UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION III
2443 WARRENVILLE ROAD, SUITE 210
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January 30, 2009

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

SUBJECT: MONTICELLO NUCLEAR GENERATING PLANT
NRC INTEGRATED INSPECTION REPORT 05000263/2008005

Dear Mr. O'Connor:

On December 31, 2008, the U.S. Nuclear Regulatory Commission (NRC) completed an integrated inspection at your Monticello Nuclear Generating Plant. The enclosed report documents the inspection findings, which were discussed on January 7, 2009, with Mr. Sawatzke and other members of your staff.

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

Based on the results of this inspection, there were no findings of significance identified.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system

(ADAMS), accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA by N. Shah, Acting for/

Kenneth Riemer, Chief
Branch 2
Division of Reactor Projects

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

Enclosure: Inspection Report 05000263/2008005
w/Attachment: Supplemental Information

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

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Letter to T. O'Connor from K. Riemer dated January 30, 2009

SUBJECT: MONTICELLO NUCLEAR GENERATING PLANT
NRC INTEGRATED INSPECTION REPORT 05000263/2008005

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No:	50-263
License No:	DPR-22
Report No:	05000263/2008005
Licensee:	Northern States Power Company, Minnesota
Facility:	Monticello Nuclear Generating Plant
Location:	Monticello, MN
Dates:	October 1 through December 31, 2008
Inspectors:	S. Thomas, Senior Resident Inspector L. Haeg, Resident Inspector T. Go, Radiation Specialist B. Winter, Reactor Inspector P. Zurawski, Prairie Island Resident Inspector D. McNeil, Senior Operations Engineer S. Bakhsh, Reactor Inspector M. Learn, Reactor Engineer R. Jickling, Senior Emergency Preparedness Inspector
Approved by:	K. Riemer, Chief Branch 2 Division of Reactor Projects

Enclosure

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SUMMARY OF FINDINGS

IR 05000263/2008005; 10/01/2008 – 12/31/2008; Monticello Nuclear Generating Plant; Routine Integrated Inspection Report.

This report covers a three-month period of inspection by resident inspectors and announced baseline inspections by regional inspectors. 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

No violations of significance were identified.

B. Licensee-Identified Violations

No violations of significance were identified.

REPORT DETAILS

Summary of Plant Status

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

1. REACTOR SAFETY

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

1R01 Adverse Weather Protection (71111.01)

.1 Winter Seasonal Readiness Preparations

a. Inspection Scope

The inspectors conducted a review of the licensee's preparations for winter conditions to verify that the plant's design features and implementation of procedures were sufficient to protect mitigating systems from the effects of adverse weather. Documentation for selected risk-significant systems was reviewed to ensure that these systems would remain functional when challenged by inclement weather. During the inspection, the inspectors focused on plant specific design features and the licensee's procedures used to mitigate or respond to adverse weather conditions. Additionally, the inspectors reviewed the Updated Safety Analysis Report (USAR) and performance requirements for systems selected for inspection, and verified that operator actions were appropriate as specified by plant specific procedures. Cold weather protection, such as heat tracing and area heaters, was verified to be in operation where applicable. The inspectors also reviewed corrective action program (CAP) items to verify that the licensee was identifying adverse weather issues at an appropriate threshold and entering them into their CAP in accordance with station corrective action procedures. Specific documents reviewed during this inspection are listed in the Attachment. The inspectors' review focused specifically on the plant heating boiler and cooling tower systems due to their risk significance (Initiating Event potential) and susceptibility to cold weather issues.

This inspection constituted one winter seasonal readiness preparations sample as defined in Inspection Procedure (IP) 71111.01-05.

b. Findings

No findings of significance were identified.

.2 Readiness For Impending Adverse Weather Condition – High Wind Conditions

a. Inspection Scope

Since high winds were forecast in the vicinity of the facility for November 7, 2008, the inspectors reviewed the licensee's overall preparations/protection for the expected weather conditions. On November 6, 2008, the inspectors walked down protected plant

areas in addition to the licensee's emergency alternating current (AC) power systems, because their safety-related functions could be affected or required as a result of high winds or the loss of offsite power. The inspectors evaluated the licensee's preparations against the site's procedures and determined that the actions were adequate. During the inspection, the inspectors focused on plant specific design features and the licensee's procedures used to respond to the expected adverse weather conditions. The inspectors also toured the plant grounds to look for any loose debris that could become missiles during high winds. The inspectors verified that operator actions to respond to the expected adverse weather conditions were appropriate as specified by plant specific procedures. The inspectors also reviewed a sample of CAP items to verify that the licensee identified adverse weather issues at an appropriate threshold and dispositioned them through the CAP in accordance with station corrective action procedures. Specific documents reviewed during this inspection are listed in the Attachment.

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

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment (71111.04)

.1 Quarterly Partial System Walkdowns

a. Inspection Scope

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

- No. 11 emergency diesel generator (EDG)-emergency service water (ESW) system with No. 12 EDG out-of-service for preventative maintenance (PM);
- control rod drive (CRD) system with reactor core isolation cooling (RCIC) out-of-service for PM;
- No. 11 core spray system during routine testing of No. 12 core spray system;

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

CAP with the appropriate significance characterization. Documents reviewed are listed in the Attachment.

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

b. Findings

No findings of significance were identified.

.2 Semi-Annual Complete System Walkdown

a. Inspection Scope

On December 15, 2008, the inspectors performed a complete system alignment inspection of the RCIC system to verify the functional capability of the system. This system was selected because it was considered both safety-significant and risk-significant in the licensee's probabilistic risk assessment. The inspectors walked down the system to review mechanical and electrical equipment line ups, electrical power availability, system pressure and temperature indications, as appropriate, component labeling, component lubrication, component and equipment cooling, hangers and supports, operability of support systems, and to ensure that ancillary equipment or debris did not interfere with equipment operation. A review of a sample of past and outstanding WOs was performed to determine whether any deficiencies significantly affected the system function. In addition, the inspectors reviewed the CAP database to ensure that system equipment alignment problems were being identified and appropriately resolved. Documents reviewed are listed in the Attachment.

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

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)

.1 Routine Resident Inspector Tours (71111.05Q)

a. Inspection Scope

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

- Fire Zone 19-A (make-up demineralizer area);
- Fire Zones 19-B, C (essential motor control center (MCC) area, feedwater pipe chase);
- Fire Zone 32-B (emergency filtration train (EFT) building second floor, Division II);

- Fire Zone 17 (turbine building north cable corridor 941'); and
- Fire Zone 16 (corridor, turbine building east and west, elevations 911' and 931').

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

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

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification Program (71111.11)

.1 Resident Inspector Quarterly Review (71111.11Q)

a. Inspection Scope

On November 10, 2008, the inspectors observed a crew of licensed operators in the plant's simulator during licensed operator requalification examinations to verify that operator performance was adequate, evaluators were identifying and documenting crew performance problems, and training was being conducted in accordance with licensee procedures. The inspectors evaluated the following areas:

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

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

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

b. Findings

No findings of significance were identified.

.2 Annual Operating Test Results (71111.11B)

a. Inspection Scope

The inspectors reviewed the overall pass/fail results of the biennial written examination, the individual Job Performance Measure operating tests, and the simulator operating tests (required to be given per 10 CFR 55.59(a)(2)) administered by the licensee from November 2008 through December 2008 as part of the licensee's operator licensing requalification cycle. These results were compared to the thresholds established in IMC 0609, Appendix I, "Licensed Operator Requalification SDP." The evaluations were also performed to determine if the licensee effectively implemented operator requalification guidelines established in NUREG 1021, "Operator Licensing Examination Standards for Power Reactors," IP 71111.11, "Licensed Operator Requalification Program." The documents reviewed during this inspection are listed in the Attachment.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12)

.1 Routine Quarterly Evaluation (71111.12Q)

a. Inspection Scope

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

- reactor core isolation cooling system.

