



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**

REGION III
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LISLE, IL 60532-4352

November 1, 2011

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 INTEGRATED INSPECTION
REPORT 05000263/2011004**

Dear Mr. O'Connor:

On September 30, 2011, the U.S. Nuclear Regulatory Commission (NRC) completed an integrated inspection at your Monticello Nuclear Generating Plant. The enclosed report documents the inspection findings, which were discussed on October 6, 2011, 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, one NRC-identified finding of very low safety significance was identified. The finding involved a violation of NRC requirements. However, because of its very low safety significance, and because the issue was entered into your corrective action program, the NRC is treating the issue as a non-cited violation (NCV) in accordance with Section 2.3.2 of the NRC Enforcement Policy.

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

T. O'Connor

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In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records System (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Website at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

/RA/

Kenneth Riemer, Chief
Branch 2
Division of Reactor Projects

Docket Nos. 50-263; 72-058
License No. DPR-22

Enclosure: Inspection Report 05000263/2011004
w/Attachment: Supplemental Information

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket Nos: 50-263; 72-058
License No: DPR-22

Report No: 05000263/2011004

Licensee: Northern States Power Company, Minnesota

Facility: Monticello Nuclear Generating Plant

Location: Monticello, MN

Dates: July 1 through September 30, 2011

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Enclosure

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SUMMARY OF FINDINGS

IR 05000263/2011004; 07/01/2011 – 09/30/2011; Monticello Nuclear Generating Plant; Surveillance Testing.

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

A. NRC-Identified and Self-Revealed Findings

Cornerstone: Mitigating Systems

- Green. The inspectors identified a finding of very low safety significance and an associated non-cited violation (NCV) of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," when the licensee failed to follow the quarterly emergency diesel generator (EDG) surveillance procedure during testing of the EDG air start system. Specifically, the licensee failed to follow a procedural step that involved in-service testing of a check valve in the EDG air start system that, if degraded, could allow air to bleed out of the starting air tanks which are required for diesel generator operability. The licensee entered this issue into their corrective action program (CAP), and corrective actions for this issue included suspension of the test, performance of a Human Performance Investigation Team review, and disqualification of the individual performing the test. The inspectors determined that the contributing cause that provided the most insight into the performance deficiency was associated with the cross-cutting area of Human Performance, having work practices components, and involving aspects associated with using human error prevention techniques during performance of work activities. [H.4(a)]

The inspectors determined that the licensee's failure to follow their EDG surveillance procedure was a performance deficiency, because it was the result of the failure to meet a requirement; the cause was reasonably within the licensee's ability to foresee and correct; and should have been prevented. The inspectors screened the performance deficiency per Inspection Manual Chapter (IMC) 0612, "Power Reactor Inspection Reports," Appendix B, and determined that the issue was more than minor because the performance deficiency was associated with the Human Performance attribute of the Mitigating Systems Cornerstone and affected the cornerstone's objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). As a result, this finding was evaluated under the Mitigating Systems Cornerstone. The inspectors applied IMC 0609, Attachment 4, "Phase 1 – Initial Screening and Characterization of Findings," to this finding. The inspectors utilized Column 2 of the Table 4a worksheet to screen the finding. The finding was determined to have very low safety significance because the inspectors answered "No" to all five questions. (Section 1R22)

B. Licensee-Identified Violations

No violations were identified.

REPORT DETAILS

Summary of Plant Status

Monticello operated at approximately 100 percent power for a majority of the inspection period, with minor power adjustments to support routine testing and control rod manipulations, with two notable exceptions. On August 6, 2011, reactor power was reduced to approximately 45 percent to establish the appropriate plant conditions to repair a bearing on the 11 condensate pump motor. Reactor power was returned to approximately 100 percent on August 8, 2011. On August 27, 2011, additional repairs on the 11 condensate pump motor bearing required a power reduction to approximately 45 percent power. Reactor power was returned to approximately 100 percent on August 30, 2011, and remained at approximately full power for the remainder of the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R04 Equipment Alignment (71111.04)

.1 Quarterly Partial System Walkdowns

a. Inspection Scope

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

- high pressure coolant injection (HPCI) with reactor core isolation cooling (RCIC) out-of-service for maintenance;
- 'B' control room ventilation (CRV) and emergency service water (ESW) with 'A' CRV out-of-service for ESW piping modification; and
- core spray train 'A' during work on core spray train 'B.'

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

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

b. Findings

No findings were identified.

.2 Semi-Annual Complete System Walkdown

a. Inspection Scope

During the week of August 29, 2011, the inspectors performed a complete system alignment inspection of the 11 emergency diesel generator (EDG) 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 were identified.

1R05 Fire Protection (71111.05)

.1 Routine Resident Inspector Tours (71111.05Q)

a. Inspection Scope

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

- Fire Zone 1-A (12 residual heat removal (RHR) and core spray pump room);
- Fire Zone 1-B (No. 11 RHR and core spray pump room);
- Fire Zone 1-C (RCIC room);
- Fire Zone 1-E (HPCI room); and
- Fire Zone 23-B (intake corridor).

The inspectors reviewed areas to assess if the licensee had implemented a fire protection program that adequately controlled combustibles and ignition sources within the plant; effectively maintained fire detection and suppression capability, maintained

passive fire protection features in good material condition, and implemented adequate compensatory measures for out-of-service, degraded or inoperable fire protection equipment, systems, or features in accordance with the licensee's fire plan. The inspectors selected fire areas based on their overall contribution to internal fire risk as documented in the plant's Individual Plant Examination of External Events with later additional insights, their potential to impact equipment which could initiate or mitigate a plant transient, or their impact on the plant's ability to respond to a security event. Using the documents listed in the Attachment to this report, the inspectors verified that fire hoses and extinguishers were in their designated locations and available for immediate use; that fire detectors and sprinklers were unobstructed; that transient material loading was within the analyzed limits; and fire doors, dampers, and penetration seals appeared to be in satisfactory condition. The inspectors also verified that minor issues identified during the inspection were entered into the licensee's CAP.

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

b. Findings

No findings were identified.

.2 Annual Fire Protection Drill Observation (71111.05A)

a. Inspection Scope

On September 21, 2011, the inspectors observed a fire brigade activation during a scheduled fire brigade drill. Based on this observation, the inspectors evaluated the readiness of the plant fire brigade to fight fires. The inspectors verified that the licensee staff identified deficiencies; openly discussed them in a self-critical manner at the drill debrief; and took appropriate corrective actions. Specific attributes evaluated were:

- proper wearing of turnout gear and self-contained breathing apparatus;
- proper use and layout of fire hoses;
- employment of appropriate fire fighting techniques;
- sufficient firefighting equipment brought to the scene;
- effectiveness of fire brigade leader communications, command, and control;
- search for victims and propagation of the fire into other plant areas;
- smoke removal operations;
- utilization of pre-planned strategies;
- adherence to the pre-planned drill scenario; and
- drill objectives.

Documents reviewed are listed in the Attachment to this report.

These activities constituted one annual fire protection inspection sample as defined in IP 71111.05-05.

b. Findings

No findings were identified.

1R06 Flooding (71111.06)

.1 Underground Vaults

a. Inspection Scope

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

- 2R transformer manhole NMH313 and selected independent spent fuel storage facility installation (ISFSI) manholes.

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

b. Findings

No findings were identified.

1R11 Licensed Operator Regualification Program (71111.11)

.1 Resident Inspector Quarterly Review (71111.11Q)

a. Inspection Scope

On August 1, 2011, the inspectors observed a crew of licensed operators in the plant's simulator during licensed operator requalification examinations to verify that operator performance was adequate, evaluators were identifying and documenting crew performance problems, and training was being conducted in accordance with licensee procedures. The inspectors evaluated the following areas:

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

The crew's performance in these areas was compared to pre-established operator action expectations and successful critical task completion requirements. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one quarterly licensed operator requalification program sample as defined in IP 71111.11.

b. Findings

No findings 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:

- 11 condensate pump repeat motor thrust bearing failure; and
- intake structure fire protection sprinkler piping blockage.

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

The intake structure fire protection sprinkler system blockage issue was evaluated in more detail as part of a special inspection. Any findings or violations identified that are associated with this issue will be documented in Inspection Report 05000263/2011010.

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:

- unexpected actuation of condenser bay fire header sprinkler;
- degraded instrumentation lines related to No. 11 circ water pump; and
- condensate/demineralizer system wetted power supplies.

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 are listed in the Attachment to this report.

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

b. Findings

No findings were identified.

1R15 Operability Determinations and Functional Assessments (71111.15)

.1 Operability Evaluations

a. Inspection Scope

The inspectors reviewed the following issues:

- V-AC-5 ('A' RHR room cooling unit) cooling coil leak;
- V-AC-5 cooling coil leak progressive degradation;
- 'G' safety relief valve filter ring installation;
- 11 condensate pump motor thrust bearing defect;

- functionality assessment for the intake structure fire protection sprinkler header blockage;
- 11 SBLC oil leaks; and
- 11 and 12 EDGs following discovery of inadequate load reject surveillance testing.

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

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

b. Findings

On September 29, 2011, as a result of the licensee's discovery that they had been inadequately demonstrating that both EDGs could meet a surveillance requirement associated with load rejection, the licensee declared both the 11 and 12 EDGs inoperable and entered the applicable Limiting Condition for Operation (LCO) Action Statements. Later that evening, the licensee requested and was granted a Notice of Enforcement Discretion (NOED) to extend the Action Completion Time for TS 3.8.1.F to five days, in order to allow time to perform the required EDG testing (NOED 11-3-001).

