

July 18, 2007

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

SUBJECT: MONTICELLO NUCLEAR GENERATING PLANT
NRC INTEGRATED INSPECTION REPORT 05000263/2007003

Dear Mr. O'Connor:

On June 30, 2007, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Monticello Nuclear Generating Plant. The enclosed integrated inspection report documents the inspection findings which were discussed on July 5, 2007, with Mr. Grubb 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 was one NRC-identified finding of very low safety significance involving a violation of NRC requirements. However, because this violation was of very low safety significance and because the issue was entered into the licensee's corrective action program, the NRC is treating this finding as a non-cited violation in accordance with Section VI.A.1 of the NRC's Enforcement Policy. Additionally, one licensee-identified violation is listed in Section 4OA7 of this report.

If you contest the subject or severity of a non-cited violation, 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 Station.

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Sincerely,

/RA by Nirod Shah for/

Kenneth Riemer, Chief
Branch 2
Division of Reactor Projects

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

Enclosure: Inspection Report 05000263/2007003
w/Attachment: Supplemental Information

cc w/encl: M. Sellman, President and Chief Executive Officer
D. Cooper, Senior Vice President and Chief
Nuclear Officer
Manager, Nuclear Safety Assessment
J. Rogoff, Vice President, Counsel, and Secretary
Nuclear Asset Manager, Xcel Energy, Inc.
State Liaison Officer, Minnesota Department of Health
R. Nelson, President
Minnesota Environmental Control Citizens
Association (MECCA)
Commissioner, Minnesota Pollution Control Agency
D. Gruber, Auditor/Treasurer,
Wright County Government Center
Commissioner, Minnesota Department of Commerce
Manager - Environmental Protection Division
Minnesota Attorney General's Office

T. O'Connor

-2-

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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 July 18, 2007

SUBJECT: MONTICELLO NUCLEAR GENERATING PLANT
NRC INTEGRATED INSPECTION REPORT 05000263/2007003

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No: 50-263

License No: DPR-22

Report No: 05000263/2007003

Licensee: Nuclear Management Company, LLC

Facility: Monticello Nuclear Generating Plant

Location: Monticello, Minnesota

Dates: April 1 through June 30, 2007

Inspectors: S. Thomas, Senior Resident Inspector
L. Haeg, Resident Inspector
S. Orth, Team Leader, Health Physics Program Plant
Support Team
T. Go, Health Physicist
R. Winter, Reactor Engineer
J. Tapp, Reactor Engineer
R. Lerch, Project Engineer

Observers: None

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

Enclosure

SUMMARY OF FINDINGS

Inspection Report 05000263/2007003; 04/01/2007 - 06/30/2007; Monticello Nuclear Generating Plant. Identification and Resolution of Problems.

This report covers a three-month period of baseline resident inspection and announced baseline inspections of radiation protection and maintenance effectiveness. The inspections were conducted by regional health physics inspectors, regional reactor engineers and the resident 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

Cornerstone: Mitigating Systems

- Green. A finding of very low safety significance was identified by the inspectors for a violation of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," associated with the licensee's failure to perform portions of Fleet Procedure FP-PE-SW-01, "Service Water and Fire Protection Inspection Program." Contrary to the requirements of the procedure, the licensee did not increase monitoring or determine degradation mechanisms when emergency service water (ESW) system pipe wall thickness indications were found to meet thresholds that required additional monitoring. As a result of an apparent cause evaluation and service water focused self-assessment, several corrective actions were developed to correct procedural and equipment deficiencies associated with the ESW and other raw water systems at Monticello. The inspectors determined that the performance deficiency affected the cross-cutting area of Human Performance, having resource components and involving aspects associated with maintaining long-term plant safety by the maintenance of design margins and the minimization of long-standing equipment issues [H.2(a)].

The finding was more than minor because the performance deficiency affected the procedure quality attribute of the Mitigating Systems cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors evaluated the finding using Inspection Manual Chapter (IMC) 0609, Appendix G, "Phase 1 Screening," and determined that Checklist 8, "Boiling Water Reactor (BWR) Cold Shutdown or Refueling Operation Time to Boil > 2 Hours: Reactor Coolant System (RCS) Level < 23 Feet Above Top of Flange," applied. However; because all qualitative criteria within the Core Heat Removal, Inventory Control, Power Availability, and Containment guidelines were met; because the finding did not meet the Checklist 8 criteria for Phase 2 or Phase 3 quantitative analysis; and because no event occurred that could be characterized as a loss of control as listed in Table 1 of IMC 0609, Appendix G, the finding was considered to be of very low safety significance. (Section 40A2.4)

B. Licensee-Identified Violations

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

REPORT DETAILS

Summary of Plant Status

Monticello was shutdown for a planned refueling outage at the beginning of the assessment period. The reactor was restarted on April 26, 2007, and the main electrical generator was connected to the grid on April 28, 2007. Full power was reached May 4, 2007. Monticello operated at full power for the remainder of the assessment period except for brief down-power maneuvers to accomplish rod pattern adjustments and to conduct planned surveillance testing activities.

1. REACTOR SAFETY

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

1R01 Adverse Weather (71111.01)

a. Inspection Scope

The inspectors performed a detailed review of the licensee's procedures and performed a walkdown of areas near large station transformers and substation electrical equipment to observe the licensee's preparations for adverse weather; specifically, adverse conditions that could result from high winds. The inspectors focused on plant specific design features and implementation of the procedures for preparing for the onset of adverse weather. Inspection activities included a review of the licensee's adverse weather procedures and a review of the protocols between the licensee and the transmission service operator to verify that appropriate information would be exchanged if issues arose that could adversely impact the offsite power system. The inspectors also verified that operator actions specified by plant specific procedures to address abnormal offsite power situations were appropriate.

The inspectors evaluation of readiness for seasonal susceptibilities (high winds) constituted one inspection sample.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment (71111.04Q)

a. Inspection Scope

The inspectors performed partial walkdowns of accessible portions of trains of risk-significant equipment. The inspectors reviewed equipment alignment to identify any discrepancies that could impact the function of the system and potentially increase risk. The inspectors selected redundant or backup systems for inspection during times when equipment was of increased importance due to unavailability of the redundant train or

other support related equipment. Inspection activities included a review of the licensee's procedures, verification of equipment alignment, and an observation of material condition, including operating parameters of equipment in-service.

The inspectors selected the following equipment trains to assess operability and proper equipment line-up for a total of four samples:

- Division II shutdown cooling during a planned Division I outage period;
- high pressure coolant injection (HPCI) system while the reactor core isolation cooling (RCIC) system was out-of-service for planned work;
- 14 residual heat removal service water (RHRSW) system while the 12 RHRSW system was out-of-service for planned work; and
- 'B' standby gas treatment (SBGT) system while the 'A' SBGT system was out-of-service for planned work.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)

.1 Quarterly Fire Zone Walkdowns (71111.05Q)

a. Inspection Scope

The inspectors walked down risk significant fire areas to assess fire protection requirements. The inspectors reviewed areas to determine whether 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. 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, or the potential to impact equipment which could initiate or mitigate a plant transient. The inspection activities included the control of transient combustibles and ignition sources, fire detection equipment, manual suppression capabilities, passive suppression capabilities, automatic suppression capabilities, compensatory measures, and barriers to fire propagation.

The inspectors selected the following areas for review for a total of eleven samples:

- Fire Zone 2-B, (east hydraulic control unit (HCU) area);
- Fire Zone 2-C, (west HCU area);
- Fire Zone 1-F, (torus area - elevation 896' and 923');
- Fire Zone 17, (turbine building north cable corridor 941');
- Fire Zone 13B, (reactor feedwater and lube oil reservoir room);
- Fire Zone 13C, (turbine building 911' elevation east motor control center (MCC) area);
- Fire Zone 8, (cable spreading room);

- Fire Zone 16, (turbine building east and west corridor, elevations 911' and 931');
- Fire Zone 19A, (make-up demineralizer area);
- Fire Zone 19B, (essential MCC area - No. 142 and 143 931' elevation); and
- Fire Zone 23B, (intake structure corridor).

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures (71111.06)

a. Inspection Scope

The inspectors performed an annual review of flood protection barriers and procedures for coping with external flooding. The inspection focused on evaluating the licensee's preparations to mitigate the consequences of the maximum probable flood scenario, as described in Appendix G of the Monticello Nuclear Generating Plant (MNGP) Updated Safety Analysis Report (USAR). The inspection activities included a review of the probable maximum flood scenario, historical Mississippi River levels and predicted levels for the 2007 spring flood season, and operations procedures which are implemented to mitigate the effects of rising river level. The inspectors also interviewed the site engineers responsible for predicting and mitigating the consequences of flooding at the Monticello site. Topics of discussion included: tools used to predict maximum river level, development of flood plans, the availability and use of materials specified to mitigate the impact of the flood, and potential time available to implement mitigating actions for the maximum probable flood scenario.