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

- implementing appropriate work practices;
- identifying and addressing common cause failures;
- scoping of systems in accordance with 10 CFR 50.65(b) of the maintenance rule;
- charging unavailability for performance;
- trending key parameters for condition monitoring;

- ensuring 10 CFR 50.65(a)(1) or (a)(2) classification or re-classification; and
- verifying appropriate performance criteria for structures, systems, and components (SSCs)/functions classified as (a)(2) or appropriate and adequate goals and corrective actions for systems classified as (a)(1).

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

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

b. Findings

No findings of significance were identified.

1R13 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:

- No. 11 EDG low turbo oil pressure annunciator relay failure during PM;
- No. 13A feedwater heater drain valve level transmitter failure emergent work;
- steam leak on CV-4174A (11 RFP H2 HX drag valve);
- 1R transformer supply breakers to 4 kV busses have dual indications; and
- 2R transformer bushing resistance identified following replacement.

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

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

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

.1 Operability Evaluations

a. Inspection Scope

The inspectors reviewed the following issues:

- Division I control room ventilation air conditioning unit refrigerant leak;
- safety relief valve low low set permissive relay environmental qualification; and
- inadequate shutdown margin during end-of-cycle core alterations.

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

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

b. Findings

No findings of significance were identified.

1R18 Plant Modifications (71111.18)

.1 Permanent Plant Modifications

a. Inspection Scope

The following engineering design package was reviewed and selected aspects were discussed with engineering personnel:

- Engineering Change (EC) 12044 (CRD scram solenoid pilot valve replacement).

This document and related documentation were reviewed for adequacy of the associated 10 CFR 50.59 safety evaluation screening, consideration of design parameters, implementation of the modification, post-modification testing, and relevant procedures, design, and licensing documents were properly updated. The modification will replace the two scram solenoid valves on each hydraulic control unit (HCU) with a single three-way dual piloted solenoid valve during the upcoming spring Refueling Outage.

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

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)

.1 Surveillance Testing

a. Inspection Scope

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

- 0255-17-IA-5; alternate nitrogen system train 'A' valve test (routine);
- 0472-01; control room ventilation (CRV)-EFT pressurization test (routine);
- 0533; containment sump flow measurement instrumentation (reactor coolant system (RCS) leakage detection);
- 0255-04-III-1A; residual heat removal (RHR) comprehensive pump and valve tests (inservice test);
- 0255-03-III-1A; core spray comprehensive pump and valve tests (routine); and
- 0255006-III-1; high pressure core injection (HPCI) comprehensive pump and valve tests (routine).

The inspectors observed inplant activities and reviewed procedures and associated records to determine whether: any preconditioning occurred; effects of the testing were adequately addressed by control room personnel or engineers prior to the commencement of the testing; acceptance criteria were clearly stated, demonstrated operational readiness, and were consistent with the system design basis; plant equipment calibration was correct, accurate, and properly documented; as-left setpoints were within required ranges; and the calibration frequency were in accordance with TSs, the USAR, procedures, and applicable commitments; measuring and test equipment calibration was current; test equipment was used within the required range and accuracy; applicable prerequisites described in the test procedures were satisfied; test frequencies met TS requirements to demonstrate operability and reliability; tests were performed in accordance with the test procedures and other applicable procedures; jumpers and lifted leads were controlled and restored where used; test data and results were accurate, complete, within limits, and valid; test equipment was removed after testing; where applicable for inservice testing activities, testing was performed in accordance with the applicable version of Section XI, American Society of Mechanical Engineers (ASME) Code, and reference values were consistent with the system design basis; where applicable, test results not meeting acceptance criteria were addressed with an adequate operability evaluation or the system or component was declared inoperable; where applicable for safety-related instrument control surveillance tests, reference setting data were accurately incorporated in the test procedure; where applicable, actual conditions encountering high resistance electrical contacts were such that the intended safety function could still be accomplished; prior procedure changes

had not provided an opportunity to identify problems encountered during the performance of the surveillance or calibration test; equipment was returned to a position or status required to support the performance of its safety functions; and all problems identified during the testing were appropriately documented and dispositioned in the CAP. Documents reviewed are listed in the Attachment to this report.

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

b. Findings

No findings of significance were identified.

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

.1 Emergency Action Level and Emergency Plan Changes

a. Inspection Scope

Since the last NRC inspection of this program area, Emergency Plan, Revision 31 and implementing Procedure A.2-101, "Classification of Emergencies," Revisions 39 and 40, were implemented based on your determination, in accordance with 10 CFR 50.54(q), that the changes resulted in no decrease in effectiveness of the Plan, and that the revised Plan as changed continues to meet the requirements of 10 CFR 50.47(b) and Appendix E to 10 CFR Part 50. The inspectors conducted a sampling review of the Emergency Plan changes and a review of the Emergency Action Level changes to evaluate for potential decreases in effectiveness of the Emergency Plan. However, this review does not constitute formal NRC approval of the changes. Therefore, these changes remain subject to future NRC inspection in their entirety.

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

b. Findings

No findings of significance were identified

1EP6 Drill Evaluation (71114.06)

.1 Emergency Preparedness Drill Observation

a. Inspection Scope

The inspectors evaluated the conduct of a routine licensee emergency tabletop drill on November 12, 2008, to identify any weaknesses and deficiencies in notification and protective action recommendation development activities. The inspectors observed emergency response operations in the Emergency Offsite Facility (EOF) to determine whether the event notifications and protective action recommendations were performed in accordance with procedures. The inspectors also attended the licensee drill critique to compare any inspector-observed weakness with those identified by the licensee staff

in order to evaluate the critique and to verify whether the licensee staff was properly identifying weaknesses and entering them into the corrective action program. As part of the inspection, the inspectors reviewed the tabletop drill package and other documents listed in the Attachment to this report.

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

b. Findings

No findings of significance were identified.

.2 Training Observation

a. Inspection Scope

The inspector observed a simulator training evolution for licensed operators on November 24, 2008, which required emergency plan implementation by a licensee operations crew. This evolution was planned to be evaluated and included in performance indicator (PI) data regarding drill and exercise performance. The inspectors observed event classification and notification activities performed by the crew. The inspectors also attended the post-evolution critique for the scenario. The focus of the inspectors' activities was to note any weaknesses and deficiencies in the crew's performance and ensure that the licensee evaluators noted the same issues and entered them into the CAP. As part of the inspection, the inspectors reviewed the scenario package and other documents listed in the Attachment to this report.

This training inspection constituted one sample as defined in IP 71114.06-05.

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety

2OS1 Access Control to Radiologically Significant Areas (71121.01)

.1 Review of Licensee Performance Indicators for the Occupational Exposure Cornerstone

a. Inspection Scope

The inspectors reviewed the licensee's Occupational Exposure Control Cornerstone PI to determine whether the conditions resulting in any PI occurrences had been evaluated and whether identified problems had been entered into the licensee's CAP for resolution.

This inspection constitutes one sample as defined in IP 71121.01-05.

b. Findings

No findings of significance were identified.

.2 Plant Walkdowns and Radiation Work Permit (RWP) Reviews

a. Inspection Scope

The inspectors reviewed licensee controls and surveys in the following radiologically significant work areas within radiation areas, high radiation areas (HRA), and airborne radioactivity areas in the plant to determine if radiological controls including surveys, postings, and barricades were acceptable:

- independent spent fuel storage installation (ISFSI) – dry fuel storage – fuel loading and storage activities;
- HRA – cask removal from spent fuel pool and fuel transport container;
- reactor building and ISFSI pad activities; and
- change No. 12 recirculation pump seals and associated activities.