In accordance with the NRC's NOED process, when an NOED is granted, the inspectors open an Unresolved Item (URI) to facilitate prompt tracking, documentation, and closure of inspection, verification, and resolution activities, including enforcement action determinations, associated with the NOED. This URI will give the inspectors an opportunity to more closely evaluate the actions taken by the site when the issue was identified. In addition, the URI will allow the inspectors to review the causal factors that resulted in the site's need for an NOED.

As part of this URI, the inspectors will evaluate the underlying technical issues associated with the EDG inoperability and potential performance deficiencies associated with the inadequate surveillance procedure. To perform this evaluation, the inspectors will review information regarding why the EDG load reject surveillance procedures were inadequate to demonstrate that the equipment could meet surveillance requirement 3.8.1.7. The inspectors will also take the opportunity to reexamine the site's actions to uncover the issue, as well as the site's actions once the issue was identified. Further inspection activities will include gathering additional information on why the procedure was inadequate, examining the site's decision-making process for the issue,

and evaluating the issue for identification credit in order to determine how to appropriately disposition the issue.

Until activities associated with the tracking and resolution of the NOED and surveillance procedure inadequacies are completed, this issue will be treated as an unresolved item (**URI 000263/2011004-01; NOED for Emergency Diesel Generator Load Rejection Surveillance Requirement 3.8.1.7**). Additional information associated with the EDG NOED request is documented in Section 4OA3 of this report.

1R18 Plant Modifications (71111.18)

.1 Plant Modifications

a. Inspection Scope

The inspectors reviewed the following modification:

- replacement of cooling coil for 'A' RHR room air cooling unit.

The inspectors reviewed the licensee's commercial grade dedication and item equivalency evaluations associated with the replacement of the cooling coil for 'A' RHR room air cooling unit. The inspectors, as applicable, observed ongoing and completed work activities to ensure that the modifications were installed as directed and consistent with the design control documents; the modifications operated as expected; post-modification testing adequately demonstrated continued system operability, availability, and reliability; and that operation of the modifications did not impact the operability of any interfacing systems. As applicable, the inspectors verified that relevant procedure, design, and licensing documents were properly updated. Lastly, the inspectors discussed the plant modification with operations, engineering, and training personnel to ensure that the individuals were aware of how the operation with the plant modification in place could impact overall plant performance. Documents reviewed in the course of this inspection are listed in the Attachment to this report.

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

b. Findings

No findings were identified.

1R19 Post-Maintenance Testing (71111.19)

.1 Post-Maintenance Testing

a. Inspection Scope

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

- 11 reactor protection system motor generator (MG) Set;
- MO-3502 RCIC test return isolation valve;

- 13 ESW – system flow and operability verification after piping modification;
- diesel fire pump following its failure to start on an auto-actuation signal;
- V-AC-5 room cooler subsequent to replacement; and
- control rod 30-47 PM test after CRD-138 check valve repair.

These activities were selected based upon the SSCs ability to impact risk.

The inspectors evaluated these activities for the following (as applicable): the effect of testing on the plant had been adequately addressed; testing was adequate for the maintenance performed; acceptance criteria were clear and demonstrated operational readiness; test instrumentation was appropriate; tests were performed as written in accordance with properly reviewed and approved procedures; equipment was returned to its operational status following testing (temporary modifications or jumpers required for test performance were properly removed after test completion); and test documentation was properly evaluated. The inspectors evaluated the activities against TSs, the USAR, 10 CFR Part 50 requirements, licensee procedures, and various NRC generic communications to ensure that the test results adequately ensured that the equipment met the licensing basis and design requirements. In addition, the inspectors reviewed corrective action documents associated with PM tests to determine whether the licensee was identifying problems and entering them in the CAP and that the problems were being corrected commensurate with their importance to safety. Documents reviewed are listed in the Attachment to this report.

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

b. Findings

No findings were identified.

1R22 Surveillance Testing (71111.22)

.1 Surveillance Testing

a. Inspection Scope

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

- 12 EDG/12 ESW quarterly pump and valve tests (in-service test);
- reactor building to torus vacuum breaker operability check (routine);
- 11 EDG/11 ESW quarterly pump and valve tests (in-service test); and
- 11/12 SBLC quarterly pump and valve tests (routine).

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

- did preconditioning occur;
- were the effects of the testing adequately addressed by control room personnel or engineers prior to the commencement of the testing;

- were acceptance criteria clearly stated, demonstrated operational readiness, and consistent with the system design basis;
- plant equipment calibration was correct, accurate, and properly documented;
- as-left setpoints were within required ranges; and the calibration frequency was in accordance with TSs, the USAR, procedures, and applicable commitments;
- measuring and test equipment calibration was current;
- test equipment was used within the required range and accuracy; applicable prerequisites described in the test procedures were satisfied;
- test frequencies met TS requirements to demonstrate operability and reliability; tests were performed in accordance with the test procedures and other applicable procedures; jumpers and lifted leads were controlled and restored where used;
- test data and results were accurate, complete, within limits, and valid;
- test equipment was removed after testing;
- where applicable for IST activities, testing was performed in accordance with the applicable version of Section XI, American Society of Mechanical Engineers 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 two routine surveillance testing samples and two IST samples as defined in IP 71111.22, Sections -02 and -05.

b. Findings

Introduction

The inspectors identified a finding of very low safety significance and non-cited violation (NCV) of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," when the licensee failed to follow the quarterly EDG surveillance procedure during testing of the EDG air start system. Specifically, the licensee failed to follow a procedural step that involved IST of a check valve in the EDG air start system that, if degraded, could allow air to bleed out of the starting air tanks which are required for diesel generator operability.

Description

On July 11, 2011, the licensee performed the EDG 11 and ESW 11 pump and valve quarterly surveillance test. The first section of the surveillance procedure involved testing the EDG air start system. This section included testing of the air start compressors, air lines, and air line valves, among other components.

In this section of the procedure, the licensee was required to perform an IST of check valve GSA 32-1. Precaution 7 of Surveillance Procedure 0187-01 highlighted the importance of the IST steps, stating that "steps identified with an "IST" contain acceptance criteria that is established to prove the operational readiness of pumps and valves in the Inservice Testing Program. If the step cannot be satisfactorily completed or the measured value is outside the acceptable range, the Control Room Supervisor must be immediately notified. The Control Room Supervisor must complete Form 3107 (INSERVICE TEST DEVIATION FROM CRITERIA CONTROL ROOM SUPERVISOR'S IMMEDIATE ACTION) which initiates the corrective action process and documents the operability determination."

Check Valve GSA-32-1, 11 EDG No. 1 air dryer 11 outlet check, was located in the air line between the 11 EDG No. 1 air compressor and the air receiver tanks for the 11 EDG No. 1 air start system. In preparation for this portion of the surveillance, the individual performing the test performed Step 6 in the procedure. Step 6 required the worker to open valve GSA 29-1, 11 EDG No. 1 air start dryer blowdown, to bleed the air pressure off the section of line between the air compressor and check valve GSA-32-1. Following Step 6, a procedural note highlighted the importance of the next step; the note stated, "STEP 7 performs the close exercise test of GSA-32-1." Step 7 was also labeled as an "IST" step.

Step 7 of Procedure 0187-01 stated, "AFTER air pressure is bled off, THEN verify GSA-32-1, 11 EDG No. 1 AIR DRYER OUTLET CHECK, is CLOSED by no air flow from the blowdown line." However, instead of checking the blowdown line for the check valve being testing, located near GSA-32-1, the individual performing the test went and checked the blowdown line located on the opposite side of the air receiver tanks. The individual signed off the step and left to proceed onto the next step. However, the inspectors observed that a closed valve located immediately upstream of the blowdown line checked by the individual was labeled GSA-31-2, and questioned whether the step had been performed correctly.

After being questioned by the inspector, the individual returned to the GSA-31-2 blowdown line, recognized the error, checked the blowdown line located immediately next to the GSA-31-2 line, and again proceeded onto the next step. The inspector noted that this line had a valve labeled GSA-31-1, and questioned the individual a second time. The individual returned, and again recognized his error. Finally, the inspector called his attention back to the check valve labeled "GSA-32-1," and questioned the location of the appropriate blowdown line to check. At this point the individual was able to identify the correct location of the blowdown line for this valve.

Analysis

The inspectors determined that the licensee's failure to follow the EDG 11 surveillance procedure was a performance deficiency because it was the result of the failure to meet a requirement; the cause was reasonably within the licensee's ability to foresee and correct; and should have been prevented. The inspectors determined that the contributing cause that provided the most insight into the performance deficiency was associated with the cross-cutting area of Human Performance, having work practices components, and involving aspects associated with using human error prevention techniques during performance of work activities. [H.4(a)]

The inspectors screened the performance deficiency per IMC 0612, "Power Reactor Inspection Reports," Appendix B, and determined that the issue was more than minor because the performance deficiency was associated with the Human Performance attribute of the Mitigating Systems Cornerstone and affected the cornerstone's objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). As a result, this finding was evaluated under the Mitigating Systems Cornerstone. The inspectors applied IMC 0609, Attachment 4, "Phase 1 – Initial Screening and Characterization of Findings," to this finding. The inspectors utilized Column 2 of the Table 4a worksheet to screen the finding. The finding was determined to have very low safety significance because the inspectors answered 'No' to all five questions.