The inspectors' review constituted a total of one external flooding inspection sample.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification Program (71111.11)

a. Inspection Scope

The inspectors performed a quarterly review of licensed operator requalification training. The inspectors assessed the licensee's effectiveness in implementing the requalification program; whether licensed individuals could demonstrate operation of the facility safely and within the conditions of their license; and licensed operator performance of high-risk operator actions. The inspectors observed:

- crew performance and timeliness during high risk portions of the evolution;
- implementation of the emergency plan;
- incorporation of past lessons learned;
- clarity and formality of communications;
- control board conduct, alarm response actions and task prioritization;
- procedural adequacy and implementation;

- supervisory oversight;
- the dynamics of the crew;
- interpretations of Technical Specifications (TSs);
- simulator fidelity; and
- the licensee's critique of performance.

The inspectors observed the following requalification activity for a total of one inspection sample:

- a training crew during an evaluated simulator scenario that included: an inadvertent HPCI initiation, a lockout of Bus 15, and a steam leak in the drywell resulting in abnormal and emergency operating procedure entries, primary containment temperature and pressure control, and event classification and notifications.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12)

.1 Routine Evaluation (71111.12Q)

a. Inspection Scope

The inspectors reviewed areas and systems to assess maintenance effectiveness, including maintenance rule activities, work practices, and common cause issues. Inspection activities included the licensee's categorization of specific issues including evaluation of performance criteria, appropriate work practices, identification of common cause errors, extent of condition, and trending of key parameters. Additionally, the inspectors reviewed implementation of the Maintenance Rule (10 CFR 50.65) requirements, including a review of scoping, goal-setting, performance monitoring, short-term and long-term corrective actions, functional failure determinations associated with reviewed corrective action program (CAP) documents, and current equipment performance status.

The inspectors performed the following maintenance effectiveness reviews for a total of three samples:

- a review of reactor water clean-up (RWCU) system maintenance issues and historical treatment of component issues under the maintenance rule;
- a review of emergency service water (ESW) system microbiologically-influenced corrosion issues; and
- a review of licensee monitoring, maintenance, and corrective actions for wetted 4 kV cabling associated with the 11 residual heat removal (RHR) pump, 13 RHR pump, and the 11 core spray (CS) pump.

b. Findings

No findings of significance were identified.

.2 Periodic Evaluation (71111.12B)

a. Inspection Scope

The inspectors examined the last two Maintenance Rule periodic evaluation reports completed for the periods of June 2004 through March 2005, and April 2005 through March 2006. The inspectors reviewed a sample of: (a)(1) Action Plans, Performance Criteria, Functional Failures, and CAP documents to evaluate the effectiveness of (a)(1) and (a)(2) activities. These same documents were reviewed to verify that the threshold for identification of problems was at an appropriate level and the associated corrective actions were appropriate. Also, the inspectors reviewed the maintenance rule procedures and processes. The inspectors focused the inspection on the following five Maintenance Rule systems (samples):

- non-essential diesel generator;
- service water system;
- structures;
- emergency diesel generators (EDGs); and
- HPCI.

The inspectors verified that the periodic evaluation was completed within the time restraints defined in 10 CFR 50.65 (once per refueling cycle, not to exceed 24 months). The inspectors also ensured that the licensee reviewed its goals, monitored structures, systems, and components (SSCs) performance, reviewed industry operating experience, and made appropriate adjustments to the maintenance rule program as a result of the above activities.

The inspectors verified that:

- the licensee balanced reliability and unavailability during the previous cycle, including a review of high safety significant SSCs;
- (a)(1) goals were met, that corrective action was appropriate to correct the defective condition, including the use of industry operating experience, and that (a)(1) activities and related goals were adjusted as needed; and that
- the licensee had established (a)(2) performance criteria, examined any SSCs that failed to meet their performance criteria, and reviewed any SSCs that have suffered repeated maintenance preventable functional failures, including a verification that failed SSCs were considered for (a)(1).

In addition, the inspectors reviewed maintenance rule self-assessments and audit reports that addressed the maintenance rule program implementation.

This review represented five triennial inspection samples.

b. Findings

No findings of significance were identified.

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

a. Inspection Scope

The inspectors reviewed maintenance activities to review risk assessments (RAs) and emergent work control. The inspectors verified the performance and adequacy of RAs, management of resultant risk, entry into the appropriate licensee-established risk bands, and the effective planning and control of emergent work activities. The inspection activities included a verification that licensee RA procedures were followed and performed appropriately for routine and emergent maintenance, that RAs for the scope of work performed were accurate and complete, that necessary actions were taken to minimize the probability of initiating events, and that activities to ensure that the functionality of mitigating systems and barriers were performed. Additionally, the assessment included an evaluation of external factors, the licensee's control of work activities, and appropriate consideration of baseline and cumulative risk.

The inspectors observed maintenance or planning associated with the following activities or risk significant systems undergoing scheduled or emergent maintenance for a total of seven samples:

- isolation of shutdown cooling to support component testing;
- Division II RHR pumps and CS pump failed to start during emergency core cooling system (ECCS) testing;
- cooler flush subsequent to flow testing revealing reduced flow to the 12 CS motor cooler;
- rod position indication system troubleshooting and position indicating probe replacement for Control Rod 26-35;
- 13 & 14 ESW piping replacement due to indications of MIC;
- main generator seal oil vacuum pump replacement; and
- loss of control power for MO-2020, Division I RHR drywell spray outboard valve, following preventive maintenance.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors reviewed operability evaluations which affected mitigating systems or barrier integrity to ensure that operability was properly justified and that the component or system remained available. The inspection activities included a review of the technical adequacy of the operability evaluations to determine the impact on TS, the

significance of the evaluations to ensure that adequate justifications were documented, and that risk was appropriately assessed.

The inspectors reviewed the following operability evaluations for a total of four samples:

- CAP 01081986-03 (internal seal welds in safety relief valves may not meet codes);
- CAP 01088367 (12 CS pump motor cooler reduced cooling flow);
- CAP 01089542 (Is abandoned cable in the drywell accounted for in analysis?); and
- CAP 01085173 (12 EDG failed vibration post-maintenance test (PMT)).

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing (71111.19)

a. Inspection Scope

The inspectors verified that the PMT procedures and activities were adequate to ensure system operability and functional capability. Activities were selected based upon the SSCs ability to impact risk. The inspection activities included witnessing or reviewing the integration of testing activities, applicability of acceptance criteria, test equipment calibration and control, procedural use and compliance, control of temporary modifications or jumpers required for test performance, documentation of test data, system restoration, and evaluation of test data. Also, the inspectors verified that maintenance and PMT activities adequately ensured that the equipment met the licensing basis, TS, and USAR design requirements.

The inspectors selected the following post-maintenance activities for review for a total of six samples:

- reactor coolant pressure boundary leakage test;
- primary containment integrated leak rate test (ILRT), Part B, pressurization and stabilization;
- No. 13 250 Vdc battery cells 37 and 65 following replacement;
- solenoid valve SV-2379 [associated with torus to reactor building vacuum breaker] following replacement;
- 12 EDG circulating oil pump following coupling replacement and realignment; and
- post-replacement testing of 12 RHRSW pump.

b. Findings

No findings of significance were identified.

1R20 Outage Activities (71111.20)

a. Inspection Scope

The inspectors continued evaluation of outage activities for a refueling outage (RFO) that began on March 14, 2007, and ended on April 28, 2007. The inspectors reviewed activities to ensure that the licensee considered risk in developing, planning, and implementing the outage schedule, developed mitigation strategies for loss of key safety functions, and adhered to operating license and TS requirements to ensure defense-in-depth. The inspection activities included a review of the outage plan, monitoring of shutdown and startup activities, control of outage activities and risk, and observation of reduced inventory operations, maintenance and refueling activities.

The following represents a partial list of the major outage activities the inspectors reviewed/observed, all or in part:

- review of both outage plans and the ready-backlog;
- control room turnover meetings and selected pre-job briefings;
- refueling activities;
- torus closeout inspection;
- drywell closeout inspection;
- startup and heatup activities, including criticality, feed pump startup, main turbine generator startup and synchronization, and elements of power escalation to full power; and
- identification and resolution of problems associated with the outage.

Inspection activities for this inspection sample began in the first quarter 2007 assessment period and were documented in Inspection Report 05000263/2007002. The inspection activities were concluded in the second quarter 2007. These inspection activities constitute one sample.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors reviewed surveillance testing activities to assess operational readiness and to ensure that risk-significant SSCs were capable of performing their intended safety function. Activities were selected based upon risk significance and the potential risk impact from an unidentified deficiency or performance degradation that a SSC could impose on the unit if the condition was left unresolved. The inspection activities included a review for preconditioning, integration of testing activities, applicability of acceptance criteria, test equipment calibration and control, procedural use, control of temporary modifications or jumpers required for test performance, documentation of test data, TS applicability, and evaluation of test data.