This inspection constitutes one sample as defined in IP 71121.01-05.

The inspectors reviewed RWPs for airborne radioactivity areas to verify barrier integrity and engineering controls performance (e.g., high-efficiency particulate air ventilation system operation) and to determine if there was a potential for individual worker internal exposures in excess of 50 millirem committed effective dose equivalent. Specifically, the inspectors reviewed the licensee's controls and postings for a room at elevation 985' in the reactor building radioactive waste pump room.

Work areas having a history of, or the potential for, airborne transuranics were evaluated to verify that the licensee had considered the potential for transuranic isotopes and had provided appropriate worker protection.

This inspection constitutes one sample as defined in IP 71121.01-05.

The inspectors assessed the adequacy of the licensee's internal dose assessment process for internal exposures in excess of 50 millirem committed effective dose equivalent. There were no internal exposures greater than 50 millirem committed effective dose equivalent during the inspection period.

This inspection constitutes one sample as defined in IP 71121.01-05.

The inspectors also reviewed the licensee's physical and programmatic controls for highly activated and/or contaminated materials (non-fuel) stored within the spent fuel pool or other storage pools.

This inspection constitutes one sample as defined in IP 71121.01-05.

b. Findings

No findings of significance were identified.

.3 Problem Identification and Resolution

a. Inspection Scope

The inspectors reviewed a sample of the licensee's self-assessments, audits, licensee event reports (LERs), and Special Reports related to the access control program to verify that identified problems were entered into the CAP for resolution.

This inspection constitutes one sample as defined in IP 71121.01-05.

The inspectors reviewed corrective action reports related to access controls and any HRA radiological incidents (issues that did not count as PI occurrences identified by the licensee in HRAs less than 1R/hr). Staff members were interviewed and corrective action documents were reviewed to verify that follow-up activities were being conducted in an effective and timely manner commensurate with their importance to safety and risk based on the following:

- initial problem identification, characterization, and tracking;
- disposition of operability/reportability issues;
- evaluation of safety significance/risk and priority for resolution;
- identification of repetitive problems;
- identification of contributing causes;
- identification and implementation of effective corrective actions;
- resolution of non-cited violations (NCVs) tracked in the corrective action system; and
- implementation/consideration of risk significant operational experience feedback.

This inspection constitutes one sample as defined in IP 71121.01-05.

The inspectors evaluated the licensee's process for problem identification, characterization, and prioritization and verified that problems were entered into the CAP and resolved. For repetitive deficiencies and/or significant individual deficiencies in problem identification and resolution, the inspectors verified that the licensee's self-assessment activities were capable of identifying and addressing these deficiencies.

This inspection constitutes one sample as defined in IP 71121.01-05.

The inspectors reviewed licensee documentation packages for all PI events occurring since the last inspection to determine if any of these PI events involved dose rates in excess of 25 R/hr at 30 centimeters or in excess of 500 R/hr at 1 meter. Barriers were evaluated for failure and to determine if there were any barriers left to prevent personnel access. Unintended exposures exceeding 100 millirem total effective dose equivalent (or 5 rem shallow dose equivalent or 1.5 rem lens dose equivalent) were evaluated to determine if there were any regulatory overexposures or if there was a substantial potential for an overexposure.

This inspection constitutes one sample as defined in IP 71121.01-05.

b. Findings

No findings of significance were identified.

.4 Job-In-Progress Reviews

a. Inspection Scope

The inspectors observed the following three jobs that were being performed in radiation areas, airborne radioactivity areas, or HRAs for observation of work activities that presented the greatest radiological risk to workers:

- ISFSI – dry fuel storage – fuel loading and storage activities;
- HRA – cask removal from spent fuel pool and fuel transport container; and
- reactor building and ISFSI pad activities.

The inspectors reviewed radiological job requirements for these activities, including RWP requirements and work procedure requirements, and attended as-low-as-is-reasonably-achievable (ALARA) job briefings.

This inspection constitutes one sample as defined in IP 71121.01-05.

Job performance was observed with respect to the radiological control requirements to assess whether radiological conditions in the work area were adequately communicated to workers through pre-job briefings and postings. The inspectors evaluated the adequacy of radiological controls, including required radiation, contamination, and airborne surveys for system breaches; radiation protection job coverage, including any applicable audio and visual surveillance for remote job coverage; and contamination controls.

This inspection constitutes one sample as defined in IP 71121.01-05.

The inspectors reviewed radiological work in high radiation work areas having significant dose rate gradients to evaluate whether the licensee adequately monitored exposure to personnel and to assess the adequacy of licensee controls. These work areas involved areas where the dose rate gradients were severe; thereby increasing the necessity of providing multiple dosimeters or enhanced job controls.

This inspection constitutes one sample as defined in IP 71121.01-05.

b. Findings

No findings of significance were identified.

.5 High Risk Significant, High Dose Rate, High Radiation Area and Very High Radiation Area Controls

a. Inspection Scope

The inspectors held discussions with the radiation protection manager concerning high dose rate, HRA and very high radiation area controls and procedures, including procedural changes that had occurred since the last inspection, in order to assess whether any procedure modifications substantially reduced the effectiveness and level of worker protection.

This inspection constitutes one sample as defined in IP 71121.01-05.

The inspectors discussed with radiation protection supervisors the controls that were in place for special areas of the plant that had the potential to become very high radiation areas during certain plant operations. The inspectors assessed if plant operations required communication beforehand with the radiation protection group, so as to allow corresponding timely actions to properly post and control the radiation hazards.

This inspection constitutes one sample as defined in IP 71121.01-05.

The inspectors conducted plant walkdowns to assess the posting and locking of entrances to high dose rate high radiation areas and very high radiation areas.

This inspection constitutes one sample as defined in IP 71121.01-05.

b. Findings

No findings of significance were identified

.6 Radiation Worker Performance

a. Inspection Scope

During job performance observations, the inspectors evaluated radiation worker performance with respect to stated radiation safety work requirements. The inspectors evaluated whether workers were aware of any significant radiological conditions in their workplace, of the RWP controls and limits in place, and of the level of radiological hazards present. The inspectors also observed worker performance to determine if workers accounted for these radiological hazards.

This inspection constitutes one sample as defined in IP 71121.01-05.

The inspectors reviewed radiological problem reports for which the cause of the event was due to radiation worker errors to determine if there was an observable pattern traceable to a similar cause and to determine if this perspective matched the corrective action approach taken by the licensee to resolve the reported problems. Problems or issues with planned or completed corrective actions were discussed with the radiation protection manager.

This inspection constitutes one sample as defined in IP 71121.01-05.

b. Findings

No findings of significance were identified.

.7 Radiation Protection Technician Proficiency

a. Inspection Scope

During job performance observations, the inspectors evaluated radiation protection technician performance with respect to radiation safety work requirements. The inspectors evaluated whether technicians were aware of the radiological conditions in

their workplace, the RWP controls and limits in place, and if their performance was consistent with their training and qualifications with respect to the radiological hazards and work activities.

This inspection constitutes one sample as defined in IP 71121.01-05.

The inspectors reviewed radiological problem reports for which the cause of the event was radiation protection technician error to determine if there was an observable pattern traceable to a similar cause and to determine if this perspective matched the corrective action approach taken by the licensee to resolve the reported problems.

This inspection constitutes one sample as defined in IP 71121.01-05.

b. Findings

No findings of significance were identified.