Enforcement

Title 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," requires, in part, that activities affecting quality shall be prescribed by documented procedures, of a type appropriate to the circumstances, and shall be accomplished in accordance with these procedures. Contrary to this requirement, on July 11, 2011, the licensee failed to follow Step 7 of Procedure 0187-01, "11 EDG/11 ESW Quarterly Pump and Valve Tests," a procedure affecting quality, during testing of the EDG air start system. Specifically, the licensee failed to follow a procedural step that involved the IST of a check valve in the EDG air start system that, if degraded, could allow air to bleed out of the starting air tanks that are required for diesel generator operability. Because the violation was of very low safety significance and was entered into the licensee's corrective action program (CAP 1294118), this violation is being treated as an NCV, consistent with Section 2.3.2 of the NRC Enforcement Policy.

(NCV 05000263/2011004-02; Failure to Follow Emergency Diesel Generator Quarterly Surveillance Procedure).

1EP6 Drill Evaluation (71114.06)

.1 Emergency Preparedness Drill Observation

a. Inspection Scope

The inspectors evaluated the conduct of a routine licensee emergency drill on July 12, 2011, to identify any weaknesses and deficiencies in classification, notification, and protective action recommendation development activities. The inspectors observed emergency response operations in the Technical Support Center and the simulated control room to determine whether the event classification, notifications, and protective

action recommendations were performed in accordance with procedures. The inspectors also attended the licensee drill critique to compare any inspector-observed weaknesses with those identified by the licensee staff in order to evaluate the critique and to verify whether the licensee staff was properly identifying weaknesses and entering them into the CAP. As part of the inspection, the inspectors reviewed the drill package associated with the drill.

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

b. Findings

No findings were identified.

.2 Training Observation

a. Inspection Scope

The inspectors observed a simulator training evolution for licensed operators on August 1, 2011, which required emergency plan implementation by a licensee operations crew. This evolution was planned to be evaluated and included in performance indicator 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 corrective action program. As part of the inspection, the inspectors reviewed the scenario package associated with the simulator exercise.

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 were identified.

2. RADIATION SAFETY

Cornerstones: Public and Occupational Radiation Safety

2RS1 Radiological Hazard Assessment and Exposure Controls (71124.01)

The inspection activities supplement those documented in Inspection Report 05000263/2011003, and constitute one complete sample as defined in IP 71124.01-05.

.1 Contamination and Radioactive Material Control (02.04)

a. Inspection Scope

The inspectors observed locations where the licensee monitors potentially contaminated material leaving the radiological controlled area (RCA), and inspected the methods used for control, survey, and release from these areas. The inspectors observed the

performance of personnel surveying and releasing material for unrestricted use and evaluated whether the work was performed in accordance with plant procedures. The inspectors also reviewed whether the procedures were sufficient to control the spread of contamination and prevent unintended release of radioactive materials from the site. The inspectors assessed whether the radiation monitoring instrumentation had appropriate sensitivity for the type(s) of radiation present.

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

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

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

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

b. Findings

No findings were identified.

.2 Radiological Hazards Control and Work Coverage (02.05)

a. Inspection Scope

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

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

b. Findings

No findings were identified.

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

The inspection activities supplement those documented in Inspection Report 050002632011003, and constitute one complete sample as defined in IP 71124.02-05.

.1 Radiological Work Planning (02.02)

a. Inspection Scope

The inspectors determined whether post-job reviews were conducted and, if identified, problems were entered into the licensee's CAP.

b. Findings

No findings were identified.

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

a. Inspection Scope

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

The inspectors evaluated whether the licensee had established measures to track, trend and, if necessary, to reduce occupational doses for ongoing work activities. The inspectors assessed whether trigger points or criteria were established to prompt additional reviews and/or additional ALARA planning and controls.

The inspectors evaluated the licensee's method of adjusting exposure estimates, or re-planning work, when unexpected changes in scope or emergent work were encountered. The inspectors assessed whether adjustments to exposure estimates (intended dose) were based on sound radiation protection and ALARA principles or if they were just adjusted to account for failures to control the work. The inspectors evaluated whether the frequency of these adjustments called into question the adequacy of the original ALARA planning process.

b. Findings

No findings were identified.

.3 Source Term Reduction and Control (02.04)

a. Inspection Scope

The inspectors used licensee records to determine the historical trends and current status of significant tracked plant source terms known to contribute to elevated facility aggregate exposure. The inspectors assessed whether the licensee had made allowances or developed contingency plans for expected changes in the source term as the result of changes in plant fuel performance issues or changes in plant primary chemistry.

b. Findings

No findings were identified.

2RS6 Radioactive Gaseous and Liquid Effluent Treatment (71124.06)

This inspection constituted one complete sample as defined in IP 71124.06-05.

.1 Inspection Planning and Program Reviews (02.01)

Event Report and Effluent Report Reviews

a. Inspection Scope

The inspectors reviewed the radiological effluent release reports issued since the last inspection to determine if the reports were submitted as required by the Offsite Dose Calculation Manual/Technical Specifications. The inspectors reviewed anomalous results, unexpected trends, or abnormal releases identified by the licensee for further inspection to determine if they were evaluated, were entered in the corrective action program, and were adequately resolved.

The inspectors identified radioactive effluent monitor operability issues reported by the licensee as provided in effluent release reports, to review these issues during the onsite inspection, as warranted, given their relative significance and determine if the issues were entered into the corrective action program and adequately resolved.

b. Findings

No findings were identified.

Offsite Dose Calculation Manual and Final Safety Analysis Report Review

a. Inspection Scope

The inspectors reviewed Final Safety Analysis Report (FSAR) descriptions of the radioactive effluent monitoring systems, treatment systems, and effluent flow paths so they can be evaluated during inspection walkdowns.

The inspectors reviewed changes to the Offsite Dose Calculation Manual (ODCM) made by the licensee since the last inspection against the guidance in NUREG-1302 and 0133, and Regulatory Guides 1.109, 1.21 and 4.1. When differences were identified, the inspectors reviewed the technical basis or evaluations of the change during the onsite inspection to determine whether they were technically justified and maintain effluent releases ALARA.

The inspectors reviewed licensee documentation to determine if the licensee has identified any non-radioactive systems that have become contaminated as disclosed either through an event report or the ODCM since the last inspection. This review provided an intelligent sample list for the onsite inspection of any 10 CFR 50.59 evaluations and allowed a determination if any newly contaminated systems have an unmonitored effluent discharge path to the environment, whether any required ODCM revisions were made to incorporate these new pathways and whether the associated effluents were reported in accordance with Regulatory Guide 1.21.

b. Findings

No findings were identified.

Groundwater Protection Initiative Program

a. Inspection Scope

The inspectors reviewed reported groundwater monitoring results and changes to the licensee's written program for identifying and controlling contaminated spills/leaks to groundwater.

b. Findings

No findings were identified.

Procedures, Special Reports, and Other Documents

a. Inspection Scope

The inspectors reviewed Licensee Event Reports (LERs), event reports and/or special reports related to the effluent program issued since the previous inspection to identify any additional focus areas for the inspection based on the scope/breadth of problems described in these reports.

The inspectors reviewed effluent program implementing procedures, particularly those associated with effluent sampling, effluent monitor set-point determinations, and dose calculations.

The inspectors reviewed copies of licensee and third party (independent) evaluation reports of the effluent monitoring program since the last inspection to gather insights into the licensee's program and aid in selecting areas for inspection review (smart sampling).

b. Findings

No findings were identified.

.2 Walkdowns and Observations (02.02)

a. Inspection Scope

The inspectors walked down selected components of the gaseous and liquid discharge systems to verify that equipment configuration and flow paths align with the documents reviewed in 02.01 above and to assess equipment material condition. Special attention was made to identify potential unmonitored release points (such as open roof vents in boiling water reactor turbine decks, temporary structures butted against turbine, auxiliary or containment buildings), building alterations which could impact airborne, or liquid, effluent controls, and ventilation system leakage that communicates directly with the environment.

For equipment or areas associated with the systems selected for review that were not readily accessible due to radiological conditions, the inspectors reviewed the licensee's material condition surveillance records, as applicable.

The inspectors walked down filtered ventilation systems to verify there are no conditions, such as degraded high-efficiency particulate air /charcoal banks, improper alignment, or

system installation issues that would impact the performance, or the effluent monitoring capability, of the effluent system.

As available, the inspectors observed selected portions of the routine processing and discharge of radioactive gaseous effluent (including sample collection and analysis) to verify that appropriate treatment equipment was used and the processing activities align with discharge permits.

The inspectors determined if the licensee has made significant changes to their effluent release points, e.g., changes subject to a 10 CFR 50.59 review or require NRC approval of alternate discharge points.

As available, the inspectors observed selected portions of the routine processing and discharge liquid waste (including sample collection and analysis) to verify that appropriate effluent treatment equipment is being used and that radioactive liquid waste is being processed and discharged in accordance with procedure requirements and aligns with discharge permits.

b. Findings

No findings were identified.

.3 Sampling and Analyses (02.03)

a. Inspection Scope

The inspectors selected effluent sampling activities, consistent with smart sampling, and assess whether adequate controls have been implemented to ensure representative samples were obtained (e.g., provisions for sample line flushing, vessel recirculation, composite samplers, etc.).

The inspectors selected effluent discharges made with inoperable (declared out-of-service) effluent radiation monitors to verify that controls are in place to ensure compensatory sampling is performed consistent with the radiological effluent TS/ODCM and that those controls are adequate to prevent the release of unmonitored liquid and gaseous effluents.

The inspectors determined whether the facility is routinely relying on the use of compensatory sampling in lieu of adequate system maintenance, based on the frequency of compensatory sampling since the last inspection.