The inspectors selected the following surveillance testing activities for review for a total of eight samples:

- RHR shutdown cooling inboard and outboard supply isolation valve leak test (containment isolation valve);
- primary containment integrated primary containment leak rate test, Part C, verification test (routine);
- 14 ESW quarterly pump and valve tests (inservice test);
- HPCI automatic initiation test (routine);
- alternate shutdown system cycle functional test for 12 EDG and diesel transfer pump switches (routine);
- containment sump flow measurement instrumentation functional test (reactor coolant system (RCS) leakage detection);
- low pressure ECCS auto initiation test (routine); and
- 13 diesel generator 5-year automatic start/loading test (routine).

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications (71111.23)

a. Inspection Scope

The inspectors reviewed a temporary modification associated with an enclosure weldment and sealing of a piping-to-flange weld crack downstream of the 12 moisture separator drain tank dump valve CV-1001. This modification was chosen to assess the impact of the modification, and included a review of design documents, safety screening documents, USAR, and applicable TS to determine that the temporary modification was consistent with modification documents, drawings and procedures. The inspectors also reviewed the post-installation test results to confirm that tests were satisfactory and that the actual impact of the temporary modification on the permanent system and interfacing systems were adequately verified.

This review represented one inspection sample.

b. Findings

No findings of significance were identified.

1EP6 Drill Evaluation (71114.06)

a. Inspection Scope

The inspectors observed a full-scale emergency preparedness drill on June 27, 2007 that the licensee had credited as providing input to the Drill/Exercise PI. The inspectors reviewed classification of events by the shift manager and emergency director, simulated notifications to off-site agencies, protective action recommendation development, and post-drill critiques. Observations were compared with the licensee's

observations and CAP entries. The inspectors verified that there were no discrepancies between observed performance and PI reported statistics.

The review represented one inspection sample.

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

Cornerstone: Public Radiation Safety

2PS3 Radiological Environmental Monitoring Program (REMP) And Radioactive Material Control Program (71122.03)

.1 Inspection Planning

a. Inspection Scope

The inspectors reviewed the most current Annual Environmental Monitoring Reports (2005 and 2006) and licensee assessment results to determine if the REMP was implemented as required by the Radiological Environmental Technical Specifications (RETS) and the Offsite Dose Calculation Manual (ODCM). The inspectors reviewed the reports for changes to the ODCM with respect to environmental monitoring and commitments in terms of sampling locations, monitoring and measurement frequencies, land use census, inter-laboratory comparison program, and data analysis.

The inspectors reviewed the ODCM and the Annual Reports for 2005 and 2006 to identify environmental monitoring stations and their locations and evaluated licensee self-assessments, audits, and the licensee's vendor laboratory inter-laboratory comparison program results. The inspectors reviewed the Updated Final Safety Analysis Report for information regarding the environmental monitoring program and meteorological monitoring instrumentation. The inspectors also reviewed the scope of the licensee's audit program to determine if it met the requirements of 10 CFR 20.1101c.

This review represented one inspection sample.

b. Findings

No findings of significance were identified.

.2 Onsite Inspection

a. Inspection Scope

The inspectors walked down five of the air sampling stations (greater than 30 percent) and approximately 20 percent of the thermoluminescent dosimeter monitoring stations to determine whether they were located as described in the ODCM and to determine the equipment material condition.

The inspectors observed the collection and preparation of a variety of environmental samples including surface water and air filters. The environmental sampling program was evaluated to determine if it provided data that was representative of the release pathways as specified in the ODCM and that sampling techniques were performed in accordance with station procedures.

From direct observations and record reviews, the inspectors determined if the meteorological instruments were operable, calibrated, and maintained in accordance with guidance contained in the annual report, NRC Safety Guide 23, and licensee procedures. The inspectors determined if the meteorological data readout and recording instruments, including computer interfaces and data loggers at the tower, were operable; if readouts of wind speed, wind direction, delta temperature, and atmospheric stability measurements were available on the licensee's computer system, which was available in the control room; and if the system was operable.

The inspectors reviewed each event documented in the Annual Environmental Monitoring Report which involved missed samples, inoperable samplers, lost thermoluminescent dosimeters, or anomalous measurements for the cause and corrective actions. The Annual Reports were reviewed for positive sample results (i.e., licensed radioactive material detected above the lower limits of detection) and the licensee's evaluation of the source of this material.

The inspectors reviewed the ODCM for significant changes resulting from modifications to the land use census or sampling station changes made since the last inspection. This included a review of technical justifications for changed sampling locations. The inspectors determined if 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 inspectors reviewed calibration and maintenance records for five air samplers along with calibration records for radiation measurement (counting room) instrumentation that could be used for environmental sample analysis and was used for the free release of liquids or solids from the radiologically restricted area. This included the determination of the appropriate detection sensitivities for the counting samples, in that the instrumentation could achieve the RETS/ODCM required environmental lower levels of detection limits. The inspectors reviewed quality control data used to monitor radiation measurement instrument performance, and actions that would be taken if indications of degrading detector performance were observed.

The licensee did not perform radio-chemical analyses of REMP samples. Radio-Chemical Analysis of REMP samples were performed by a vendor. The inspectors reviewed the licensee's vendor laboratory data of the analyzed samples. The inspectors also reviewed the licensee's audit of the vendor laboratory's program to verify that the analytical and quality assurance programs were adequate.

The inspectors reviewed quality assurance audit results of the program to determine whether the licensee met the TS/ODCM requirements.

This review represented six inspection samples.

b. Findings

No findings of significance were identified.

.3 Unrestricted Release of Material From the Radiologically Restricted Area

a. Inspection Scope

The inspectors observed the access control location where the licensee monitored potentially contaminated material leaving the radiologically restricted area and inspected the methods used for the control, survey, and release of material from this area. The inspectors observed the performance of personnel surveying and releasing material for unrestricted use to determine if the surveys were performed in accordance with plant procedures.

The inspectors determined if the radiation monitoring instrumentation was appropriate for the radiation types present and was calibrated with appropriate radiation sources that represented the expected isotopic mix. The inspectors reviewed the licensee's criteria for the survey and release of potentially contaminated material and determined if there was guidance on how to respond to an alarm indicating the presence of licensed radioactive material. The inspectors reviewed the licensee's equipment to determine if radiation detection sensitivities were consistent with the NRC guidance contained in Circular 81-07 and IE Information Notice 85-92 for surface contamination and in HPPOS-221 for volumetrically contaminated material. The inspectors determined if the licensee performed radiation surveys to detect radio-nuclides that decay via electron capture.

The inspectors reviewed the licensee's procedures and records to determine if the radiation detection instrumentation was used at its typical sensitivity level based on appropriate counting parameters such as counting times and background radiation levels. The inspectors determined whether the licensee had established a "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.

This review represented two inspection samples.

b. Findings

No findings of significance were identified.

4. Identification and Resolution of Problems

a. Inspection Scope

The inspectors reviewed the licensee's self-assessments, audits, and Special Reports related to the REMP since the last inspection to determine if identified problems were entered into the CAP for resolution. The inspectors also determined if the licensee's self-assessment program was capable of identifying and addressing repetitive deficiencies or significant individual deficiencies that were identified by the problem identification and resolution process.

The inspectors also reviewed corrective action reports related to the REMP that affected environmental sampling and analysis and meteorological monitoring instrumentation. Staff members were interviewed and documents were reviewed to determine if the following activities were being conducted in an effective and timely manner commensurate with their importance to safety and risk:

- 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 review represented one inspection sample.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification (71151)

Cornerstones: Mitigating Systems, Barrier Integrity and Public Radiation Safety

.1 Reactor Safety Strategic Area

a. Inspection Scope

The inspectors used guidance and definitions contained in Nuclear Energy Institute (NEI) Document 99-02, Revision 5, "Regulatory Assessment Performance Indicator Guideline," to assess the accuracy of PI data. The inspectors reviewed licensee event reports (LERs), data within operator logs, and CAP documents for each PI. In conjunction with the RCS leakage detection inspection sample referenced in Section 1R22, the inspectors observed the surveillance activity that functionally tests instrumentation that measures identified RCS leakage.

The following PIs were reviewed for a total of two inspection samples:

- Safety System Functional Failures, for the period of April 2006 through March 2007 (Mitigating Systems Cornerstone); and
- RCS Leakage, for the period of April 2006 through March 2007 (Barrier Integrity Cornerstone).

b. Findings

No findings of significance were identified.

.2 Radiation Safety Strategic Area

a. Inspection Scope

The inspectors sampled the licensee's PI submittals for the periods listed below. The inspectors used PI definitions and guidance contained in Revision 5 of NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline," to determine if the PI data was accurate. The following PI was reviewed:

- RETS/ODCM Radiological Effluent Occurrences including first quarter 2006 through first quarter 2007.