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

.1 Inspection Planning

a. Inspection Scope

The inspectors reviewed plant collective exposure history, current exposure trends, and ongoing and planned activities in order to assess current performance and exposure challenges. The inspectors reviewed the plant's current three-year rolling average for collective exposure in order to help establish resource allocations and to provide a perspective of significance for any resulting inspection finding assessment.

This inspection constituted one required sample as defined in IP 71121.02-05.

The inspectors reviewed documents to determine if there were site-specific trends in collective exposures and source-term measurements.

This inspection constituted one required sample as defined in IP 71121.02-05.

The inspectors reviewed procedures associated with maintaining occupational exposures ALARA and processes used to estimate and track work activity specific exposures.

This inspection constituted one required sample as defined in IP 71121.02-05.

b. Findings

No findings of significance were identified.

.2 Radiological Work Planning

a. Inspection Scope

The inspectors evaluated the licensee's list of work activities ranked by estimated exposure that were in progress and reviewed the following four work activities of highest exposure significance:

- transfer cleanup resins into shipping cask;
- change No. 12 recirculation pump seals and associated activities;
- ISFSI – dry fuel storage – fuel loading and storage activities; and
- HRA – cask removal from spent fuel pool and fuel transport container.

This inspection constituted one required sample as defined in IP 71121.02-05.

For these four activities, the inspectors reviewed the ALARA work activity evaluations, exposure estimates, and exposure mitigation requirements in order to verify that the licensee had established procedures and engineering and work controls that were based on sound radiation protection principles in order to achieve occupational exposures that were ALARA. The inspectors also determined if the licensee had reasonably grouped the radiological work into work activities, based on historical precedence, industry norms, and/or special circumstances.

This inspection constituted one required sample as defined in IP 71121.02-05.

b. Findings

No findings of significance were identified.

.3 Verification of Dose Estimates and Exposure Tracking Systems

a. Inspection Scope

The licensee's process for adjusting exposure estimates or re-planning work (when unexpected changes in scope, emergent work or higher than anticipated radiation levels were encountered) was evaluated. This included determining whether adjustments to estimated exposure (intended dose) were based on sound radiation protection and ALARA principles or whether they resulted from failures to adequately plan or to control the work. The frequency of these adjustments was reviewed to evaluate the adequacy of the original ALARA planning process.

This inspection constituted one required sample as defined in IP 71121.02-05.

b. Findings

No findings of significance were identified.

.4 Source-Term Reduction and Control

a. Inspection Scope

The inspectors reviewed licensee records to evaluate the historical trends and the current status of tracked plant source terms. The inspectors determined if the licensee was making allowances and developing contingency plans for expected changes in the source term due to changes in plant fuel performance issues or changes in plant primary chemistry.

This inspection constituted one required sample as defined in IP 71121.02-05.

b. Findings

No findings of significance were identified.

.5 Radiation Worker Performance

a. Inspection Scope

Radiation worker and radiation protection technician performance was observed during work activities being performed in radiation areas, airborne radioactivity areas, and HRAs that presented the greatest radiological risk to workers. The inspectors evaluated whether workers demonstrated the ALARA philosophy by being familiar with the scope of the work activity and tools to be used, by utilizing ALARA low dose waiting areas, and by complying with work activity controls. Also, radiation worker training and skill levels were reviewed to determine if they were sufficient relative to the radiological hazards and the work involved.

This inspection constituted one required sample as defined in IP 71121.02-05.

b. Findings

No findings of significance were identified.

.6 Declared Pregnant Workers

a. Inspection Scope

The inspectors reviewed dose records of declared pregnant workers for the current assessment period to verify that the exposure results and monitoring controls employed by the licensee complied with the requirements of 10 CFR Part 20.

This inspection constituted one required sample as defined in IP 71121.02-05.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification (71151)

.1 Mitigating Systems Performance Index - Heat Removal System

a. Inspection Scope

The inspectors sampled licensee submittals for the Mitigating Systems Performance Index (MSPI) - Heat Removal System PI for the period from the Third Quarter 2007 through Second Quarter 2008. To determine the accuracy of the PI data reported during those periods, PI definitions and guidance contained in the Nuclear Energy Institute (NEI) Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 5, was used. The inspectors reviewed the licensee's operator narrative logs, issue reports, event reports, MSPI derivation reports, and NRC Integrated Inspection Reports for the period of July 2007 through June 2008 to validate the accuracy of the submittals. The inspectors reviewed the MSPI component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection and, if so, that the change was in accordance with applicable NEI guidance. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the PI data collected or transmitted for this indicator and none were identified. Documents reviewed are listed in the Attachment to this report.

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

b. Findings

No findings of significance were identified.

.2 Mitigating Systems Performance Index - Cooling Water Systems

a. Inspection Scope

The inspectors sampled licensee submittals for the MSPI - Cooling Water Systems PI for the period from the Third Quarter 2007 through the Second Quarter 2008. To determine the accuracy of the PI data reported during those periods, PI definitions and guidance contained in the NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 5, was used. The inspectors reviewed the licensee's operator narrative logs, issue reports, event reports, MSPI derivation reports, and NRC Integrated Inspection Reports for the period of July 2007 through June 2008 to validate the accuracy of the submittals. The inspectors reviewed the MSPI component risk coefficient to determine if it had changed by more than 25 percent in value since the previous inspection, and if so, that the change was in accordance with applicable NEI guidance. The inspectors also reviewed the licensee's issue report database to determine if any problems had been identified with the PI data collected or transmitted for this indicator and none were identified. Documents reviewed are listed in the Attachment to this report.

This inspection constituted one MSPI cooling water system sample as defined in IP 71151-05.

b. Findings

No findings of significance were identified.

.3 Occupational Exposure Control Effectiveness

a. Inspection Scope

The inspectors sampled licensee submittals for the Occupational Radiological Occurrences PI for the period from the Third Quarter 2007 through the Second Quarter 2008. To determine the accuracy of the PI data reported during those periods, PI definitions and guidance contained in the NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," Revision 5, were used. The inspectors reviewed the licensee's assessment of the PI for occupational radiation safety to determine if indicator-related data was adequately assessed and reported. To assess the adequacy of the licensee's PI data collection and analyses, the inspectors discussed with radiation protection staff, the scope and breadth of its data review, and the results of those reviews. The inspectors independently reviewed electronic dosimetry dose rate and accumulated dose alarm and dose reports and the dose assignments for any intakes that occurred during the time period reviewed to determine if there were potentially unrecognized occurrences. The inspectors also conducted walkdowns of numerous locked high and very high radiation area entrances to determine the adequacy of the controls in place for these areas. Documents reviewed are listed in the Attachment to this report.

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

b. Findings

No findings of significance were identified.

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. Scope

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

adequate; and that the classification, prioritization, focus, and timeliness of corrective actions were commensurate with safety and sufficient to prevent recurrence of the issue. Minor issues entered into the licensee's CAP as a result of the inspectors' observations are included in the attached List of Documents Reviewed.

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

b. Findings

No findings of significance were identified.

.2 Daily Corrective Action Program Reviews

a. Scope

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

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

b. Findings

No findings of significance were identified.

.3 Semi-Annual Trend Review

a. Scope

The inspectors performed a review of the licensee's CAP and associated documents to identify trends that could indicate the existence of a more significant safety issue. The inspectors' review was focused on repetitive equipment issues, but also considered the results of daily inspector CAP item screening discussed in Section 4OA2.2 above, licensee trending efforts, and licensee human performance results. The inspectors' review nominally considered the six month period of July 2008 through December 2008, although some examples expanded beyond those dates where the scope of the trend warranted.

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

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

b. Findings

No findings of significance were identified.

.4 Annual Sample: Review of Operator Workarounds (OWAs)

a. 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 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 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 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, all 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 of significance were identified.