The inspectors reviewed the results of the inter-laboratory comparison program to verify the quality of the radioactive effluent sample analyses and assessed whether the inter-laboratory comparison program includes hard-to-detect isotopes, as appropriate.

b. Findings

No findings were identified.

.4 Instrumentation and Equipment (02.04)

Effluent Flow Measuring Instruments

a. Inspection Scope

The inspectors reviewed the methodology the licensee uses to determine the effluent stack and vent flow rates to verify that the flow rates are consistent with radiological effluent TS/ODCM or FSAR values, and that any differences between assumed and actual stack and vent flow rates do not affect the results of the projected public doses.

b. Findings

No findings were identified.

Air Cleaning Systems

a. Inspection Scope

The inspectors assessed whether surveillance test results since the previous inspection for TS required ventilation effluent discharge systems (high-efficiency particulate air and charcoal filtration), such as the standby gas treatment system and the containment/auxiliary building ventilation system, meet TS acceptance criteria.

b. Findings

No findings were identified.

.5 Dose Calculations (02.05)

a. Inspection Scope

The inspectors reviewed all significant changes in reported dose values compared to the previous radiological effluent release report (e.g., a factor of 5, or increases that approach Appendix I criteria) to evaluate the factors which may have resulted in the change.

The inspectors reviewed radioactive liquid and gaseous waste discharge permits to verify that the projected doses to members of the public were accurate and based on representative samples of the discharge path.

Inspectors evaluated the methods used to determine the isotopes that are included in the source term to ensure all applicable radionuclides are included, within detectability standards. The review included the current Part 61 analyses to ensure hard-to-detect radionuclides are included in the source term.

The inspectors reviewed changes in the licensee's offsite dose calculations since the last inspection to verify the changes are consistent with the ODCM and Regulatory Guide 1.109. Inspectors reviewed meteorological dispersion and deposition factors used in the ODCM and effluent dose calculations to ensure appropriate factors are being used for public dose calculations.

The inspectors reviewed the latest Land Use Census to verify that changes (e.g., significant increases or decreases to population in the plant environs, changes in critical exposure pathways, the location of nearest member of the public or critical receptor, etc.) have been factored into the dose calculations.

For the releases reviewed above, the inspectors evaluated whether the calculated doses (monthly, quarterly, and annual dose) are within the 10 CFR Part 50, Appendix I and TS dose criteria.

The inspectors reviewed, as available, records of any abnormal gaseous or liquid tank discharges (e.g., discharges resulting from misaligned valves, valve leak-by, etc.) to ensure the abnormal discharge was monitored by the discharge point effluent monitor. Discharges made with inoperable effluent radiation monitors, or unmonitored leakages were reviewed to ensure that an evaluation was made of the discharge to satisfy 10 CFR 20.1501 so as to account for the source term and projected doses to the public.

b. Findings

No findings were identified.

.6 Groundwater Protection Initiative Implementation (02.06)

a. Inspection Scope

The inspectors reviewed monitoring results of the Groundwater Protection Initiative to determine if the licensee has implemented its program as intended, and to identify any anomalous results. For anomalous results or missed samples, the inspectors assessed whether the licensee has identified and addressed deficiencies through its CAP.

The inspectors reviewed identified leakage or spill events and entries made into 10 CFR 50.75 (g) records. The inspectors reviewed evaluations of leaks or spills, and reviewed any remediation actions taken for effectiveness. The inspectors reviewed onsite contamination events involving contamination of ground water and assessed whether the source of the leak or spill was identified and mitigated.

For unmonitored spills, leaks, or unexpected liquid or gaseous discharges, the inspectors assessed whether an evaluation was performed to determine the type and amount of radioactive material that was discharged by:

- Assessing whether sufficient radiological surveys were performed to evaluate the extent of the contamination and the radiological source term and assessing whether a survey/evaluation has been performed to include consideration of hard-to-detect radionuclides; and
- Determining whether the licensee completed offsite notifications, as provided in its Groundwater Protection Initiative implementing procedures.

The inspectors reviewed the evaluation of discharges from onsite surface water bodies that contain or potentially contain radioactivity, and the potential for ground water leakage from these onsite surface water bodies. The inspectors assessed whether the licensee is properly accounting for discharges from these surface water bodies as part of their effluent release reports.

The inspectors assessed whether on-site ground water sample results and a description of any significant on-site leaks/spills into ground water for each calendar year are documented in the Annual Radiological Environmental Operating Report for the radiological environmental monitoring program or the Annual Radiological Effluent Release Report for the radiological effluent TSs.

For significant, new effluent discharge points (such as significant or continuing leakage to ground water that continues to impact the environment if not remediated), the inspectors evaluated whether the ODCM was updated to include the new release point.

b. Findings

No findings were identified.

.7 Problem Identification and Resolution (02.07)

a. Inspection Scope

Inspectors assessed whether problems associated with the effluent monitoring and control program are being identified by the licensee at an appropriate threshold and are properly addressed for resolution in the licensee's CAP. In addition, they evaluated the appropriateness of the corrective actions for a selected sample of problems documented by the licensee involving radiation monitoring and exposure controls.

b. Findings

No findings were identified.

2RS7 Radiological Environmental Monitoring Program (71124.07)

This inspection constituted one complete sample as defined in IP 71124.07-05.

.1 Inspection Planning (02.01)

a. Inspection Scope

The inspectors reviewed the annual radiological environmental operating reports and the results of any licensee assessments since the last inspection to verify that the radiological environmental monitoring program was implemented in accordance with the TSs and ODCM. This review included report changes to the ODCM with respect to environmental monitoring, commitments in terms of sampling locations, monitoring and measurement frequencies, land use census, inter-laboratory comparison program, and analysis of data.

The inspectors reviewed the ODCM to identify locations of environmental monitoring stations.

The inspectors reviewed the FSAR for information regarding the environmental monitoring program and meteorological monitoring instrumentation.

The inspectors reviewed quality assurance audit results of the program to assist in choosing inspection “smart samples” and audits and technical evaluations performed on the vendor laboratory program.

The inspectors reviewed the annual effluent release report and the 10 CFR Part 61, “Licensing Requirements for Land Disposal of Radioactive Waste,” report to determine if the licensee is sampling, as appropriate, for the predominant and dose-causing radionuclides likely to be released in effluents.

b. Findings

No findings were identified.

.2 Site Inspection (02.02)

a. Inspection Scope

The inspectors walked down select air sampling stations and thermoluminescent dosimeter monitoring stations to determine whether they are located as described in the ODCM and to determine the equipment material condition. Consistent with smart sampling, the air sampling stations were selected based on the locations with the highest X/Q, D/Q wind sectors, and thermoluminescent dosimeters were selected based on the most risk-significant locations (e.g., those that have the highest potential for public dose impact).

For the air samplers and thermoluminescent dosimeters selected, the inspectors reviewed the calibration and maintenance records to verify that they demonstrate adequate operability of these components. Additionally, the review included the calibration and maintenance records of select composite water samplers.

The inspectors performed an assessment of whether the licensee has initiated sampling of other appropriate media upon loss of a required sampling station.

The inspectors observed the collection and preparation of environmental samples from different environmental media (e.g., ground and surface water, milk, vegetation, sediment, and soil) as available to verify that environmental sampling is representative of the release pathways as specified in the ODCM and that sampling techniques are in accordance with procedures.

Based on direct observation and review of records, the inspectors assessed whether the meteorological instruments were operable, calibrated, and maintained in accordance with guidance contained in the FSAR, NRC Regulatory Guide 1.23, “Meteorological Monitoring Programs for Nuclear Power Plants,” and licensee procedures. The inspectors assessed whether the meteorological data readout and recording instruments in the control room and, if applicable, at the tower were operable.

The inspectors evaluated whether missed and/or anomalous environmental samples were identified and reported in the annual environmental monitoring report.

The inspectors selected events that involved a missed sample; inoperable sampler; lost thermoluminescent dosimeter; or anomalous measurement to verify that the licensee has identified the cause and has implemented corrective actions. The inspectors reviewed the licensee’s assessment of any positive sample results

(i.e., licensed radioactive material detected above the lower limits of detection) and reviewed the associated radioactive effluent release data that was the source of the released material.

Inspectors selected SSCs that involve or could reasonably involve licensed material for which there is a credible mechanism for licensed material to reach ground water, and assessed whether the licensee has implemented a sampling and monitoring program sufficient to detect leakage of these SSCs to ground water.

The inspectors evaluated whether records, as required by 10 CFR 50.75(g), of leaks, spills, and remediation since the previous inspection are retained in a retrievable manner.

The inspectors reviewed any significant changes made by the licensee to the ODCM as the result of changes to the land census, long-term meteorological conditions (3-year average), or modifications to the sampler stations since the last inspection. They reviewed technical justifications for any changed sampling locations to verify that the licensee performed the reviews required to ensure that the changes did not affect its ability to monitor the impacts of radioactive effluent releases on the environment.

The licensee uses a vendor laboratory to analyze the radiological environmental monitoring program samples so the inspectors reviewed the results of the vendor's quality control program, including the inter-laboratory comparison, to assess the adequacy of the vendor's program.

The inspectors reviewed the results of the licensee's inter-laboratory comparison program to verify the adequacy of environmental sample analyses performed by the licensee. The inspectors assessed whether the inter-laboratory comparison test included the media/nuclide mix appropriate for the facility. If applicable, the inspectors reviewed the licensee's determination of any bias to the data and the overall effect on the radiological environmental monitoring program.

b. Findings

No findings were identified.