The inspectors reviewed data associated with the RETS/ODCM PI to determine if the indicator was accurately assessed and reported. This review included the licensee's CAP database to identify any potential occurrences such as unmonitored, uncontrolled or improperly calculated effluent releases that may have impacted offsite dose. The inspectors also reviewed selected gaseous and liquid effluent release data and the results of associated offsite dose calculations generated over the previous four quarters. Data collection and analyses methods for PIs were discussed with licensee

representatives to determine if the process was implemented consistent with industry guidance in Revision 5 of NEI Document 99-02, "Regulatory Assessment Performance Indicator Guideline."

This review represented one inspection sample.

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems (71152)

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

.1 Routine Review of Identification and Resolution of Problems

a. Inspection Scope

As part of the routine inspections documented above, the inspectors verified that the licensee entered the problems identified during the inspection into their CAP. Additionally, the inspectors verified that the licensee was identifying issues at an appropriate threshold and entering them in the CAP, and verified that problems included in the licensee's CAP were properly addressed for resolution. Attributes reviewed included: 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 occurrence reviews were proper and adequate; and that the classification, prioritization and focus were commensurate with safety and sufficient to prevent recurrence of the issue.

b. Findings

No findings of significance were identified.

.2 Daily CAP Reviews

a. Inspection Scope

In order to assist with the identification of repetitive equipment failures and specific human performance issues for follow-up, the inspectors performed a daily screening of items entered into the licensee's CAP. This review was accomplished by reviewing daily CAP summary reports and attending corrective action review board meetings.

b. Findings

No findings of significance were identified.

.3 Semi-Annual Trend Review

a. Inspection Scope

The inspectors performed a review of the licensee's CAP and associated documents to identify trends that could indicate the existence of a more significant safety issue. The inspector's review was focused on the licensee's ability to self-assess their performance and document the results of these assessments in CAP documents and Department Roll-up Meeting reports. The inspectors 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 inspector's review nominally considered the six-month period of January 2007 through June 2007, although some examples expanded beyond those dates when the scope of the trend warranted.

Inspectors reviewed adverse trend CAP items associated with various events that occurred during the period. 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 licensees' CAP trending documents. Corrective actions associated with a sample of the issues identified in the licensee's trend report were reviewed for adequacy.

Assessment and Observations

There were no findings of significance identified. The inspectors evaluated the licensee trending methodology and observed that the licensee had performed a detailed review. The inspectors compared the licensee process results with the results of the inspectors' daily screening and did not identify any significant discrepancies.

b. Findings

No findings or issues of significance were identified.

.4 Annual Sample: Service Water (SW) Inspection Program

a. Inspection Scope

The inspectors reviewed licensee actions to resolve issues associated with through-wall leakage on sections of piping in the 13 ESW system. The inspection focused on two specific examples: the first was a self-revealed through-wall leak which occurred on April 19, 2007; and the second was a licensee-identified through-wall leak on a separate section of piping during post-pipe replacement leakage testing on April 22, 2007. The inspectors reviewed past programmatic implementation of Fleet Procedure FP-PE-SW-01, "Service Water and Fire Protection Inspection Programs." Also included as part of this inspection was a review of the licensee's corrective action documents associated with past SW piping issues, and more recently, with the extent-of-condition associated with the 13 ESW through-wall leaks.

b. Assessments and Observations

Introduction: The inspectors identified an NCV of 10 CFR 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," having very low safety significance (Green) for failing to accomplish portions of FP-PE-SW-01, "Service Water and Fire Protection Inspection Program," which required increased monitoring and determination of degradation mechanisms when wall thickness indications of in-scope systems were found to be less than 87.5 percent of nominal wall thickness. The inspectors identified several cases where examinations performed during past RFOs documented pipe wall thickness measurements less than 87.5 percent (in some cases nearly 50 percent of nominal thickness), and increased monitoring, evaluation, and/or extent-of-condition reviews were not performed as required by the licensee's inspection program.

Description: On April 19, 2007, with the reactor in cold shutdown (Mode 4), a small through-wall leak on the 13 ESW pump discharge piping was self-revealed to the licensee by an operator conducting rounds. The licensee performed reactive ultrasonic test (UT) exams of the piping to determine the extent of the pipe wall thinning. The 13 or 14 ESW systems were not within the original SW inspection program scope for the March-April 2007 refueling outage.

The licensee performed a limited extent-of-condition review of similar piping components using traditional UT techniques for the 13 ESW system and did not identify any locations where wall thicknesses were less than 30 percent of nominal wall thickness (the minimum wall thickness for which a determination of operability and an NRC relief request per American Society of Mechanical Engineers (ASME) Code Case N-597-1 would be required to justify continued operation of the safety-related system). During post-pipe replacement leakage testing of the 13 ESW system an additional through-wall leak was identified just upstream of the initial leaking component. It was later determined that this indication was not identified during the initial extent-of-condition review due to use of traditional "low-gain" settings for the UT equipment.

On April 22, the licensee performed UT examinations (using a "high-gain" setting) of both the 13 and 14 ESW trains. These examinations included sections of both ESW trains from the discharge piping of each pump to where each ESW train connected with the SW system piping. These piping sections were selected because they were particularly at-risk for bio-fouling (the degradation mechanism that caused the April 19 and 22 leaks) since the piping sections were not treated with a biocide agent and were typically laid-up with stagnant river water for lengthy periods of time. During a second extent-of-condition review, a section of piping on the 14 ESW system was identified as being below the minimum-allowed wall thickness and was subsequently replaced.

The inspectors reviewed specific sections of FP-PE-SW-01 concerning component scope selection, frequency, and corrective actions. Section 5.10.1.2 stated, in part, "When measured wear is less than $0.875 T_{nom}$ [nominal wall thickness] and greater than T_{min} [minimum wall thickness; 30 percent of T_{nom}], follow-up inspections shall be on an increased frequency, and the degradation mechanism should be considered." The

inspectors reviewed UT measurements for the 13 and 14 ESW systems conducted during the 1998, 2005, and 2007 RFOs to determine whether the licensee was meeting the requirements of FP-PE-SW-01, and to determine why the two sections of piping in the 13 ESW system were not identified by the monitoring program. It should be noted that the 13 and 14 ESW systems were not examined during the 2001 or 2003 RFOs, and the 2007 examinations were only conducted as part of the extent-of-condition review from the April 19 leak (i.e. they were not originally part of the examination scope).

The inspectors identified that on several occasions dating back to 1998, pipe wall thicknesses were found to be less than 87.5 percent of nominal wall thickness. In some cases, very little margin existed between the measured wall thickness and 50 percent of nominal wall thickness. However, the inspectors could not find, nor could the licensee provide, any documentation that evaluated the degradation mechanism(s) of these piping components. Additionally, the licensee did not formulate any plan to increase the monitoring frequency of these low-margin piping components. After discussing these issues with individuals responsible for the SW inspection program, the inspectors were informed that pipe wall thinning rates were the primary criteria used for future inspection selection and/or pipe replacement. In a few cases dating back to 1998, for example, some indications that were less than 87.5 percent of nominal wall thickness were found to be less than 50 percent of nominal wall thickness in 2007. These thinning rates (linear projection); however, did not conservatively coincide with the predicted thinning rates calculated and used for future scope selection. Per FP-PE-SW-01, the intent of the 87.5 percent of nominal wall thickness criteria was to provide confirmatory data to verify that the predicted thinning rate accurately modeled the actual thinning rate - where this was not the case, at-risk areas within the piping systems could be monitored more frequently. In the 1998 cases where indications were found less than 87.5 percent of nominal wall thickness, the documented thinning rate would have led to eventual replacement in as many as 20-30 years later, whereas actual thinning rates were demonstrated to be much faster.

As part of the licensee's corrective actions, an apparent cause evaluation was performed to determine why, with a programmatic inspection process in place, pipe wall thicknesses within the 13 and 14 ESW systems degraded in some cases to the point of leaking and in other cases to being below minimum thickness, requiring replacement. The licensee also performed an extensive focused self-assessment with input from outside expertise to evaluate testing programs, inspection and maintenance, design bases, chemistry/biological-fouling, procedures, training, program effectiveness, and operating experience use at the site with respect to raw water systems. As a result of the apparent cause evaluation and focused self-assessment, the licensee developed (or were in the process of developing) several corrective actions to address, in part, the implementation and procedural deficiencies of FP-PE-SW-01.

Analysis: The inspectors determined that failing to accomplish licensee-imposed required actions of FP-PE-SW-01, a procedure in place to address Generic Letter 89-13 commitment items, was a performance deficiency warranting a significance evaluation. The inspectors concluded that the finding was more than minor in accordance with Inspection Manual Chapter (IMC) 0612, "Power Reactor Inspection Reports," Appendix B, "Issue Screening," issued on June 22, 2006. The finding was more than

minor because it affected the attribute of equipment performance, which impacted the Mitigating Systems cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Although the through-wall leakage was self-revealed during a time when the 13 and 14 ESW systems were not required to be operable (shutdown plant condition); wall thicknesses less than the nominal wall thickness existed, were not identified by the licensee, and could have been self-revealed at any time (particularly when the system was required to be operable). The inspectors determined that, in part, the cause of the performance deficiency affected the cross-cutting area of Human Performance, had resource components, and involved aspects associated with maintaining long-term plant safety by the maintenance of design margins and the minimization of long-standing equipment issues [H.2(a)].