.5 Selected Issue Follow-Up Inspection: Feedwater Regulating Valve Air Leaks

a. Scope

During a review of items entered in the licensee's CAP, the inspectors recognized a corrective action item (CAP 01159660, dated November 18, 2008) documenting an air leak on the 'A' feedwater regulating valve (FRV) positioner. The licensee performed an operational decision-making issue evaluation and determined that because main air regulator pressure was not at a value approaching a valve lockup (the FRVs lockup at a main air pressure of 75 psig); increased monitoring was warranted until repairs could be performed. The licensee also determined that should air pressure lower to less than

82 psig, repair was to be implemented without delay. On December 31, 2008, the licensee proactively scheduled repair of the air leak on the 'A' FRV.

The inspectors also reviewed CAP 01134620 that documented an air leak on the 'A' FRV positioner in April, 2008. The licensee performed a condition evaluation and determined that the positioner's pilot valve stem had worn and attributed the likely cause to an issue in May 2008 where a positioner interference was found on the 'B' FRV causing the 'A' FRV to "hunt" for position. This, in turn, may have led to premature wear of the 'A' FRV positioner pilot stem. Following the leak identified in April, the licensee replaced the 'A' FRV positioner pilot valve.

The inspectors interviewed operations and system engineering personnel to determine the likely failure mechanisms for both of the issues discussed above. Although both instances of air leaks were associated with the FRV positioner pilot valve, the inspectors determined that the licensee promptly identified, evaluated to the best of their ability under the circumstances at hand, and repaired the leaks. Classification of the issues under the CAP were deemed appropriate based on the significance of the issues.

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

b. Findings

No findings of significance were identified.

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

.1 (Closed) Licensee Event Report (LER) 05000263/2008-005-00: Reactor Scram due to Loss of Normal Offsite Power

On September 11, 2008, a phase to ground fault occurred on the conductors supplying power to the auxiliary transformer, which is the normal offsite power source to the plant. With the reserve auxiliary transformer out-of-service for planned maintenance, the plant experienced a scram from full power due to loss of power to balance-of-plant equipment. Following the scram, complications occurred which included the failure of HPCI to trip at the high level setpoint, erratic indication associated with the automatic depressurization system (ADS) timer display, and reactor water level control issues. The inspectors reviewed corrective actions taken or planned to prevent recurrence and determined them to be reasonable. Corrective actions included repairs of the faulted conductors (primary and extent-of-condition), changes to the cable condition monitoring program, enhanced preventive maintenance for the HPCI trip solenoid valve, and replacement of the ADS timer display. A Special Inspection was conducted, in part, as a result of this event. The special inspection team reviewed the event causes, corrective actions, and safety significance, and identified three NCVs and one finding as a result of the cable failures, reactor water level control, and HPCI issues (NRC Inspection Report 05000263/2008009). No additional findings were identified as a result of the LER review. This LER is closed.

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

.2 (Closed) LER 05000263/2008-006-00: Loss of Normal Offsite Power due to Equipment Contact with 115kV Lines

On September 17, 2008, a loss of normal offsite power was experienced with the plant shutdown. Vendor-operated man-lift equipment came into contact with an overhead conductor which provided offsite power to the plant. Due to the loss of offsite power, a containment isolation occurred which resulted in the loss of shutdown cooling for approximately 90 minutes. The inspectors reviewed interim corrective actions taken or planned to prevent recurrence and determined them to be reasonable. Interim corrective actions included delivery of offsite rental equipment to an outage parking lot, and contact with vendors regarding unloading restrictions. The Special Inspection team reviewed the event causes, corrective actions, and safety significance, and did not identify any findings of significance (NRC Inspection Report 05000263/2008009). No additional findings were identified as a result of the LER review. This LER is closed.

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

.3 (Closed) LER 05000263/2008-007-00: Loss of Shutdown Cooling due to ESF Actuation Caused by Pressure Spike

On September 20, 2008, shutdown cooling was lost for approximately 150 minutes due to a low reactor water level engineered safety feature (ESF) actuation and containment isolation while restoring the CRD system. The licensee determined that the event occurred because an instrument back-fill valve was left open following the September 11, 2008, scram. A licensed operator failed shut the back-fill valve as required by a post scram shutdown checklist. During the restoration of the CRD system, a pressure surge in the reactor level reference leg backfill system sensed when CRD was initiated. This pressure surge resulted in a false low level indication to the ESF reactor level instruments (reactor water level remained at 64 inches throughout the event). The inspectors reviewed corrective actions taken or planned to prevent recurrence and determined them to be reasonable. Corrective actions included procedural revisions and operator review of configuration control requirements. The Special Inspection team reviewed the event causes, corrective actions, and safety significance, and identified one NCV as a result of the procedure adherence issue (NRC Inspection Report 05000263/2008009). No additional findings were identified as a result of the LER review. This LER is closed.

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

4OA5 Other Activities

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

a. Inspection Scope

The inspectors observed and evaluated the licensee's loading of the first canister during the campaign to verify compliance with the Certificate of Compliance (CoC), TSs, and associated procedures. Specifically, the inspectors observed loading of the fuel assemblies, lifting of the transfer cask from the spent fuel pool, decontamination and

surveying, welding of the lid, non-destructive weld examinations, draining of water, and vacuum drying.

During performance of the activities, the inspectors verified the staff's familiarity with procedures and its steps, adequate supervisory oversight, and adequate communication and coordination between the groups. In addition, the inspectors reviewed the loading and unloading procedures and evaluated the licensee's adherence to the loading procedure. The inspectors also verified that the contamination and radiation levels from the transfer cask were well below the regulatory limits and the licensee's administrative limits. The inspectors attended various pre-job briefs to assess the licensee's ability to identify critical steps of the evolution, potential failure scenarios and tools to prevent errors.

The inspectors reviewed a number of corrective action program documents and the associated follow-up actions that were generated in response to some unexpected conditions encountered during the loading campaign. The inspectors reviewed 10 CFR 72.48 screenings and evaluations as well as reference documents. The inspectors evaluated the radiation protection staff's involvement throughout the entire cask loading evolution and the use of adequate ALARA practices.

The inspectors reviewed the licensee's fuel selection process to verify that the process incorporated all of the physical, thermal, and radiological fuel acceptance parameters specified in the current CoC and the TSs. The inspectors reviewed the fuel selection procedures and the qualification records. The inspectors reviewed the licensee's surveillance and maintenance program associated with storage of fuel.

Many of the observations of actual loading of the initial cask covered activities in progress which were controlled and successfully completed. The licensee encountered several challenges along the way which the inspectors observed were addressed prior to continuing loading. During welding of the inner lid to the first canister the automatic welding system (AWS) encountered difficulties and a portion of the weld wire feed guide tube contaminated a small portion of the weld's final pass. The affected area's final pass was subsequently grinded, removing the contaminant, and visual and dye penetrant tests were successfully performed on the area and its' surrounding yielding passing results. During welding operations the licensee was required by procedures to monitor for hydrogen generation to prevent an ignition event. The licensee had in place a hydrogen monitor with a limiting lower explosive limit (LEL). During welding operations workers received spurious alarms from the hydrogen detector. The cause of these alarms was determined not to be an excess of the limiting LEL, but instead a warning indicator of moisture in the input filter of the detector. The licensee determined that a moisture trap would alleviate the excessive moisture in the filter and clear the alarms. During these alarms, the licensee did not operate any equipment that could create any hydrogen generation.