.3 Identification and Resolution of Problems (02.03)

a. Inspection Scope

The inspectors assessed whether problems associated with the radiological environmental monitoring program are being identified by the licensee at an appropriate threshold and are properly addressed for resolution in the licensee's CAP. Additionally, they assessed the appropriateness of the corrective actions for a selected sample of problems documented by the licensee that involved the radiological environmental monitoring program.

b. Findings

No findings were identified.

2RS8 Radioactive Solid Waste Processing and Radioactive Material Handling, Storage, and Transportation (71124.08)

This inspection constituted one complete sample as defined in IP 71124.08-05.

.1 Inspection Planning (02.01)

a. Inspection Scope

The inspectors reviewed the solid radioactive waste system description in the FSAR, the process control program, and the recent radiological effluent release report for information on the types, amounts, and processing of radioactive waste disposed.

The inspectors reviewed the scope of any quality assurance audits in this area since the last inspection to gain insights into the licensee's performance and inform the "smart sampling" inspection planning.

b. Findings

No findings were identified.

.2 Radioactive Material Storage (02.02)

a. Inspection Scope

The inspectors selected areas where containers of radioactive waste are stored, and evaluated whether the containers were labeled in accordance with 10 CFR 20.1904, "Labeling Containers," or controlled in accordance with 10 CFR 20.1905, "Exemptions to Labeling Requirements," as appropriate.

The inspectors assessed whether the radioactive material storage areas were controlled and posted in accordance with the requirements of 10 CFR Part 20, "Standards for Protection against Radiation." For materials stored or used in the controlled or unrestricted areas, the inspectors evaluated whether they were secured against unauthorized removal and controlled in accordance with 10 CFR 20.1801, "Security of Stored Material," and 10 CFR 20.1802, "Control of Material Not in Storage," as appropriate.

The inspectors evaluated whether the licensee established a process for monitoring the impact of long term storage (e.g., buildup of any gases produced by waste decomposition, chemical reactions, container deformation, loss of container integrity, or re-release of free-flowing water) that was sufficient to identify potential unmonitored, unplanned releases or nonconformance with waste disposal requirements.

The inspectors selected containers of stored radioactive material, and assessed for signs of swelling, leakage, and deformation.

b. Findings

No findings were identified.

.3 Radioactive Waste System Walkdown (02.03)

a. Inspection Scope

The inspectors walked down accessible portions of select radioactive waste processing systems to assess whether the current system configuration and operation agreed with the descriptions in the FSAR, ODCM, and process control program.

The inspectors reviewed administrative and/or physical controls (i.e., drainage and isolation of the system from other systems) to assess whether the equipment which is not in service or abandoned in place would not contribute to an unmonitored release path and/or affect operating systems or be a source of unnecessary personnel exposure. The inspectors assessed whether the licensee reviewed the safety significance of systems and equipment abandoned in place in accordance with 10 CFR 50.59, "Changes, Tests, and Experiments".

The inspectors reviewed the adequacy of changes made to the radioactive waste processing systems since the last inspection. The inspectors evaluated whether changes from what is described in the FSAR were reviewed and documented in accordance with 10 CFR 50.59, as appropriate, and to assess the impact on radiation doses to members of the public.

The inspectors selected processes for transferring radioactive waste resin and/or sludge discharges into shipping/disposal containers and assessed whether the waste stream mixing, sampling procedures, and methodology for waste concentration averaging were consistent with the process control program, and provided representative samples of the waste product for the purposes of waste classification as described in 10 CFR 61.55, "Waste Classification."

For those systems that provide tank recirculation, the inspectors evaluated whether the tank recirculation procedures provided sufficient mixing.

The inspectors assessed whether the licensee's process control program correctly described the current methods and procedures for dewatering and waste stabilization (e.g., removal of freestanding liquid).

b. Findings

No findings were identified.

.4 Waste Characterization and Classification (02.04)

a. Inspection Scope

The inspectors selected the following radioactive waste streams for review:

- dry active waste (drywell, condensate, steam chase, reactor water cleanup (RWCU), and (CA) plant smears);
- condensate resins; and
- RWCU resins.

For the waste streams listed above, the inspectors assessed whether the licensee's radiochemical sample analysis results (i.e., "10 CFR Part 61" analysis) were sufficient to support radioactive waste characterization as required by 10 CFR Part 61, "Licensing Requirements for Land Disposal of Radioactive Waste." The inspectors evaluated whether the licensee's use of scaling factors and calculations to account for difficult-to-measure radionuclides was technically sound and based on current 10 CFR Part 61 analyses for the selected radioactive waste streams.

The inspectors evaluated whether changes to plant operational parameters were taken into account to: (1) maintain the validity of the waste stream composition data between the annual or biennial sample analysis update; and (2) assure that waste shipments continued to meet the requirements of 10 CFR Part 61 for the waste streams selected above.

The inspectors evaluated whether the licensee had established and maintained an adequate quality assurance program to ensure compliance with the waste classification and characterization requirements of 10 CFR 61.55 and 10 CFR 61.56, "Waste Characteristics."

b. Findings

No findings were identified.

.5 Shipment Preparation (02.05)

a. Inspection Scope

The inspectors assessed whether the requirements of applicable transport cask certificate of compliance had been met. The inspectors evaluated whether the receiving licensee was authorized to receive the shipment packages. The inspectors evaluated whether the licensee's procedures for cask loading and closure procedures were consistent with the vendor's current approved procedures.

The inspectors assessed whether the shippers were knowledgeable of the shipping regulations and whether shipping personnel demonstrated adequate skills to accomplish the package preparation requirements for public transport with respect to:

- the licensee's response to NRC Bulletin 79-19, "Packaging of Low-Level Radioactive Waste for Transport and Burial," dated August 10, 1979; and
- Title 49 CFR Part 172, "Hazardous Materials Table, Special Provisions, Hazardous Materials Communication, Emergency Response Information, Training Requirements, and Security Plans," Subpart H, "Training."

Due to limited opportunities for direct observation, the inspectors reviewed the technical instructions presented to workers during routine training. The inspectors assessed whether the licensee's training program provided training to personnel responsible for the conduct of radioactive waste processing and radioactive material shipment preparation activities.

b. Findings

Introduction: A URI was identified because additional information was needed to assess the significance of an issue regarding shipping and transportation of a radioactively contaminated condensate demineralizer vessel.

Description: On July 14, 2011, it was reported to the licensee by the driver of the vehicle that there was a puncture in the side of a container package on radioactive material shipment number 11-127. The package was a Sealand box inside an enclosed conveyance. The Sealand box contained a radioactively contaminated condensate demineralizer vessel and the puncture was a nominal 4 by 6 inch hole. There was no spread of contamination as a result of the compromised package. The inspectors' initial review determined that a performance deficiency exists, in that, the shipping container contents was inappropriately braced and blocked for transport. Regulations require that licensees ensure that loads not shift under conditions normally incident to transportation. The inspectors will review the additional information provided by the licensee and determine the significance of the performance deficiency. (**URI 5000263/2011004-03; Shipping and Transportation of a Radioactively Contaminated Condensate Demineralizer Vessel**)

.6 Shipping Records (02.06)

a. Inspection Scope

The inspectors evaluated whether the shipping documents indicated the proper shipper name; emergency response information and a 24-hour contact telephone number; accurate curie content and volume of material; and appropriate waste classification, transport index, and UN number for the following radioactive shipments:

- shipment number 09-46;
- shipment number 10-11;
- shipment number 10-23;
- shipment number 10-35; and
- shipment number 11-127.

b. Findings

No findings were identified.

.7 Identification and Resolution of Problems (02.07)

a. Inspection Scope

The inspectors assessed whether problems associated with radioactive waste processing, handling, storage, and transportation, were being identified by the licensee at an appropriate threshold, were properly characterized, and were properly addressed for resolution in the licensee CAP. Additionally, the inspectors evaluated whether the corrective actions were appropriate for a selected sample of problems documented by the licensee that involve radioactive waste processing, handling, storage, and transportation.

The inspectors reviewed results of selected audits performed since the last inspection of this program and evaluated the adequacy of the licensee's corrective actions for issues identified during those audits.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

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

40A1 Performance Indicator Verification (71151)

.1 Mitigating Systems Performance Index - Emergency AC Power System

a. Inspection Scope

The inspectors sampled licensee submittals for the Mitigating Systems Performance Index (MSPI) - Emergency Alternating Current (AC) Power System PI for the period from the 3rd Quarter 2010 through the 2nd Quarter 2011. To determine the accuracy of the PI data reported during those periods, PI definitions and guidance contained in the Nuclear Energy Institute (NEI) Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, dated October 2009, were used. The inspectors reviewed the licensee's operator narrative logs, MSPI derivation reports, issue reports, event reports and NRC Integrated Inspection Reports for the period of July 2010 through June 2011 to validate the accuracy of the submittals. The inspectors reviewed the MSPI component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, that the change was in accordance with applicable NEI guidance. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the PI data collected or transmitted for this indicator and none were identified. Documents reviewed are listed in the Attachment to this report.

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

b. Findings

No findings were identified.