Because both the through-wall leakage of 13 ESW system piping and the performance deficiency were identified during plant shutdown conditions, the inspectors evaluated the finding using IMC 0609, Appendix G, "Phase 1 Screening," and determined that Checklist 8, "Boiling Water Reactor (BWR) Cold Shutdown or Refueling Operation Time to Boil > 2 Hours: Reactor Coolant System (RCS) Level < 23 Feet Above Top of Flange." However, because all qualitative criteria within the Core Heat Removal, Inventory Control, Power Availability, and Containment guidelines were met; because the finding did not meet the Checklist 8 criteria for Phase 2 or Phase 3 quantitative analysis (the finding did not: increase the likelihood of a loss of RCS inventory; degrade the licensee's ability to terminate a leak path or add RCS inventory when needed; significantly degrade the licensee's ability to recover decay heat removal once it was lost; or involve only one or less safety relief valves available to establish a heat removal path to the suppression pool due to the vessel head being removed); and because no event occurred that could be characterized as a loss of control as listed in Table 1 of IMC 0609, Appendix G, the finding was considered to be of very low safety significance (Green).

Enforcement: Title 10 CFR 50, Appendix B, Criterion V requires, in part, that activities affecting quality shall be accomplished in accordance with prescribed instructions, procedures, or drawings. Contrary to this requirement, the licensee failed to accomplish actions in accordance with FP-PE-SW-01, "Service Water and Fire Protection Inspection Program," which required increased monitoring and evaluation if pipe wall thinning for in-scope systems was found to be below specific acceptance criteria. Because the issues were of very low safety significance and because the issues were entered into the licensee's corrective action program (CAPs 01088604, 01088981, 01088988, 01088993, and 01092699), this violation is being treated as an NCV, consistent with Section VI.A.1 of the NRC Enforcement Policy (NCV 05000263/2007003-01).

.5 Annual Sample: Operator Workaround (OWA) Review

a. Inspection Scope

The inspectors evaluated the licensee's implementation of processes used to identify, document, track, and resolve operational challenges.

b. Issues

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. Included in the review were:

- OWAs;
- non-transient OWAs;
- control room deficiencies;
- control room “black board” challenges;
- accelerated testing (for equipment with performance issues); and
- critical operations manual emergent changes.

The inspectors performed plant walkdowns and reviewed various other records to identify OWAs that had not been identified and evaluated by the licensee. Specifically, items that:

- required operations contrary to past training or required more detailed knowledge of a system than was routinely provided;
- required a change from longstanding operational practices;
- required operation of systems or components in a manner dissimilar from similar systems or components;
- created the potential for compensatory actions to be performed on equipment or under conditions for which it was not appropriate;
- impaired access to required indications, increased the dependence on oral communications, or required actions to be performed under adverse environmental conditions; or
- required the use of equipment and interfaces that had not been designed with consideration of the task being performed.

The inspectors reviewed items such as licensee night orders, temporary information tags, out-plant status boards, daily plant and equipment status logs, controllers being operated in manual, instruments that were out-of-service, and operator aids or tools being used to compensate for material deficiencies as potential sources of unidentified operator workarounds.

No findings of significance were identified.

.6 Annual Sample: Documentation of Operability Classifications for SSCs

a. Inspection Scope

The inspectors reviewed the ten outstanding operable-but-degraded (OBD) or operable-but-nonconforming (OBN) conditions that the licensee proposed to carry forward and not correct prior to plant startup, subsequent to the completion of RFO 23. This inspection included reviewing selected operability evaluations, corrective action

documents, condition evaluations, and technical evaluations which justified continued operations with the degraded or non-conforming SSCs.

b. Assessments and Observations

The licensee completed RFO 23 on April 28, 2007. During the week prior to starting up the reactor, as part of their pre-startup inspections, the inspectors attended several licensee restart readiness meetings. One topic that was discussed during these meetings was the evaluation of OBD/OBN SSCs that would not be corrected prior to starting up the reactor plant. Subsequent to completion of one of the restart readiness meetings, the inspectors queried a licensee manager regarding how initial operability calls for each of the ten OBD/OBN SSCs were documented; the individual was unsure.

Licensee Procedure FP-OP-OL-01, "Operability Determination," Revision 2, states in part that:

- The Shift Manager determines if a condition exists that could call into question the ability of an SSC to perform its specified safety function.
- An operability recommendation is not required if the Shift Manager can determine SSC operability using available resources, or if adequate information exists in the Action Request [CAP document]. Documentation should be sufficient so that an independent reviewer can arrive at the same conclusion.
- If there is a reasonable expectation that the SSC is operable, OBD, or OBN, but clarifying documentation is required to support the operability determination, then the Shift Manager will request an operability recommendation and update the OPS STATUS attribute of the CAP Action Request with the basis for reasonable expectation of operability and that an operability recommendation has been requested to support a follow-up operability determination.

Also, in regards to operability determinations, Licensee Procedure FP-PA-ARP-01, "CAP Action Request Process," Revision 16, states in part that:

- An SRO [senior reactor operator] SHALL review the CAP Action Request if the issue meets any of the following criteria: affects plant operation or plant equipment; potentially involves external agency notification; involves Technical Specification compliance; or presents an immediate threat to personnel safety.
- The following SHALL be determined and documented, where applicable, by an SRO: operability status of any affected SSC; basis or justification used for the immediate operability declaration; and any compensatory actions taken to support operability.
- The SRO may initiate an Assignment for the performance of an operability recommendation to support confirmation of the operability status determination. While awaiting completion of the operability recommendation, the SRO SHALL update the CAP Action Request to document the immediate operability determination. Upon completion of the operability recommendation, the SRO SHALL review the operability recommendation and make an operability declaration. The SRO SHALL document the final declaration on the electronic record.

The inspectors reviewed the corrective action documents associated with each of the ten outstanding OBD/OBN SSCs and determined that the licensee was inconsistent in the documentation of the operability status of these OBD/OBN SSCs. Specific observations included:

- The OPS STATUS attribute of the CAP Action Request was not used to document requests for operability recommendations.
- Only half of the OBD/OBN issues were evaluated using the operability recommendation process. In each of these cases, the SRO reviewed and accepted the operability recommendation, but did not document the final operability declaration on the electronic record.
- For most OBD/OBN issues not supported by a formal operability recommendation, a clear documented initial statement of operability by an SRO could not be located by the inspectors. Typically, the corrective action documents associated with these issues contained an engineering evaluation of sufficient quality to support a determination of OBD/OBN.

The inconsistencies in the implementation of FP-PA-ARP-01 and FP-OP-OL-01, when dispositioning OBD/OBN items, was discussed with senior plant management. Prior to plant startup on April 26, 2007, an SRO reviewed all ten open OBD/OBN issues and formally documented the operability status of each issue in the OPS STATUS attribute of each associated CAP Action Request. Additionally, a memo from Operations department management outlining expectations regarding SRO review of OBD/OBN items was forwarded to all shift managers. This communication included the expectation to utilize the OPR process whenever OBD/OBN conditions are expected. The memo also stressed that OBD/OBN conditions require SRO concurrence to ensure that operability is maintained and actions to restore full qualification are planned or are in place.

No findings of significance were identified by the inspectors during this inspection.

4OA3 Event Follow-up (71153)

- .1 (Closed) Licensee Event Report 50-263/2006-002-01: "Unplanned LCO Due to Loss of Cooling in the Upper 4kV Room"

This initial evaluation of this event was performed by the inspectors and documented in Inspection Report 05000263/2006005. This LER revision provides additional information regarding the cause of the event, subsequent to the completion of the licensee's cause evaluation. The additional information was reviewed by the inspectors and no findings of significance were identified.

- .2 (Open) Licensee Event Report 50-263/2007-002-00: "Unexpected De-energizing of Bus 16 During Refuel Outage 23"

The initial evaluation of this event was performed by the inspectors and documented in Inspection Report 05000263/2007002. This LER provides information regarding the preliminary cause of the event and discusses planned and completed corrective actions.

The licensee is continuing its investigation into this event, and has committed to issuing a supplement to this LER when the investigation has completed. The information contained in this LER was reviewed by the inspectors and no new findings of significance were identified. This LER will remain open pending review of the supplement when issued.

.3 Operator Performance During Non-Routine Event: Reactor Pressure Boundary Test

On April 13, 2007, the licensee performed a reactor coolant pressure boundary leakage test. This test is required by ASME Boiler and Pressure Vessel Code Section XI prior to startup following each reactor RFO. The primary focus of the inspectors during the performance of this test was to evaluate the operating crew's ability to control the reactor coolant temperature and rate of reactor coolant pressure increase while increasing pressure to approximately 1000 psig. Also, as part of this inspection, the inspectors attended the test pre-job brief, monitored the performance of selected test prerequisite activities, and observed portions of post-test system restorations.