The health physics staff developed an ALARA plan for the loading activities. The ALARA plan included lessons learned from other utilities. The ALARA plan estimated a total dose received by the crew throughout the cask loading operations and transportation to the storage pad. During the loading operations, the inspectors noted radiological control of work activities by the RP staff. Communication between the RP staff and workers was evident, and the workers also demonstrated good radiological work practices. Even with the presence of such practices, the total dose, for loading and

transportation to the storage pad of the first cask was higher than the estimated amount due to the welding, hydrogen monitoring, and other issues that extended work time during loading of the first cask. The licensee captured this issue in the CAP as Action Report (AR) 01151602 and compiled a comprehensive list of lessons learned to lower dose for activities associated with subsequent casks.

The inspectors noted that the licensee staff demonstrated appropriate safety and radiation protection practices during the work efforts. Management oversight of the process was evident throughout the loading campaign and facilitated the identification and prompt resolution of a number of issues which arose during the work.

The licensee identified discrepancies on several casks during receipt inspections performed by licensee staff and were placed on Quality Control (QC) hold. After internal evaluations and discussions with the manufacturer of the canisters (Transnuclear), the deficiencies were addressed and it was determined there were no operability issues with the canisters. Therefore, the licensee proceeded to use them to store fuel.

b. Findings

Unresolved Item (URI) for Non-Destructive Examinations

The licensee informed the inspectors of two casks for which the non-destructive examination of a weld on the outer lid was performed outside the temperature range specified in the applicable welding procedure. This issue requires additional NRC evaluation and will remain unresolved pending further review. Pending resolution by the NRC, this issue will be treated as URI-0500263/2008-005-01, “Non-destructive examination of weld on outer lid of casks performed outside the temperature range specified in the applicable welding procedure.”

.2 Implementation of Temporary Instruction (TI) 2515/176: “Emergency Diesel Generator Technical Specification Surveillance Requirements regarding Endurance and Margin Testing”

a. Inspection Scope

The objective of TI 2515/176 was to gather information to assess the adequacy of nuclear power plant EDG endurance and margin testing as prescribed in plant-specific TSs. The inspectors reviewed the licensee's TS, procedures, and calculations and interviewed licensee personnel to complete the TI. The information gathered for this TI was forwarded to the Office of Nuclear Reactor Regulation for further review and evaluation on December 17, 2008. This TI is complete at Monticello Nuclear Generating Plant; however, this TI 2515/176 will not expire until August 31, 2009. Additional information may be required after review by the Office of Nuclear Reactor Regulation.

b. Findings

No findings of significance were identified.

.3 Quarterly Resident Inspector Observations of Security Personnel and Activities

a. Inspection Scope

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

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

b. Findings

No findings of significance were identified.

4OA6 Management Meetings

.1 Exit Meeting Summary

On January 7, 2008, the inspectors presented the inspection results to Mr. B. Sawatzke, 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 Debrief

An interim debrief for ISFSI activities was conducted on September 11, 2008. No proprietary information was identified.

.3 Interim Exit Meetings

Interim exits were conducted for:

- Access control to radiologically significant areas, ALARA planning and control under the Occupational Radiation Safety Cornerstone and Occupational Control Effectiveness Performance Indicator with Mr. K. Jepson on October 3, 2008;
- A telephone exit for TI 2515/176 was conducted with Mr. R. Baumer, Compliance Engineering Analyst, and other licensee staff on December 1, 2008;
- An exit meeting for ISFSI Inspection Procedure 60855.1 was held on December 5, 2008. The inspectors presented the inspection results to members of the licensee management and staff. Licensee personnel acknowledged the information presented. The inspectors asked licensee personnel whether any materials examined during the inspection and requested to be taken offsite should be considered proprietary. No proprietary information was identified;
- The licensed operator requalification training biennial written examination and annual operating test results with Mr. G. Allex, Supervisor, Operations Training, on December 22, 2008; and

- The annual review of Emergency Action Level and Emergency Plan changes with the licensee's Regulatory Affairs Manager and Principle Emergency Preparedness Coordinator, Mr. T. Blake and Mr. G. Holthaus, via telephone on December 23, 2008.

The inspectors confirmed that none of the potential report input discussed was considered proprietary.

4OA7 Licensee-Identified Violations

None.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

T. O'Connor, Site Vice President
B. Sawatzke, Plant Manager
J. Grubb, Site Engineering Director
K. Jepson, Business Support Manager
S. Sharp, Operations Manager
W. Flaga, Acting Maintenance Manager
B. Cole, Radiation Protection/Chemistry Manager
T. Blake, Regulatory Affairs Manager
G. Holthaus, Principle Emergency Preparedness Coordinator
B. Brown, ISFSI Project Support
N. French, Operations Support Manager
S. Quiggle, ISFSI Project Manager
L. Samson, Manager, Spent Nuclear Fuel Storage
K. Shriver, ISFSI Project Support

Nuclear Regulatory Commission

K. Riemer, Chief, Reactor Projects Branch 2

LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

Opened

05000263/2008-005-01	URI	Non-Destructive Examination of Weld on Outer Lid of Casks Performed Outside the Temperature Range Specified in the Applicable Welding Procedure (Section 4OA5.2)

Closed

05000263/2008-005-00	LER	Reactor Scram due to Loss of Normal Offsite Power (Section 4OA3)
05000263/2008-006-00	LER	Loss of Normal Offsite Power due to Equipment Contact with 115KV Lines (Section 4OA3)
05000263/2008-007-00	LER	Loss of Shutdown Cooling due to ESF Actuation Caused by Pressure Spike (Section 4OA3)

LIST OF DOCUMENTS REVIEWED

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

Section 1R01

- 1487; Site Loose Material Quarterly Inspection; Revision 4
  A.6; Acts of Nature; Revision 28
  1151; Winter Checklist; Revision 57
  Operations Manual B.06.04-05; Circulating Water System Operation; Revision 46
  8047; Temporary Heating Boiler Installation; Revision 1
  C.4-B.08.03.A; Loss of Heating Boiler; Revision 5
  CAP 01160369; Temporary Heating Boiler Feedwater Pump Seized
  CAP 0116502; Temporary Boiler Equipment Issues Prevent Use
  WO 359058; S-1, Install and Remove Temporary Boiler

Section 1R04

- C.5-3204; Reactor Pressure Vessel (RPV) Makeup with CRD; Revision 3
  2154-09; Control Rod Drive System Prestart Valve Checklist; Revision 31
  2117; Plant Prestart Checklist Control Rod Drive System; Revision 7
  2154-11; Core Spray System Prestart Valve Checklist; Revision 18
  2119; Plant Prestart Checklist – Core Spray System; Revision 8
  2154-13; RCIC System Prestart Valve Checklist; Revision 25
  2121; Plant Prestart Checklist RCIC System; Revision 14
  CAP 01162995; Non-Safety Instrument Tubing Displaced from Attachments (NRC-identified)

Section 1R05

- Fire Strategy A.3-19-A; Make-Up Demin. Area; Revision 5
  Fire Strategy A.3-19-B; Essential MCC Area (No. 142 & 143 931' Elevation); Revision 10
  Fire Strategy A.3-19-C; Feedwater Pipe Chase; Revision 5
  Fire Strategy A.3-16; Corridor, Turbine Building East and West (Elevations 911" and 931')
  Fire Strategy A.3-17; Turbine Building North Cable Corridor 941'
  Fire Strategy A.3-32-B; EFT Building Second Floor (Div II)

Section 1R11

- Operations Simulator Training Scenario RQ-SS-63E; Revision 0
- Results – Licensed Operator Examination Results – CY 2008