.2 Mitigating Systems Performance Index - High Pressure Injection Systems

a. Inspection Scope

The inspectors sampled licensee submittals for the MSPI - High Pressure Injection Systems PI for the period from 3rd Quarter 2010 through the 2nd Quarter 2011. To determine the accuracy of the PI data reported during those periods, PI definitions and guidance contained in the NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, dated October 2009, were used. The inspectors reviewed the licensee's operator narrative logs, issue reports,

MSPI derivation reports, event reports and NRC Integrated Inspection Reports for the period of July 2010 through July 2011 to validate the accuracy of the submittals. The inspectors reviewed the MSPI component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, that the change was in accordance with applicable NEI guidance. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the PI data collected or transmitted for this indicator and none were identified. Documents reviewed are listed in the Attachment to this report.

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

b. Findings

No findings were identified.

.3 Mitigating Systems Performance Index - Heat Removal System

a. Inspection Scope

The inspectors sampled licensee submittals for the MSPI - Heat Removal System PI for the period from the 3rd Quarter 2010 through the 2nd Quarter 2011. To determine the accuracy of the PI data reported during those periods, PI definitions and guidance contained in the NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, dated October 2009, were used. The inspectors reviewed the licensee's operator narrative logs, issue reports, event reports, MSPI derivation reports, and NRC Integrated Inspection Reports for the period of July 2010 through June 2011 to validate the accuracy of the submittals. The inspectors reviewed the MSPI component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, that the change was in accordance with applicable NEI guidance. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the PI data collected or transmitted for this indicator and none were identified. Documents reviewed are listed in the Attachment to this report.

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

b. Findings

No findings were identified.

.4 Reactor Coolant System Specific Activity

a. Inspection Scope

The inspectors sampled licensee submittals for the Reactor Coolant System Specific Activity PI for Monticello Nuclear Generating Plant (MNGP) for the period from the 4th Quarter 2010 through the 2nd Quarter 2011. The inspectors used PI definitions and guidance contained in the NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 6, dated October 2009, to determine the accuracy of the PI data reported during those periods. The inspectors reviewed the licensee's reactor

coolant system chemistry samples, TS requirements, issue reports, event reports and NRC Integrated Inspection Reports for the period of 4th Quarter 2010 through the 2nd Quarter 2011 to validate the accuracy of the submittals. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the PI data collected or transmitted for this indicator and none were identified. In addition to record reviews, the inspectors observed a chemistry technician obtain and analyze a reactor coolant system sample. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one reactor coolant system specific activity sample as defined in IP 71151-05.

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: identification of the problem was complete and accurate; timeliness was commensurate with the safety significance; evaluation and disposition of performance issues, generic implications, common causes, contributing factors, root causes, extent-of-condition reviews, and previous occurrences reviews were proper and adequate; and that the classification, prioritization, focus, and timeliness of corrective actions were commensurate with safety and sufficient to prevent recurrence of the issue. Minor issues entered into the licensee's CAP as a result of the inspectors' observations are included in the Attachment to this report.

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

b. Findings

No findings were identified.

.2 Daily Corrective Action Program Reviews

a. Inspection Scope

In order to assist with the identification of repetitive equipment failures and specific human performance issues for follow-up, the inspectors performed a daily screening of

items entered into the licensee's CAP. This review was accomplished through inspection of the station's daily condition report packages.

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

b. Findings

No findings were identified.

.3 Annual Sample: Review of Operator Workarounds

a. Inspection Scope

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

The inspectors performed a review of the cumulative effects of OWAs. The documents listed in the Attachment to this report were reviewed to accomplish the objectives of the inspection procedure. The inspectors reviewed both current and historical operational challenge records to determine whether the licensee was identifying operator challenges at an appropriate threshold, had entered them into their CAP, and had proposed or implemented appropriate and timely corrective actions which addressed each issue. Reviews were conducted to determine if any operator challenge could increase the possibility of an Initiating Event; if the challenge was contrary to training; required a change from long-standing operational practices; or created the potential for inappropriate compensatory actions. Additionally, temporary modifications were reviewed to identify any potential effect on the functionality of Mitigating Systems; impaired access to equipment; or required equipment uses for which the equipment was not designed. Daily plant and equipment status logs, degraded instrument logs, and operator aids or tools being used to compensate for material deficiencies were also assessed to identify any potential sources of unidentified OWAs.

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

b. Findings

No findings were identified.

.4 Selected Issue Follow-Up Inspection: Main Station Transformer Cooling Fan/Motor Degradation

a. Inspection Scope

During a review of items entered in the licensee's CAP, the inspectors recognized a corrective action item documenting an issue associated with degrading bearings on several of the main station transformer cooling fan motors. A preliminary evaluation of

the issue by the licensee determined that a pre-existing condition, prior to the installation of the main transformer during the spring 2011 refueling outage, may have impacted the bearings on all 24 cooling fan motors. The issue manifested itself when a fan motor seized, other motors were found not operating smoothly and running noisily, and rivets that were holding the fan blades to the motor hub were observed to be failing.

The immediate actions taken by the licensee to address this issue included determining the number of fan motors that were exhibiting degraded performance; affecting repairs to ensure that at least four cooling banks remained functional; increased monitoring of transformer operating parameters; and establishing trigger points where specific actions would be taken to prevent operating conditions which might result in damaging the transformer. Longer term corrective actions put in place by the licensee to address this issue included a plan for the eventual replacement of all 24 cooling fan motors.

The inspectors reviewed the licensee's extent of condition, operational risk assessment, operational decision-making evaluation, on-going maintenance efforts to repair degraded cooling fan motor and fan blades, and immediate and long-term corrective actions to address the issue. No issues of significance were identified by the inspectors during this inspection.

This review constituted one in-depth problem identification and resolution sample as defined in IP 71152-05.

b. Findings

No findings were identified.

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

.1 Nonroutine Evolution: 11 Condensate Pump Motor Thrust Bearing Replacement Activities

a. Inspection Scope

The inspectors reviewed, on two occasions, repair activities associated with the 11 condensate pump motor thrust bearing. The first replacement occurred during a planned downpower to approximately 45 percent on August 6 to 8, 2011, and the second replacement occurred during a planned downpower to approximately 45 percent on August 27 to August 30. As part of the inspection, the inspectors observed the control room staff during power manipulations, reviewed the adequacy of isolation for the work activities, and reviewed the licensee's corrective action documents associated with the degraded bearings. Documents reviewed in this inspection are listed in the Attachment to this report.

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

b. Findings

No findings were identified.

.2 (Closed) Licensee Event Report (LER) 05000263/2010-002-01:
Secondary Containment Briefly Degraded; Supplement 1

The licensee originally reported this event on June 3, 2010. This event was evaluated by the inspectors and the LER was closed in Inspection Report 05000363/2010005. On June 13, 2011, the licensee issued Supplement 1 to LER 050002010-002-00. The purpose of Supplement 1 was to document the results of a secondary containment capability test, which was performed on April 27, 2011. Based on the results of the test and subsequent engineering evaluation, the licensee concluded that secondary containment remained capable of performing its safety function in the plant configuration that existed on June 3, 2010, including considerations for penetrations that were or may have been open at that time. Based on the results of this test and engineering evaluation, the licensee concluded that since there was no loss of safety function, this event was not considered a safety system functional failure for the purposes of Reactor Oversight Process PI reporting per NEI 99-02.

The inspectors reviewed the test data and subsequent engineering evaluation which supported the licensee's position that the event did not constitute a loss of the secondary containment safety function. No findings of significance were identified during this inspection. Documents reviewed as part of this inspection are listed in the Attachment to this report. This LER is closed.

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

.3 (Closed) LER 05000263/2010-003-01: Secondary Containment Briefly Degraded;
Supplement 1

The licensee originally reported this event on August 5, 2010. This event was evaluated by the inspectors and the LER was closed in Inspection Report 05000363/2010005. On June 13, 2011, the licensee issued Supplement 1 to LER 05002010-003-00. The purpose of Supplement 1 was to document the results of a secondary containment capability test, which was performed on April 27, 2011. Based on the results of the test and subsequent engineering evaluation, the licensee concluded that secondary containment remained capable of performing its safety function in the plant configuration that existed on August 5, 2010, including considerations for penetrations that were or may have been open at that time. Based on the results of this test and engineering evaluation, the licensee concluded that since there was no loss of safety function, this event was not considered a safety system functional failure for the purposes of Reactor Oversight Process PI reporting per NEI 99-02.

The inspectors reviewed the test data and subsequent engineering evaluation which supported the licensee's position that the event did not constitute a loss of the secondary containment safety function. No findings of significance were identified during this inspection. Documents reviewed as part of this inspection are listed in the Attachment to this report. This LER is closed.

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

.4 LER 05000263/2007-005-01: Discovery of Appendix R – Non-Compliant Manual Actions During Review of National Fire Protection Association (NFPA) 805

The licensee issued LER 05000263/2007-005-00 regarding the use of operator manual actions in an Appendix R Section III.G.1/G.2 fire area. The LER was closed in Inspection Report 05000263/2007004 and documented as a licensee-identified violation of NRC requirements. Because the licensee was transitioning to NFPA 805 and the violation met the criteria established by the NRC's Interim Enforcement Policy Regarding Enforcement Discretion for Certain Fire Protection Issues (10 CFR Part 50.48(c)) for a licensee in NFPA 805 transition, the NRC exercised enforcement discretion to not cite the violation in accordance with the NRC's Enforcement Policy. On December 22, 2010, the licensee provided an update to LER 05000263/2007-005 to reflect their withdrawal of their letter of intent to voluntarily implement 10 CFR Part 50.48(c) at MNGP.

This LER revision was evaluated and closed during the Monticello 2011 Triennial Fire Protection Inspection. The closure documentation for this LER revision is located in Section 4OA3.1 of Inspection Report 05000263/2011008 (MNGP Triennial Fire Protection Inspection Report).

