roll-up Meeting Results

Section 4OA3

Operations Manual C.2-05; Power Operation – System Operation; Revision 36

CAP 01194446; Technical Specification 3.0.3 Entry due to Inoperable HELB/Flood Barrier

CAP 01103584; Door-18 Found Closed

CAP 01208146; NRC Issue Associated with LER 2009-005

CAP 01195145; A Level CAP EFR not Completed as Required

Root Cause Evaluation 01194357-02; Door-18 Fusible Link Failed Allowing the Door to Close,
Thereby Invalidating Feed Water HELB Mitigation

LIST OF ACRONYMS USED

ADAMS	Agencywide Document Access Management System
ALARA	As-Low-As-Is-Reasonably-Achievable
ARM	Area Radiation Monitor
ASME	American Society of Mechanical Engineers
AWI	Administrative Work Instruction
CAM	Continuous Air Monitor
CAP	Corrective Action Program
CDF	Core Damage Frequency
CDBI	Component Design Bases Inspection
CEDE	Committed Effective Dose Equivalent
CFR	Code of Federal Regulations
CREF	Control Room Emergency Filtration
CRV	Control Room Ventilation
CSR	Cable Spreading Room
DRP	Division of Reactor Projects
EDG	Emergency Diesel Generator
EFT	Emergency Filtration Treatment
ESW	Emergency Service Water
HELB	High Energy Line Break
HPCI	High Pressure Coolant Injection
IMC	Inspection Manual Chapter
IP	Inspection Procedure
IST	Inservice Test
JPM	Job Performance Measure
kV	Kilovolt
LCO	Limiting Condition for Operation
LER	Licensee Event Report
LORT	Licensed Operator Requalification Training
MCC	Motor Control Center
MSPI	Mitigating Systems Performance Index
NCV	Non-Cited Violation
NEI	Nuclear Energy Institute
NRC	U.S. Nuclear Regulatory Commission
ODCM	Offsite Dose Calculation Manual
PARS	Publicly Available Records
PI	Performance Indicator
PM	Post or Preventative Maintenance
RCA	Radiologically Controlled Area
RCS	Reactor Coolant System
RETS	Radiological Effluent Technical Specification
RHR	Residual Heat Removal
RHRSW	Residual Heat Removal Service Water
RP	Radiation Protection
SAT	Systems Approach to Training
SCBA	Self-Contained Breathing Apparatus
SBGT	Standby Gas Treatment
SDP	Significance Determination Process
SRA	Senior Reactor Analyst
SSC	Systems, Structures, and Components

TS
USAR
WO

Technical Specification
Updated Safety Analysis Report
Work Order

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 the Monticello Nuclear Generating Plant. The information that you provide will be considered in accordance with Inspection Manual Chapter 0305.

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

Sincerely,

/RA/

Kenneth Riemer, Chief
Branch 2
Division of Reactor Projects

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

Enclosure: Inspection Report 05000263/2009005
w/Attachment: Supplemental Information

cc w/encl: Distribution via ListServ

DOCUMENT NAME: G:\1-SECY\1-WORK IN PROGRESS\MON 2009 005.DOC

☐ Publicly Available ☐ Non-Publicly Available ☐ Sensitive ☐ Non-Sensitive

To receive a copy of this document, indicate in the concurrence box "C" = Copy without attach/encl

"E" = Copy with attach/encl "N" = No copy

OFFICE	RIII	N	RIII	E	RIII		RIII	
NAME	CScott:cms		KRiemer					
DATE	02/05/2010		02/05/2010					

OFFICIAL RECORD COPY

Letter to T. O'Connor from K. Riemer dated February 5, 2010

SUBJECT: MONTICELLO NUCLEAR GENERATING PLANT
NRC INTEGRATED AND POWER UPRATE REVIEW INSPECTION REPORT
05000263/2009005

DISTRIBUTION:

Susan Bagley
RidsNrrDorlLpl3-1 Resource
RidsNrrPMMonticello
RidsNrrDirslrib Resource
Cynthia Pederson
Steven Orth
Jared Heck
Allan Barker
Carole Ariano
Linda Linn
DRPIII
DRSIII
Patricia Buckley
Tammy Tomczak
[ROPreports Resource](#)