No findings of significance were identified during this inspection.

4OA6 Meetings

.1 Exit Meeting

The inspectors presented the inspection results to Mr. Grubb and other members of licensee management on July 5, 2007. The licensee acknowledged the findings presented. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

.2 Interim Exit Meetings

Interim exits were conducted for:

- Radiological environment monitoring program and radioactive material control program and RETS/ODCM radiological effluents, with Mr. W. Guldmond on May 4, 2007; and
- Maintenance effectiveness periodic evaluation with Mr. J. Grubb, Engineering Director, on May 18, 2007.

4OA7 Licensee-Identified Violations

The following violations of very low safety significance were identified by the licensee and are violations of NRC requirements which meets the criteria of Section VI of the NRC Enforcement Policy, NUREG-1600, for being dispositioned as NCVs.

- Technical Specification 3.9.2, "Refuel Position One-Rod-Out Interlock" requires immediately, with the refuel position one rod-out-interlock inoperable, that 1) control rod withdrawal be suspended, and 2) actions be initiated to fully insert

all insert-able control rods in core cells containing one or more fuel assemblies. Contrary to this requirement, during control rod exercise testing on April 20, 2007, the reed switch which fed the one rod-out-interlock was inoperable for Control Rod 26-35 and immediate actions were not taken to suspend control rod withdrawal. Although unrecognized at the time by the operators - because the full core display position indication for Control Rod 26-35 did not change from green to amber in color, the one-rod-out interlock was not met and thus was inoperable. After completing testing for Control Rod 26-35 and while withdrawing the next control rod (26-31) in the test one notch (Position 02), the operators realized that the color change had not occurred for Control Rod 26-35. The operators immediately re-inserted Control Rod 26-31, stopped the test and notified management, and entered the issue into the corrective action program as CAP 01088836. This finding is of very low safety significance because at no time was more than one control rod withdrawn.

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
S. Radebaugh, Maintenance Manager
S. Sharp, Operations Manager
W. Guldmond, Nuclear Safety Assurance Manager
K. Jepson, Radiation Protection - Chemistry Manager
K. Shields, Maintenance Rule Coordinator
J. Sabados, General Supervisor Chemistry
T. Rogers, REMP Coordinator, Radiation Protection Specialist Chemistry

Nuclear Regulatory Commission

K. Riemer, Chief, Reactor Projects Branch 2

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

50-263/2007-002-00	LER	Unexpected De-energizing of Bus 16 During Refuel Outage 23 (Section 4OA3.2)
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Opened and Closed

05000263/2007003-01	NCV	Failure to Accomplish Service Water Inspection Program Requirements (Section 4OA4.4)
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Closed

50-263/2006-002-01	LER	Unplanned LCO Due to Loss of Cooling in the Upper 4kV Room (Section 4OA3.1)
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Discussed

None.

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 reports.

Section 1R01: Adverse Weather

1487; Site Loose Material Quarterly Inspection; Revision 3; dated April 17, 2007
Licensee Response to Generic Letter 2006-02; Grid Reliability and the Impact on Plant Risk and the Operability of Offsite Power; July 21, 2006

Section 1R04: Equipment Alignment

9111-02; Shutdown Cooling Division II Protected System Ticket Checklist; Revision 1
2118; Plant Prestart Checklist HPCI System; Revision 14
2154-10; HPCI System Prestart Valve Checklist; Revision 28
NH-36249; HPCI System Piping & Instrumentation Diagram (P&ID) - Steam Side; Revision 76
NH-36250; HPCI System P&ID - Water Side; Revision AF
2154-23; RHR SW System Prestart Valve Checklist; Revision 27
NH-36665-CC; SW System & Make-Up P&ID, Intake Structure; Revision 79
NH-36664-CC; RHR Service Water & ESW Systems P&ID; Revision 76

Section 1R05: Fire Protection

Strategy A.3-02-B; East HCU Area; Revision 8
Strategy A.3-02-C; West HCU Area; Revision 8
Strategy A.3-01-F; Torus Area - Elevation 896' and 923'; Revision 7
Strategy A.3-17; Turbine Building North Cable Corridor 941'; Revision 4
Strategy A.3-16; Corridor, Turbine Building East and West (Elevations 911' and 931');
Revision 10
Strategy A.3-13-B; Reactor Feed Pump and Lube Oil Reservoir Room; Revision 9
Strategy A.3-13-C; Turbine Building 911' Elevation East MCC Area; Revision 6
Strategy A.3-08; Cable Spreading Room; Revision 11
Strategy A.3-19-B; Essential MCC Area - No. 142 and 142 931' Elevation; Revision 9
Strategy A.3-19-A; Make-Up Demineralizer Area; Revision 5
Strategy A.3-23-B; Intake Structure Corridor; Revision 5

Section 1R06: Flood Protection Measures

A.6; Acts of Nature; Revision 24
1478; Annual Flood Surveillance; Revision 02
Design Basis Document-T.5; External Flooding; Revision 04
CAP 01096533; NRC Review Questions the Sites' Ability to Implement A.6 Procedure
NH-178639; MNGP Flood Barriers for A.6 Acts of Nature Procedure; Revision B
NH-48841; MNGP Flood Protection for Office and Control Building - Steel Details
NH-51677-A; MNGP Flood Protection for Turbine Building Tube Pulling Structure - Steel Details

Section 1R11: Licensed Operator Requalification Program

Simulator Exercise Guide RG-SS-56E; HPCI Initiation, Bus 15 Lockout, Steam Leak in Drywell; Revision 0

Section 1R12: Maintenance Effectiveness

CAP 01088981; Adverse Trend: Monitoring Fails to Pre-identify Pipe Wall Failures
CAP 01088993; Biocide Not Performed on 13/14 ESW Discharge
EWI-08.22.01; Generic Letter 89-13; Revision 1
1386-03; ESW External Pipe Inspection Loop A and B; Revision 8
FP-PE-SW-01; SW and Fire Protection Inspection Program; Revision 2
Monticello Maintenance Rule Periodic Assessment Report; June, 2004 - March 2005
Monticello Maintenance Rule Periodic Assessment Report; April 2005 - March 2006
EWI-05.02.01; Monticello Maintenance Rule Program Document; Revision 11
PEI-06.01; Maintenance Rule Coordinator Activities; Revision 3
Monticello Maintenance Rule Program System Basis Document - NDG; Revision 3
Maintenance Rule Performance Improvement Plan (a)(1) for Safety SW; October 15, 2004, Revision 1
Maintenance Rule Performance Improvement Plan (a)(1) for NDG; April 29, 2004
M-Rule Expert Panel Meeting Minutes; February 14, 2007
MNGP - System Health Report for SSW Service and Seal Water; April 30, 2007
MNGP - System Health Report for DGN EDGs; April 21, 2007
MNGP - System Health Report for NDG Non-Essential EDG; April 21, 2007
Availability and Reliability Trend NDG; June 2005 - March 2007
Availability and Reliability Trend DGN Division I; June 2005 - March 2007
CAP 00830789; CV-2065 Failed PMT Stroke Time Test; April 8, 2005
CAP 01001783; Fuel Oil Leak From No. 12 EDG Requires Emergency Shutdown; October 24, 2005
CAP 01027374; Water Seepage into Upper kV Space; May 1, 2006
Monticello Maintenance Rule Program System Basis Document - RWCU; Revision 3
CAP 00848145; Multiple Attempts Required to Get 12 RWCU F/D Isolated
CAP 00857518; 12 RWCU Filter/Demin Dome Drain Valves Leak by
CAP 00889769; Unable to Complete PMT on RC-49-1, 11 RWCU F/D Air Supply or Vent
CAP 01010982; AO-12-4-41, 11 RWCU Precoat Pump Discharge Leaks
CAP 01041953; Difficulty Isolating #11 RWCU Filter/Demineralizer for Backwash/Pre-Coat
CAP 01094576; Unable to Isolate and Depressurize #12 RWCU Filter Demineralizer
CAP 00818968; Anomalous Results Produced by Megger Test of #11 Recirculation motor generator set
CAP 01011480; Water Leaking From 4160 kV Cable Penetration
CAP 039569; Degrade Grounding Cable in Reactor Core Isolation Cooling Pull Box in Reactor Building, Elevation 896'
Cable and Raceway Information System Electrical Cable Schedule Data for Selected 4 kV Cables
EWI-08.19.01; Cable Condition Monitoring Program; Revision 0
4181-03-PM; 13 RHR Pump Motor; Revision 06
4181-01-PM; 11 RHR Pump Motor; Revision 05
4211-01-PM; CS Pump Motor 11; Revision 08
Assorted Megger Data for 11 RHR Pump, 13 RHR Pump, and 13 CS Pump During a Time Period From 2002 to 2006