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

.5 (Closed) LER 05000263/2011-001-00: Reactor Vessel Overfill in Appendix R Scenario

On November 12, 2010, during a fire protection program assessment, the licensee discovered that the fire protection safe shutdown analysis did not address a postulated reactor vessel overfill event. During a potential fire, concurrent with a loss of offsite power, requiring the evacuation of the control room, both the HPCI and RCIC pumps would start if a low reactor water level setpoint was reached. Potential fire damage could result in the failure of the safety-related HPCI and RCIC high reactor water level trip circuitry leading to a reactor vessel overfill event. Specifically, level switches LS-2-3-672E (LIS) and LS 2-3-672F provide the high reactor water level trip signal. Fire damage to the switch circuitry could prevent the HPCI and RCIC high reactor water level trip, which would result in the reactor vessel overfill event. The event would continue until sufficient water filled the HPCI and RCIC steam lines to stall the HPCI and RCIC pumps. As a result of the water filled steam lines, when operations personnel manually open (i.e., lifts) the safety relief valves (SRVs) to allow for low pressure reactor water inventory makeup and decay heat removal, the SRVs may be subjected to high pressure steam/water flow.

Licensee Event Report 05000263/2011-001-01 was evaluated and closed during the Monticello 2011 Triennial Fire Protection Inspection. The closure documentation for this LER revision is located in Section 4OA3.2 of Inspection Report 05000263/2011008 (MNGP Triennial Fire Protection Inspection Report). The inspectors concluded that since LER 05000263/2011-001-01 only clarified information provided in the original LER submission, the technical evaluation used to close LER 05000263/2011-001-01 was of sufficient scope to also close the original LER.

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

.6 (Closed) LER 05000263/2011-003-00: Secondary Containment Damper Icing

On February 11, 2011, secondary isolation damper V-D-61 (reactor building outboard isolation damper) was discovered frozen closed due to ice buildup, with the actuator broken. The inboard damper, V-D-62, was found blocked partially open, again due to icing. The source of the icing was determined to be leakage from a heating coil collecting in the ventilation ducting which subsequently, due to outside temperatures significantly below freezing, froze when the ventilation system was placed in service. Upon discovery of the condition, the licensee entered the applicable TS action associated with a secondary containment ventilation penetration flow path with two inoperable isolation valves. Additionally, the licensee reported the event under 10 CFR 50.72(b)(3)(v)(C and D), events or conditions that at the time of discovery could have prevented fulfillment of a safety function.

Corrective actions taken by the licensee included removing the ice from the dampers, repairing the actuation linkage for damper V-D-61, and performing operational testing of V-D-61 and V-D-62. The licensee also performed additional testing on V-D-61 to ensure that the damper's secondary containment safety function would be maintained (it would remain closed) even with the damper actuation crank arm disconnected (similar to the as found condition for this event). The licensee's evaluation of this event concluded that at least one of the two isolation dampers for this secondary containment penetration would have remained closed, in the case where the isolation of secondary containment would have been required, and therefore the secondary containment safety function was not lost during this event.

The inspectors reviewed the licensee's evaluation of the event, test data, and subsequent engineering evaluation which supported the licensee's position that the event did not constitute a loss of the secondary containment safety function. No findings of significance were identified during this inspection. Documents reviewed as part of this inspection are listed in the Attachment to this report. This LER is closed.

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

.7 (Closed) LER 05000263/2011-004-00: Secondary Containment Inoperability Due to Ventilation Alignment Issue

On June 8, 2011, secondary containment was declared inoperable after operators swapped the operating refuel floor supply air handling unit from V-AH-4A to V-AH-4B. Secondary containment differential pressure reduced to .17 inches of water column vacuum, which did not meet TS requirements to maintain secondary containment vacuum greater than or equal to .25 inches of water column vacuum. Upon discovery of the condition, the licensee entered the applicable TS action associated with an inoperable secondary containment. Additionally, the licensee reported the event under 10 CFR 50.72(b)(3)(v)(C and D), events or conditions that at the time of discovery could have prevented fulfillment of a safety function.

The licensee determined that the cause of the event was a malfunctioning reheat bypass damper on V-AH-4A. This malfunctioning component caused significantly different flow rates between V-AH-4A and V-AH-4B, and required a significant adjustment to the reactor building exhaust fan variable inlet vane settings to maintain the reactor building greater than .25 inches water column vacuum the previous time (June 5, 2011) V-AH-4A was placed in service. On June 8, 2011, when swapping from V-AH-4A to

V-AH-4B, before the reactor building exhaust fan variable inlet vanes could be adjusted, secondary differential pressure changed from 0.6 inches of water column vacuum to .17 inches of water column vacuum. Once identified, the licensee immediately restored V-AH-4A to service, restoring secondary containment differential pressure in excess of .25 inches water column vacuum. Other corrective actions taken by the licensee included repair of the reheat bypass damper and implementation of a change to the operating procedure used to transfer between V-AH-4A and V-AH-4B to provide additional guidance to account for the differences in flowrates supplied by each reactor building supply fan.

The inspectors reviewed the licensee's assessment of the event, subsequent corrective actions, and engineering evaluation which supported the licensee's position that the event did not constitute a loss of the secondary containment safety function. No findings of significance were identified during this inspection. Documents reviewed as part of this inspection are listed in the Attachment to this report. This LER is closed.

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

.8 (Closed) LER 05000263/2011-005-00: Power Range Monitor Channels Out of Alignment

On June 30, 2011, with the reactor operating at 80 percent power, three of the four average power range monitors (APRMs) exceeded the TS requirement to maintain the absolute difference between each APRM channel and the calculated power at less than or equal to 2 percent rated thermal power while operating at equal or greater than 25 percent rated thermal power. Upon discovery of the condition, the licensee entered the applicable TS actions associated with inoperable reactor protection system instrumentation channels. Additionally, the licensee reported the event under 10 CFR 50.72(b)(3)(v)(A and D), events or conditions that at the time of discovery could have prevented fulfillment of a safety function.

The licensee concluded that, even though the three APRM channels were inoperable per TSs, since two of the three affected APRMs exceeded the 2 percent power deviation in the conservative direction, the APRM safety function was preserved since a reactor scram would have initiated at a lower power level than required. Corrective actions proposed by the licensee to address the causes of the event included developing a process to enable the site to better predict APRM response due to changes in power profiles during reactivity maneuvers and revising their reactivity adjustment procedure to better identify, communicate, and prevent reactivity adjustments that could lead to multiple APRMs exceeding their maximum allowed power deviations.

The inspectors reviewed the licensee's assessment of the event, subsequent corrective actions, and engineering evaluation which supported the licensee's position that the event did not constitute a loss of the safety function associated with reactor protection instrumentation inputs related to the APRMs. No findings of significance were identified during this inspection. Documents reviewed as part of this inspection are listed in the Attachment to this report. This LER is closed.

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

.9 Notice of Enforcement Discretion (NOED) 11-3-001: Monticello TS 3.8.1 Emergency Diesel Generator Load Rejection Surveillance Requirement Issue

On September 27, 2011, during an engineering self-assessment, the licensee identified a potential issue associated with the testing methodology used to demonstrate each EDG's capability to withstand the rejection of an electrical load that is equivalent to the single largest post-accident electrical load. On September 29, 2011, the licensee verified that their existing surveillance test OSP-ECC-0566, "Low Pressure ECCS [emergency core cooling system] Automatic Initiation and Loss of Auxiliary power Test," Revision 8, did not ensure that the load rejection test was performed with sufficient load to satisfy the requirements of SR 3.8.1.7 (Verify each EDG rejects a load greater than or equal to its associated single largest post-accident load and, following load rejection, the frequency is less than or equal to 67.5 Hz.). On September 29, 2011, at approximately 1700, the licensee declared both 11 and 12 EDGs inoperable and entered the Action for TS 3.8.1.E, "Two EDGs Inoperable." At approximately 2200, the licensee requested enforcement discretion to extend the Action Completion Time for TS 3.8.1.F, from twelve hours to five days, to allow time to perform the required EDG load rejection testing. At approximately 23:58, the Agency granted NOED 11-3-001.

The inspector's evaluation of the issue included a review of the technical documents associated with the issue and several meetings with the licensee management and technical staff. The initial information gained by the inspectors and their assessment of the issue was communicated to senior agency managers well in advance of the licensee's NOED request, significantly contributing to the Agency's understanding and appropriate disposition of the issue. Additional information associated with the inadequate surveillance procedure and EDG operability is documented in Section 1R15 of this report.

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

4OA5 Other Activities

.1 Operation of an Independent Spent Fuel Storage Facility Installation (ISFSI) at Operating Plants (60855.1)

a. Operations of an ISFSI

Inspection Scope

The inspectors observed and evaluated the licensee's ISFSI program to verify compliance with the applicable Certificate of Compliance (CoC) conditions, TSs, and procedures.

The inspectors reviewed procedure changes related to ISFSI cask loading, movement, surveillance, and maintenance.

A tour was conducted of the ISFSI pad to assess the condition of the ISFSI. No flammable or combustible materials were observed inside the ISFSI cask storage area, and inspectors reviewed evaluations of flammable materials outside the ISFSI area. Inspectors independently reviewed environmental radiation levels around the ISFSI, and reviewed the licensee's radiation monitoring program for the ISFSI.

In addition, the inspectors reviewed a number of condition reports and the associated follow up actions since the last ISFSI inspection. The inspectors reviewed 10 CFR 72.48 screenings and evaluations and changes to the licensee's 10 CFR 72.212 report.

b. Findings

No findings were identified.