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- Monticello Maintenance Rule Program System Basis Document; Reactor Core Isolation Cooling (RCIC); Revision 2
  CAP 01083190; RCIC-10 Failed to Meet Administrative Acceptance Criteria of 0137-10
  CAP 01083197; RCIC-57/59 Did not Meet Administrative Acceptance Criteria of 0137-10
  CAP 01085582; AO-13-22 RCIC Test Check Valve Failed IST Position Test
  CAP 01087586; 0255-08-IA-8; RCIC-57, RCIC-16, RCIC-17 Failed Test
  CAP 01092480; RCIC Steam Line High Area Temperature Switch Out of As Found
  CAP 01127214; RCIC Barometric Condenser Condensate Pump Would not Start
  CAP 01127222; MO-3502 RCIC Test Return Valve Did not Operate as Expected
  CAP 01127489; MO-3502 Automatically Closed During RCIC Surveillance

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- WO 367292; ANN-93-A-26 Did not Illuminate as Expected
  CAP 01155188; ANN-93-A-26 Failed PMT test
  CAP 01156863; Apparent Failure of LT-1016 (13A FWH)
  WO 371745; LT-1015 T-Mod and Replacement
  WO 00372650-01; Repair Leaking Valve [CV-4174A]
  M-106; MNGP P&ID, Condensate and Feedwater
  M-2500; MNGP P&ID, Hydrogen Water Chemistry Hydrogen and Oxygen Injection Systems
  CAP 01158638; CV-4147A, RFP H2 HX Drag Valve is Leaking Water
  CAP 1160105; 1R Supply Breakers to 4kV Busses Have Dual Indications
  4858-03-OCD; 1R Reserve Transformer Maintenance Isolation; Revision 5
  NX-8875-38-5; MNGP Power & Control Circuits, Unit 2, Line-up No. 1
  NE-3636399-6; MNGP 1R Transformer SEC ACB 152-302 Control
  CAP 01139841; 2R Transformer X Winding Bushing Oil Leaks Identified
  CAP 01162331; 2R X-Winding Resistance Annomoly [sic] may Re-Isolation of 2R
  WO 362709; OPS-X02/XFMR PMT
  4858-02-OCD; 2RS, 2R, 3N4, 3N5, & CLP Maintenance Isolation; Revision 12
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  CAP 01156568; Evaluation of Relay Sockets Qualification with Low Low Set
  CA-98-054; Environmental Qualification (50.49) of Consolidated Controls Relay 8N13-1
- CAP 01159084; Inadequate Shutdown Margin During EOC-23 Core Alterations

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  CAP 01155964; Minor Seal Degradation Noted in CRV-EFT Pressurization Test
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  0255-04-III-1A; RHR Comprehensive Pump and Valve Test; Revision 11
  0255-04-IA-1-2; RHR Loop B Quarterly Pump and Valve Tests; Revision 78
  4 AWI-09.04.01; Inservice Testing Program; Revision 31
  CAP 01148128; RHR Loop 'B' IST Pump Trends
  CAP 01157936; Red Light Indication for CV-1995, 12 RHR Pump Minimum Flow, Received
  CAP 01158059; RHR Pump No.14 Differential Pressure High
  CAP 01158079; Safety Function Determination Paperwork Inaccurate
  0255-03-III-1A; Core Spray Comprehensive Pump and Valve Tests; Revision 15
  0255-06-III-1; HPCI Comprehensive Pump and Valve Tests; Revision 15
  CAP 01162810; HPCI - One Vibration Measurement Point is in Alert Range
  CAP 01162857; HPCI – Comprehensive 0255-06-III-1 has Errors with Respect to Technical Specifications
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  5790-102-02; Monticello Emergency Notification Report Form; Revision 36
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Section 2OS1

- 00000847-02; Radiation Work Permit for HRA Cask Removal from SFP and Work on Fuel Loaded TC/DSC; dated September 10, 2008
  00000848-02; Radiation Work Permit for HRA Fuel Loading Activities at 935' Reactor Building to IFSI Pad; dated September 10, 2008
  00000849-01; Radiation Work Permit for Radiation Area Support ISFSI Dry Fuel Storage Activities; dated August 13, 2008
  00000829-00; Radiation Work Permit for Replacement Recirc Pump Seals and Associated Activities; dated September 13, 2008
  00000832-00; Radiation Work Permit for Processing Clean-up Resin Into Cask for Shipment; dated February 1, 2008

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00000826-01; Radiation Work Permit for Repair YS-2568 a Locked High Radiation Area; Re-insulated Strainer and Piping; Remove Scale From Strainer and Piping; dated November 11, 2007
00000837-00; Radiation Work Permit for LHRA Transfer Resin Liner to Shipping Cask; dated February 5, 2008
000000842, Radiation Work Permit for WO 438100; Refueling Floor Activities; dated February 29, 2008
000000681; Radiation Work Permit for High Radiation Area Dose Rate Less than 250 mrem/hour; dated September 4, 2008
R.01.04; Control of Personnel in High Radiation Airborne Areas; Revision 20
R.12.02; Radiation Protection Key Control; Revision 26
CAP 01102406; Numerous RAM Labeling Issues Identified in Radwaste Building
CAP 01108701; RWP Verification is not Possible with Passport Discrepancies during RWP Verification
CAP 01121303; Stairway Entry Points in Reactor 1027 are Posted as Contaminated
CAP 01127168; Contamination Found in the Uncontaminated Area of the RCA
CAP 01129692; TIP Room Posting Performance Deficiency
CAP 01153546; High Radiation Area Posting Not in Accordance With RPP R.07.02
CAP 01152933; Airborne Posting Requirement in Reactor 985 Rad Waste Pump Room
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- 00337964; Radiation Work Assessment Form ALARA Review Checklist; Change No.12 REC Pump Seals and Associated Activities; dated September 13, 2008
00364535; Radiation Work Assessment Form; Condenser Room Repair Work on YS-2568; dated July 10, 2008
00352051; Radiation Work Assessment Form; Transfer Full Resin Liner From Process Cask to Shipping Cask; dated February 5, 2008
WO00352051; Radiological Pre-job Briefing Form RWP-837; Transfer Full Liner From Process Cask to Shipping Cask
WO00356562; Radiological Pre-job Briefing Form RWP-847, 848, 849; Anticipated Dose Rates on Loaded Transfer Cask/Dry Storage Cask; Revision 2
WO00332792; Radiological Pre-job Briefing Form; GE Fuel Channel Inspection; Cut Samples from 2 Fuel Channels for Off-Site Analysis
00356562; Radiation Work Assessment Form; ISFSI Dry Fuel Storage and Fuel Loading and Storage Activities; Revision 2
00348100; Radiological Work Assessment Form ALARA Review Checklist; Perform Spent Fuel Pool Clean-up; dated April 8, 2008
00350420; Radiological Work Assessment Form 935 Radwaste Old Shipping Building; dated July 30, 2008
2008 – 2012 Long Term Dose Reduction Plan; Revision 3
TE-0272; Work Order Dose Report; Nuclear Management Company, LLC; dated September 23, 2008

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CAP 01108993; WO 003342733 Exceeded the Dose Estimate by 25 percent; 202 mrem Versus 253 mrem
CAP 01107706; Over Estimation of Dose Estimate for WO 00336681, on Drain Valve Job

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- 3530-06; NRC/WANO Performance Indicator Radiation Safety and Exposure: Reporting Period; 3rd Quarter, 2007; Revision 5
3530-06; NRC/WANO Performance Indicator Radiation Safety and Exposure: Reporting Period; 4th Quarter, 2007; Revision 5
3530-06; NRC/WANO Performance Indicator Radiation Safety and Exposure: Reporting Period; 1st Quarter, 2008; Revision 5
3530-06; NRC/WANO Performance Indicator Radiation Safety and Exposure: Reporting Period; 2nd Quarter, 2008; Revision 5
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MSPI Unavailability Index Derivation Report for Cooling Water System; July 2007 – June 2008
MSPI Unreliability Index Derivation Report for Cooling Water System; July 2007 – June 2008
MSPI Performance Limit Exceeded Derivation Report for Cooling Water System; July 2007 - June 2008