NF-36172; MNGP Turbine Generator Building Embedded Conduits Below Elevation 911"-0";
Revision A
Drawing E-303; Reactor Building Embedded Conduits Below Elevation 896'; Revision 2

Section 1R13: Maintenance Risk Assessments and Emergent Work Control

April 4, 2007; Shutdown Cooling Window Schedule
Combined Shutdown Cooling Window Contingency Plan; prepared April 4, 2007
March 28-31, 2005; Temperature Trend During Shutdown Cooling Isolation (April 4, 2007,
e-mail attachment from Nuclear Engineering Staff to Operations Shift Manager)
Projected Equilibrium Pool/Cavity Temperatures for March 17 to April 17, 2007 (April 4, 2007,
e-mail attachment from Nuclear Engineering Staff to Operations Shift Manager)
CAP 01088848; Division II RHR and CS Pumps Failed to Start During ECCS Test
WO 325884-03; Investigate/Repair Cause of Circuit Malfunction
Troubleshooting Plan for Work Order (WO) 325884; April 22, 2007
WO 326287-01; Investigate 12 core spray pump Motor Cooling Inlet/Coils
1339; ECCS Pump Motor Cooler Flush; Revision 19
CAP 01088933; 12 CS Pump Motor Cooler Flush Flow Unacceptable
CAP 01088773; Control Rod Drive (CRD) 26-35 Displays Green Indication When Not at
00 Position
CAP 01088836; Improved TS Impact of Abnormal CRD Position Indication Not Clear
WO 00140371; Full Core Display Reads Incorrect for CRD-26-35
WO 00267320; Contingency - Repair Bad rod position indication system Indications - RFO
CAP 01088988; Leak from Elbow - Line ESW 1-4" HBD Adjacent to Valve ESW-44
CAP 01094164; Performance Issues after P-69 Pump Replacement in RFO 23
CAP 01094202; Increase Temperature and Amps on H2 Seal Oil Vacuum Gearcase/Motor
CAP 01094221; Hydrogen SOVP [Seal Oil Vacuum Pump] Making Abnormal Noises and
Failing
CAP 01091033; Hydrogen Seal Oil Tank Degraded Vacuum

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CAP 01081986; Internal Seal Welds in Safety Relief Valves May Not Meet Codes
CAP 01088367; 12 CS Pump Motor Cooler Reduced Cooling Flow
CAP 01089542; NRC Question: Is Abandoned Cable in Drywell Accounted for in Analysis?
Sargent & Lundy Evaluation 2007-06140; Acceptability of Vibration Monitoring Modification
(EC 9174) with Respect to ECCS Suction Strainer Debris Loading; Revision 00
CA-98-310; ECCS Suction Strainer Debris Loading for Prototype Strainer Test; Revision 00
CA-97-228; MNGP: ECCS Strainer Head Loss Estimates; Revision 00
CA-01-135; Evaluation of Effects of Paint Chips on Debris Loading of ECCS Suction Strainers;
Revision 00
CAP 01011457; Increase in Vibration Levels on 12 EDG
CAP 01025832; Anomaly Found in 12 EDG Vibration Data
CAP 01085173; 12 EDG Failed Vibration PMT
CAP 01093320; Unable to Located Document on Control Room Ventilation Heat Load Effect
ESW System
0255-11-III-3; 13 ESW Quarterly Pump and Valve Tests; Revision 38
Safety Review Item 88-013; Justification for Plant Operation at SW Temperatures up to 90°F;
Revision 1

Section 1R19: Post-Maintenance Testing

0255-20-IIC-1; Reactor Coolant Pressure Boundary Leakage Test; Revision 28
0255-20-IIC-2; Reactor Coolant Pressure Boundary Leakage Test; Revision 23
PEI-02.05.08; Visual Examination (VT-2) for Evidence of Leakage; Revision 0
0136; Integrated Primary Containment Leak Rate Test (Parts A & B); Revision 16
WO 292142; 0136 Integrated Primary Containment Leak Rate Test
0137 Master Local Leak Rate Test; Revision 29
WO 284610; 0127 Master Local Leak Rate Test
WO 322632; 13 Battery Replace Cells 37 (D3A) and 65 (D3B)
0193-01; No. 13 250 Vdc Battery Operability Check (Division I); Revision 21
4920; Changeout Procedure for ASCO Solenoid Valves; Revision 20
WO 303827; PM 4920 - Replace Solenoid Valve SV-2379
CAP 01095605; Increase in Vibration Levels on P-228 12 EDG Circulating Oil Pump
WO 333256; Replace Coupling Insert and Realign Pump
WO 331287; P-109B, Replace Pump

Section 1R20: Outage Activities

1371; Drywell Prestart Inspection; Revision 07
C.1; Startup Procedure; Revision 54
2300; Reactivity Adjustment; Revision 0; and Attachments for Reactor Startup 232
2159; Predicted Critical for Plant Startup; Revision 7 (Reactor Startup 232)

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0255-04-ID-5; RHR Shutdown Cooling Inboard and Outboard Supply Isolation Valve Leak Test; Revision 13
WO 0289065; 0255-04-ID-5 RHR Shutdown Cooling Inboard Supply Isolation Valve Leak Test
0255-20-IIC-1; Reactor Coolant Pressure Boundary Leakage Test; Revision 28
0255-20-IIC-2; Reactor Coolant Pressure Boundary Leakage Test; Revision 23
PEI-02.05.08; Visual Examination (VT-2) for Evidence of Leakage; Revision 0
0136; Integrated Primary Containment Leak Rate Test; Revision 16
0515; Primary Containment Visual Examination for Structural Problems; Revision 4
Engineering Action Plan to Address Low Flow to 'B' Emergency Filtration Train-ESW Components; April 2, 2007
SCR-07-0182; Modify 14 ESW Quarterly Pump and Valve Tests
0255-11-III-4; 14 ESW Quarterly Pump and Valve Tests; Revision 42; March 29, 2007
0255-11-III-4; 14 ESW Quarterly Pump and Valve Tests; Revision 43; March 31, 2007
0255-11-III-4; 14 ESW Quarterly Pump and Valve Tests; Revision 44; April 1, 2007
0136; Integrated Primary Containment Leak Rate Test (Parts A & C); Revision 16
WO 292142; 0136 Integrated Primary Containment Leak Rate Test
MNGP 2007 ILRT 0136 Appendix 18 Attachments; provided by ILRT Incorporated
0137 Master Local Leak Rate Test; Revision 29
WO 284610; 0127 Master Local Leak Rate Test
CAP 01088531; Steps in 0136 Were Missed
CAP 01088249; Step 108 of 0136 Performed Prior to Temporary Change
CAP 01088091; Procedure Step Missed During ILRT Test 0136
OSP-HPC-0563; HPCI Automatic Initiation Test; Revision 1

CAP 01088532; HPCI Control Valve (HO-8) Did Not Respond Properly on Initiation Signal 0419-01; Alternate Shutdown System Cycle Functional Test for 12 DG/Diesel Oil Transfer Pump Switches; Revision 14
CAP 01088410; Unexpected Response at Step 22 of 419-01 Alternate Shutdown System Test 0533; Containment Sump Flow Measurement Instrumentation; Revision 12
1257-A; Reactor Coolant Drywell Leak Rate Check; Revision 95
CAP01095672; Loss of Control Power for B3339
WO 156225; B3339, 4847 PM
1388; 13 DG Auto Start/Loading Test; Revision 6
OSP-ECC-0566; Low Pressure ECCS Automatic Initiation and Loss of Auxiliary Power Test; Revision 2

Section 1R23: Temporary Plant Modifications

CAP 01090085; Significant Full Wall Crack on Weld Downstream of CV-1001 Engineering Change (EC) 10745; CV-1001 Enclosure Repair of Cracked Weld
WO 327675-09; Install Temporary Modification EC 10745 for CV-1001 and Sealant
10 CFR 50.59 Screening (SCR) 07-0252; CV-1001 Enclosure Repair of Cracked Weld; Revision 0

Section 1EP6: Drill Evaluation

Controller Copy of the July 27, 2007, Monticello Emergency Plan Drill

Section 2PS3: REMP and Radioactive Material Control Program

AR 01090933 CAP; Lab Germanium Detectors Calibration Is Not Scheduled; May 3, 2007
AR 01090683 CAP; NRC Questions Whether REMP Air Samplers M-04 and M-02 are in the Same Wind Sector. The ODCM Shows Them in the Same Sector; May 3, 2007
AR 01090414 CAP; Unposted Contamination Found on the Inside of a Sealant While Performing Surveys of Miscellaneous Tools, Equipment, and Areas Outside the radiologically-controlled area; May 2, 2007
AR 01007497 CAP; REMP Upstream Invertebrate Missed; December 14, 2005
AR 01068703 CAP; Missed REMP Upstream River Sample Due to Thick Ice on the River; December 20, 2006
2005 Annual Radiological Environmental Operating Report
2006 Annual Radiological Environmental Operating Report
Offsite Radiation Dose Assessment for January 1 through December 31, 2006
Procedure 5829; REMP Air Sampler Calibration; Revision 5; November 23, 2005
Procedure I.03.39; MCA Operation/Gamma Isotopic Analysis; Revision 7
HPGe Efficiency and Energy Calibration Analysis for Detector No. 1 and 3; Geometry No. 22; March 15, 2007
RPGP-01.22; Periodic Evaluation of Monticello Radionuclide Mix; Revision 2
I.05.34; Quarterly Collection and Shipping of Environmental Thermoluminescence Dosimeter Samples; Revision 7
I.05.38; Annual Cultivated Crop Sampling; Revision 1
I.05.37; Environmental Milk Sampling; Revision 3
I.05.39; Monthly Radiological Environmental Analysis Report Verification; Revision 0
I.05.41; Annual Land Use Census and Critical Receptor Identification; Revision 3
I.05.42; Interlaboratory Comparison Program; Revision 0
I.05.35; Quarterly Environmental Ground Water Sampling; Revision 4