4OA6 Management Meetings

.1 Exit Meeting Summary

On October 6, 2011, 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:

- Radiological Environmental Monitoring Program and the Performance Indicator Verification for Barrier Integrity for Reactor Coolant System Dose Equivalent Iodine with Mr. Timothy O'Connor, the Site-Vice President, on August 19, 2011.
- Radiological Hazard Assessment and Exposure Controls; Occupational ALARA Planning and Controls; Radioactive Gaseous and Liquid Effluent Treatment; and Radioactive Solid Waste Processing and Radioactive Material Handling, Storage, and Transportation; with Mr. Timothy O'Connor, the Site-Vice President, on September 16, 2011.
- The operation of an ISFSI Inspection conducted an interim exit meeting on September 23, 2011. The inspectors presented the inspection results to members of the licensee management and staff. Licensee personnel acknowledged the information presented.
- Radioactive Solid Waste Processing and Radioactive Material Handling, Storage, and Transportation; telephone update with Ms. S. O'Connor, Regulatory Affairs Analyst, on September 29, 2011.

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

4OA7 Licensee-Identified Violations

None.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

T. O'Connor, Site Vice President
J. Grubb, Plant Manager
W. Paulhardt, Operations Manager
N. Haskell, Site Engineering Director
K. Jepson, Assistant Plant Manager
S. Radebaugh, Maintenance Manager
M. Holmes, Chemistry Manager
A. Zelig, Radiation Protection Manager
P. Kissinger, Regulatory Affairs Manager

Nuclear Regulatory Commission

K. Riemer, Chief, Reactor Projects Branch 2

LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

Opened

05000263/2011004-01	URI	NOED for Emergency Diesel Generator Load Rejection Surveillance Requirement 3.8.1.7 (Section 1R15)
05000263/2011004-02	NCV	Failure to Follow Emergency Diesel Generator Quarterly Surveillance Procedure (Section 1R22)
05000263/2011004-03	URI	Shipping and Transportation of a Radioactively Contaminated Condensate Demineralizer Vessel (Section 2RS8)

Closed

05000263/2011004-02	NCV	Failure to Follow Emergency Diesel Generator Quarterly Surveillance Procedure (Section 1R22)
05000263/2011-001-00	LER	Reactor Vessel Overfill in Appendix R Scenario (Section 4OA3.5)
05000263/2011-003-00	LER	Secondary Containment Damper Icing (Section 4OA3.6)
05000263/2011-004-00	LER	Secondary Containment Inoperability Due to Ventilation Alignment Issue (Section 4OA3.7)
05000263/2011-005-00	LER	Power Range Monitor Channels Out of Alignment (Section 4OA3.8)
05000263/2010-002-01	LER	Secondary Containment Briefly Degraded; Supplement 1 (Section 4OA3.2)
05000263/2010-003-01	LER	Secondary Containment Briefly Degraded; Supplement 1 (Section 4OA3.3)

Discussed

05000263/2007-005-01	LER	Discovery of Appendix R – Non-Compliant Manual Actions During Review of NFPA 805 (Section 4OA3.4)
05000263/2011-001-01	LER	Reactor Vessel Overfill in Appendix R Scenario; Supplement 1 (Section 4OA3.5)

LIST OF DOCUMENTS REVIEWED

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

Section 1R04

2154-10; HPCI System Prestart Valve Checklist; Revision 30
2118; Plant Prestart Checklist HPCI System; Revision 15
2154-35; HPCI Hydraulic Control and Lubrication System Prestart Valve Checklist; Revision 8
Operations Manual B.03.02-01; HPCI: Function and General Description of System; Revision 9
NH-36250; P&ID (Water Side) HPCI System; Revision 79
NH-36249; P&ID (Steam Side) HPCI System; Revision 78
CAP 01299449; P-212 Packing Leak and Drip Pan Clogged
CAP 01173452; HPCI P-212 Drip Tray Appears Clogged
CAP 01299327; HPCI/RCIC Steam Trap Temps above Expected Band
2201; Plant Prestart Checklist CRV-EFT [Emergency Filtration Train] System; Revision 8
Operations Manual B.08.13-05; Control Room H&V [Heating and Ventilation] and EFT:
System Operation; Revision 19
Operations Manual B.08.13-01; Control Room H&V and EFT: Function and General
Description of System; Revision 10
NH-170037; Main Control Room CRV/EFT System; Revision 80
2154-34; ESW System Prestart Valve Checklist; Revision 26
2200; Plant Prestart Checklist ESW System; Revision 2
Operations Manual B.08.01.04-05; ESW: System Operation; Revision 22
Operations Manual B.08.01.04-01; ESW: Function and General Description of System;
Revision 5
NH-36665; P&ID Service Water System & Make-Up Intake Structure; Revision 94
NH-36041; P&ID Service Water System; Revision 93
Station Logs; August 17, 2011
2154-14; Fuel Oil Prestart Valve Checklist; Revision 16
2124; Plant Prestart Checklist Diesel Generators and Fuel Oil System; Revision 8
2154-28; Diesel Generator Air Start System Prestart Valve Checklist; Revision 9
NH-36051; Diesel Oil System; Revision 77
NH-36664; RHR Service Water and ESW Systems; Revision 85
2154-11; Core Spray System Prestart Checklist; Revision 18
2154-26; Drywell Prestart Valve Checklist; Revision 46
Operations Manual B.03.01-01; Core Spray Cooling System- Function and General
Description of System; Revision 6
Operations Manual B.03.01-02; Core Spray Cooling System – Description of Equipment;
Revision 9
Operations Manual B.03.01-05; Core Spray Cooling System – System Operation; Revision 31
NH-36248; Core Spray System; Revision 79
NH-36664; RHR Service Water and ESW Systems; Revision 85

Section 1R05

CAP 01297517; NRC Identified Transient Combustibles in A/B RHR Pump Room
CAP 01297521; NRC Identified a Pre-Fire Strategy Question
CAP 01297667; Strategy A.3-01-C FZ 1-C RCIC Room
OWI 02.03; Operator Rounds; Revision 16
Pre-Fire Strategy A.3-01-A; Fire Zone 1-A; No. 12 RHR and Core Spray Pump Room
Pre-Fire Strategy A.3-01-B; Fire Zone 1-B; No. 11 RHR and Core Spray Pump Room
Pre-Fire Strategy A.3-01-C; Fire Zone 1-C; RCIC Room
Pre-Fire Strategy A.3-01-E; Fire Zone 1-E; HPCI Room
Pre-Fire Strategy A.3-23-B; Fire Zone 23-B; Intake Corridor
Station Logs; August 3, 2011
USAR Appendix J.5; Fire Protection Program; Updated Fire Hazards Analysis; Revision 26
A.3-23-B; Pre-Fire Strategies; Revision 6
Pre-Fire Strategy A.3-13-B; RFP and LO Reservoir Area; Revision 11
Pre-Fire Strategy A.3-13-C; Turbine Building (911' Elevation E. MCC [Motor Control Center] Area); Revision 7
2176; Fire Drill Procedure; Revision 21
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NUH-06-106M; Certificate of Conformance, OS197-1 On-Site Transfer Cask and Lifting Yoke;
July 29, 2008
NUHOMS Cask Number 1 Loading Report
TN NCR 2008-221; Certificate of Conformance HUHOMS-61BT Dry Shielded Canister (Repair);
Revision 0

LIST OF ACRONYMS USED

AC	Alternating Current
ADAMS	Agencywide Document Access Management System
ALARA	As-Low-As-Is-Reasonably-Achievable
APRM	Average Power Range Monitor
CAP	Corrective Action Program
CFR	Code of Federal Regulations
CoC	Certificate of Compliance
CRV	Control Room Ventilation
DRP	Division of Reactor Projects
ECCS	Emergency Core Cooling System
EDG	Emergency Diesel Generator
ESW	Emergency Service Water
FSAR	Final Safety Analysis Report
HPCI	High Pressure Coolant Injection
HRA	High Radiation Area
IMC	Inspection Manual Chapter
IP	Inspection Procedure
ISFSI	Independent Spent Fuel Storage Facility Installation
IST	Inservice Test
kV	Kilovolt
LER	Licensee Event Report
LCO	Limiting Condition for Operation
MG	Motor Generator
MNGP	Monticello Nuclear Generating Plant
MSPI	Mitigating Systems Performance Indicator
NCV	Non-Cited Violation
NEI	Nuclear Energy Institute
NFPA	National Fire Protection Association
NOED	Notice of Enforcement Discretion
NRC	U.S. Nuclear Regulatory Commission
ODCM	Offsite Dose Calculation Manual
OWA	Operator Workaround
PARS	Publicly Available Records System
PI	Performance Indicator
PM	Post Maintenance
RCA	Radiological Controlled Area
RCIC	Reactor Core Isolation Cooling
RHR	Residual Heat Removal
RWCU	Reactor Water Cleanup
SBLC	Standby Liquid Control
SDP	Significance Determination Process
SRV	Safety Relief Valve
SSC	Structure, System, and Component
TS	Technical Specification
USAR	Updated Safety Analysis Report
URI	Unresolved Item
VHRA	Very High Radiation Area
WO	Work Order

T. O'Connor

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Sincerely,

/RA/

Kenneth Riemer, Chief
Branch 2
Division of Reactor Projects

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SUBJECT: MONTICELLO NUCLEAR GENERATING PLANT INTEGRATED INSPECTION
REPORT 05000263/2011004

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