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- CAP 01144178; Increase Trend in Chemistry Department HU Clock Resets
CAP 01155685; Adverse Trend – Unqualified Worker Issues
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DRUM Meeting Results; Operations; 3rd Quarter 2008
DRUM Meeting Results; RP-Chem; 3rd Quarter 2008
CAP 01125950; “A” FW Reg Valve Locked-up While Reducing Reactor Power
CAP 01134620; Air Leak found coming from CV-6-12A Positioner
CAP 01159660; FW Reg Valve (CV-6-12A) Air Leak
CAP 01138725; CV-6-12B Interference – Follower and Local Position Indication
WO 372548; CV-6-12A/P, Inspect A FRV Positioner for Air Leaks
B.05.07-05; Reactor Level Control; Revision 13
- CAP 1089739; Hood Spray Control Valve Inoperable
- CAP 1127225; AO-121-4-34B Leaked Past Seat After Maintenance
- CAP 1163348; Cooling Tower Pump Startup Requires Blocked Deluges
- CAP1091703; CSP System Declared Inoperable When MO 1749/1750 Open
- CAP 1090377; HPCI Valve 2036 PMT Unsat
- CAP 1129197; Operations Challenge – Swapping Off-gas Tanks
- CAP 1152530; CV 3440 N2 Vaporizer Steam Controller Does Not Control
- CAP 1149847; Operations Burden – Manually Opening Discharge Structure Sluice Gates
- CAP 1156061; RWM Causes Rod Withdraw Blocks During 0074 Test

- CAP 1155400; Water Leaking into Vacuum Tank for Waterbox Scavenging System
- CAP 1163314; 12 RBCCW HX Service Water Side Relief Valve Leaks

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- OSP-EDG-0540-11; 11 Emergency Diesel Generator 24 Month Test; Revision 0
- OSP-EDG-0540-12; 12 Emergency Diesel Generator 24 Month Test; Revision 0
- CA-92-224; Emergency Diesel Generator Loading; Revision 4
- AR 01148282; Enhancement to EAL "Protected Area" Clarity; August 22, 2008
- AR 01150088; DSC #4 Inner Lid Weld Problems; September 10, 2008
- AR 01150191; ISFSI Hydrogen Nuisance Alarm; September 10, 2008
- AR 01551602; First Canister Dose Greater than ALARA Budget; September 22, 2008
- AR 01151703; Foreign Material Discovered on ISFSI Loaded Fuel Bundle; September 23, 2008
- AR 01151820; DSC Hold Down Ring Installation Creates Contamination Issue; September 24, 2008
- AR 01152014; Arc Strikes Noted on Interior of DSC; September 25, 2008
- AR 01152018; Discrepancies Noted on Interior of DSC; September 25, 2008
- AR 01152273; AWS Failure Delays #2 DSC Loading; September 26, 2008
- AR 01152348; DSC 7 Receipt Inspection Discrepancies; September 27, 2008
- AR 01152567; Discrepancies Noted on Interior of Several DSCs; September 29, 2008
- AR 01156657; Neutron TLD Dose from ISFSI Higher than Dosimeter Estimates; October 23, 2008
- AR 01157268; Transnuclear Transfer Trailer Tie Rod Broke; October 29, 2008
- AR 01158344; Trolley on Refueling Platform Could not be Moved; November 5, 2008
- AR 01158564; Difficulty Seating a Fuel Bundle in DSC 9; November 7, 2008
- AR 01159132; FME Found in Spent Fuel Bundle LJX639; November 14, 2008
- AR 01159602; SNM Inventory Records Inaccurate; November 18, 2008
- SCR-08-164; 10 CFR 72.48 Screening; Independent Spent Fuel Storage Installation; Revision 0
- SCR-08-0176; 10 CFR 72.48 Screening; Regulatory Process Applicability Determination; Revision 0
- SCR-08-0289; 10 CFR 72.48 Screening; Special Nuclear Material Physical Inventory; Revision 0
- SCR-08-0292; 10 CFR 72.48 Screening; 72.212 ATT A – Fire Hazards Analysis; Revision 1
- SCR-08-0300; 10 CFR 72.48 Screening; Pressure Indicator Calibration; Revision 0
- E-27290; Areva Letter to Monticello, TN Project 11041, November 4, 2008; Response to Monticello Action Request Reports Concerning DSCs -006, -009, and -010; Revision 1
- E-27353; Areva Letter to Monticello, TN Project 11041; Transmittal of LR 721004-650 - Foreign Material Evaluation; November 7, 2008
- Condition Evaluation 1152018-02; Discrepancies Noted during Receipt Inspection per WO 356562 Task 4, Procedure 9503 Step 6
- Work Order Package 00370066 01; Resolve Discrepancies Identified on the Dry Storage Canister HSM-4B; October 6, 2008
- Work Order Package 00370066 02; Resolve Discrepancies Identified on the Dry Storage Canister HSM-5B; October 8, 2008
- Work Order Package 00370066 03; Resolve Discrepancies Identified on the Dry Storage Canister HSM-1A; October 15, 2008
- Work Order Package 00370066 04; Resolve Discrepancies Identified on the Dry Storage Canister HSM-2A; October 20, 2008

- Quality Inspection Checklist; Monticello QC Release of DSC TN S/N 005; October 7, 2008
- Quality Inspection Checklist; Monticello QC Release of DSC TN S/N 006; November 21, 2008
- Quality Inspection Checklist; Monticello QC Release of DSC TN S/N 007; October 15, 2008
- Quality Inspection Checklist; Monticello QC Release of DSC TN S/N 008; October 28, 2008
- Quality Inspection Checklist; Monticello QC Release of DSC TN S/N 009; November 4, 2008
- Quality Inspection Checklist; Monticello QC Release of DSC TN S/N 010; November 10, 2008

LIST OF ACRONYMS USED

AC	Alternating Current
ADS	Automatic Depressurization System
ALARA	As-Low-As-Is-Reasonably-Achievable
AR	Action Request
ASME	American Society of Mechanical Engineers
AWS	Automatic Welding System
CAP	Corrective Action Program
CFR	Code of Federal Regulations
CoC	Certificate of Compliance
CRD	Control Rod Drive
CRV	Control Room Ventilation
DRP	Division of Reactor Projects
EDG	Emergency Diesel Generator
EFT	Emergency Filtration Train
EOF	Emergency Offsite Facility
EP	Emergency Plan
ESF	Engineered Safety Feature
ESW	Emergency Service Water
FRV	Feedwater Regulating Valve
HCU	Hydraulic Control Unit
HPCI	High Pressure Core Injection
HRA	High Radiation Area
IMC	Inspection Manual Chapter
IP	Inspection Procedure
IR	Inspection Report
ISFSI	Independent Spent Fuel Storage Installation
kV	Kilovolt
LEL	Lower Explosive Limit
LER	Licensee Event Report
MCC	Motor Control Center
MSPI	Mitigating Systems Performance Indicator
NCV	Non-Cited Violation
NEI	Nuclear Energy Institute
NRC	U.S. Nuclear Regulatory Commission
OWA	Operator Workaround
PI	Performance Indicator
PM	Planned or Preventative Maintenance
QC	Quality Control
RCIC	Reactor Core Isolation Cooling
RCS	Reactor Coolant System
RHR	Residual Heat Removal
RWP	Radiation Work Permit
SDP	Significance Determination Process
SSC	Systems, Structures, and Components
TI	Temporary Instruction
TS	Technical Specification
TSC	Technical Support Center
URI	Unresolved Item

USAR	Updated Safety Analysis Report
WO	Work Order