I.05.36; Semiannual Shoreline Sediment; Fish and Invertebrate Sampling; Revision 3
I.05.43; REMP Air-Sampler Calibration and Maintenance; Revision 1
R.06.09; Storage and Inventory of Radioactive Material Outside the Power Block; Revision 9
R.06.05; Conditional Release of Radioactive Material; Revision 13
Appendix A; Interlaboratory Comparison Program Results; Environmental, Inc.; Midwest
Laboratory; January 2006 through December 2006
7320; Monticello Meteorological Station Calibration Procedure; Revision 12
I.06.12; Meteorological/Radiological Data Review; Revision 3
RPGP-01.14; Self-Assessment Program; Revision 12
R.07.02; Area Posting; Special Status Signs and Hot Spot Stickers; Revision 28

Section 4OA1: Performance Indicator Verification

3530-09; NRC Performance Indicator - Safety System Functional Failures; Reporting Periods of
Second quarter 2006 through first quarter 2007
3530-12; NRC Performance Indicator - RCS Total Leakage Worksheet; Reporting Periods of
Second quarter 2006 through first quarter 2007
0000-J; Operations Daily Log - Part J Outplant; Revision 95
2005 Annual Radiological Environmental Operating Report
2006 Annual Radiological Environmental Operating Report
Offsite Radiation Dose Assessment for January 1 through December 31, 2006

Section 4OA2: Identification and Resolution of Problems

Monticello Operational Challenges List (printed May 2, 2007)
Monticello Operational Challenges History List (printed May 2, 2007)
OWI-01.07; Operations Department Self Assessment; Revision 26
Operable-but-Degraded/Non-Conforming List (printed May 2, 2007)
FP-PE-SW-01; Service Water and Fire Protection Inspection Program; Revision 2
SAR 0840800; Service Water Systems Focused Self-Assessment
1998 Monticello Microbiologically Influenced Corrosion Outage Summary Report
Monticello 2001 Microbiologically Influenced Corrosion Outage Summary Report
Monticello 2003 Microbiologically Influenced Corrosion Outage Summary Report
SW/MIC Program Outage Summary Report Monticello RFO 22 3/5/2005-4/3/2005
Monticello 2007 SW/Microbiologically-Influenced Corrosion Program Outage Summary Report
RFO 23
EWI-08.22.01; Generic Letter 89-013; Revision 1
CAP 01088988; Leak from Elbow - Line ESW1-4"-HBD Adjacent to Valve ESW-44
CAP 01088981; Adverse Trend: Monitoring Fails to Pre-Identify Pipe Wall Failures
CAP 01088993; Biocide Not Performed on 13/14 ESW Discharge
CAP 01098106; SW/MIC inspection program not fully effective
PEI-02.03.12; Ultrasonic Detection of Pitting; Revision 0
PEI-02.03.05; Ultrasonic Thickness Measurement; Revision 0
1386-03; ESW External Pipe Inspection Loop A and B; Revision 8
CAP 01089372; SRO Review of OBD/OBN Evaluations Not Clearly Documented in A/R
CAP 00826605; GE Part 21 Notice (SC05-03) - Potential to Exceed Low Pressure TS Safety
Limit
CAP 00717451; Low Pressure Coolant Injection Selection Logic May Not Meet USAR Break
Size Detection Requirement
CAP 01022687; SW1-18"-JF Does Not Meet Class I Design Criteria

CAP 01039272; Class II Internal Flooding Lines Don't Meet Class I Criteria
CAP 01052180; Class II Fire Lines Do Not Meet Class I Design Criteria
CAP 01056182; Motor Terminal Voltages Could Drop Below 90 Percent Rated Voltage Under Degraded Conditions Prior to Actuation of Degraded Voltage Protection
CAP 00752428; Vendor Report on Emergency Filtration Train Design and Licensing Basis Review Requires Site Acceptance
CAP 01081986; Internal Seal Welds in Safety Relief Valves May Not Meet Codes
CAP 01083634; Pieces of Reactor Vessel Insulation Missing
Department Roll-Up Meeting Results; Engineering; First Quarter 2007
Department Roll-Up Meeting Results; Maintenance; First Quarter 2007
Department Roll-Up Meeting Results; Operations; First Quarter 2007
Department Roll-Up Meeting Results; RP-Chem; First Quarter 2007
CAP 01093869; Adverse Trend in apparent cause evaluations Failing Grades
CAP 01095951; Negative Trend in Operations Performance Using Jumpers and Boots
CAP 01096071; Several Rad Material Control Events in Last Two Years
CAP 01093838; Adverse Trend of No Rework Category in Engineering Thumbs Database
CAP 01093830; Adverse Trend for Inadequate Tracking Human Performance Failure Mode
CAP 01093379; Negative Trend in SW and circulating water Chemical Treatment
CAP 01093097; Potential Adverse Trend in Contamination Area Boundary Control
CAP 01092729; Adverse Trend of human performance Induced Equipment Failures in 2006
CAP 01092701; Adverse Trend in Engineering Human Performance Event Clock Resets
CAP 01091105; Possible Adverse Trend in CAP Task Assignments
CAP 01090258; Receiving High RHR shutdown cooling Header Pressure Multiple Times
CAP 01085105; Refueling Human Performance Events
CAP 01081675; Emergent Work Challenging the Organization
CAP 01081245; Recent Increase in Worker Safety Issues
CAP 01081173; Potential Adverse Trend in Reactor and Turbine Building Crane Performance
CAP 01076706; quality assurance finding-Recurring Programmatic Issues with Site Welding Program
CAP 01075452; Continuing Adverse Trend in Procedure Use and Compliance
CAP 01075445; Potential Adverse Trend in Number of Open CAP Evaluations
CAP 01074810; Repeat Issue, Mod Packages with Admin Errors
CAP 01070732; Screen Team Effectiveness Indicator Below Fleet Expectation

Section 4OA3: Event Follow-up

0255-20-IIC-1; Reactor Coolant Pressure Boundary Leakage Test; Revision 28

LIST OF ACRONYMS USED

ASME	American Society of Mechanical Engineers
BWR	Boiling Water Reactor
CAP	Corrective Action Program
CFR	Code of Federal Regulations
CRD	Control Rod Drive
CS	Core Spray
DG	Diesel Generator
DGN	Emergency Diesel Generators
DRP	Division of Reactor Projects
ECCS	Emergency Core Cooling System
EDG	Emergency Diesel Generator
ESW	Emergency Service Water
FP	Fleet Procedure
HCU	Hydraulic Control Unit
HP	Health Physics
HPC	High Pressure Coolant Injection
HPCI	High Pressure Core Injection
IMC	Inspection Manual Chapter
ILRT	Integrated Leak Rate Test
kV	Kilovolt
LER	Licensee Event Report
MCC	Motor Control Center
MNGP	Monticello Nuclear Generating Plant
NCV	Non-Cited Violation
NEI	Nuclear Energy Institute
NRC	U.S. Nuclear Regulatory Commission
OBD	Operable-But-Degraded
OBN	Operable-But-Non-Conforming
ODCM	Offsite Dose Calculation Manual
OWA	Operator Workaround
PARS	Publicly Available Records
PI	Performance Indicator
PMT	Post-Maintenance Testing
PSIG	Pounds per Square Inch Gauge
RA	Risk Assessment
RCS	Reactor Coolant System
REMP	Radiological Environmental Monitoring Program
RETS	Radiological Environmental Technical Specifications
RFO	Refueling Outage
RHR	Residual Heat Removal
RHRSW	Residual Heat Removal Service Water
RWCU	Reactor Water Clean-Up
SDP	Significance Determination Process
SRO	Senior Reactor Operator
SSC	Structures, Systems, and Components

LIST OF ACRONYMS USED

SW	Service Water
T_{\min}	Minimum Wall Thickness
T_{nom}	Nominal Wall Thickness
TS	Technical Specification
USAR	Updated Safety Analysis Report
UT	Ultrasonic Testing
Vdc	Volts Direct Current
WO	Work Order