

April 26, 2006

EA-05-175

Mr. J. Conway
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 05000263/2006002

Dear Mr. Conway:

On March 31, 2006, 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 April 4, 2006, with Mr. Jacobs 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 and one self-revealed finding of very low safety significance, both of which involved a violation of NRC requirements. However, because these violations were of very low safety significance and because the issues were entered into the licensee's corrective action program, the NRC is treating these findings as non-cited violations in accordance with Section VI.A.1 of the NRC's Enforcement Policy.

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.

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/

Bruce L. Burgess, Chief
Branch 2
Division of Reactor Projects

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

Enclosure: Inspection Report 05000263/2006002
w/Attachment: Supplemental Information

cc w/encl: M. Sellman, Chief Executive Officer
and Chief Nuclear Officer
Manager, Regulatory Affairs
J. Rogoff, Vice President, Counsel, and Secretary
Nuclear Asset Manager, Xcel Energy, Inc.
Commissioner, 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
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J. Conway

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No: 50-263

License No: DPR-22

Report No: 05000263/2006002

Licensee: Nuclear Management Company, LLC

Facility: Monticello Nuclear Generating Plant (MNGP)

Location: Monticello, Minnesota

Dates: January 1 through March 31, 2006

Inspectors: S. Thomas, Senior Resident Inspector
S. Ray, Senior Resident Inspector
R. Orlikowski, Resident Inspector
M. Mitchell, Radiation Specialist
D. McNeil, Senior Operations Engineer
C. Brown, Reactor Engineer

Observers: None

Approved by: B. Burgess, Chief
Branch 2
Division of Reactor Projects

Enclosure

SUMMARY OF FINDINGS

IR 05000263/2006002; 01/01/2006 - 03/31/2006; Monticello Nuclear Generating Plant. Post-Maintenance Testing and Surveillance Testing.

This report covers a 3-month period of baseline resident inspection and announced baseline inspection of radiation protection. The inspections were conducted by Region III reactor inspectors 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 3, dated July 2000.

A. NRC-Identified and Self-Revealed Findings

Cornerstone: Mitigating Systems

- Green. A Green non-cited violation of 10 CFR 50, Appendix B, Criterion V, was identified by the inspectors when the licensee failed to implement existing procedural guidance for the control of clearances between installed scaffolding and plant equipment. Specifically, engineering personnel failed to perform an engineering evaluation for one scaffold that was in contact with safety-related equipment and two other scaffolds that were less than 2 inches from fire protection piping. The licensee entered the deficiencies into their corrective action program and took prompt action to bring all three scaffolds into compliance with the requirements of their scaffold control procedure.

This finding is greater than minor since it was associated with the attributes of protection against external factors and configuration control and affected the mitigating systems objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors determined that the finding was of very low safety significance because there was no actual loss of function of any of the plant safety-related systems due to the placement of the scaffold. The primary cause of this finding was related to the cross-cutting area of Human Performance. (Section 1R19)

Cornerstone: Barrier Integrity

- Green. A Green self-revealing non-cited violation of 10 CFR 50, Appendix B, Criterion V, was identified during the performance of control rod drive scram insertion time testing when an operator initiated the movement of a control rod without first verifying that the desired rod had been selected. This resulted in the insertion of an unmonitored control rod approximately five steps during the performance of the stall flow testing section of a surveillance procedure. At least two licensed operators failed to

identify that the incorrect control rod was selected prior to placing the rod movement control switch to the ROD IN position. The licensee removed the responsible individuals from licensed operator duty pending the resolution of the issue via their corrective action process.

This finding is greater than minor because it affected the Human Performance attribute under the Barrier Integrity Cornerstone. This finding was of very low safety significance because issues affecting fuel barrier screen to Green in accordance with Phase I of the Significance Determination Process for Reactor at Power situations. The primary cause of this finding was related to the cross-cutting area of Human Performance.
(Section 1R22)

B. Licensee-Identified Violations

None.

REPORT DETAILS

Summary of Plant Status

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

1. REACTOR SAFETY

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

1R04 Equipment Alignment (71111.04)

.1 Partial Walkdown (71111.04Q)

a. Inspection Scope

The inspectors performed partial walkdowns of accessible portions of trains of risk-significant mitigating systems equipment. The inspectors reviewed equipment alignment to identify any discrepancies that could impact the function of the system and potentially increase risk. Identified equipment alignment problems were verified by the inspectors to be properly resolved. 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 related equipment. Inspection activities included, but were not limited to, 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 I residual heat removal service water (RHRSW) prior to taking Division II RHRSW out-of-service for maintenance;
- Division I residual heat removal (RHR) during planned Division II RHR maintenance;
- Division II 125/250 Vdc electrical distribution system with reactor core isolation cooling (RCIC) out-of-service for maintenance; and
- RCIC during planned Division I RHR maintenance.

b. Findings

No findings of significance were identified.

.2 Complete System Walkdown (71111.04S)

a. Inspection Scope

The inspectors performed a complete walkdown of equipment for one risk significant mitigating system. The inspectors walked down the system to review mechanical and electrical equipment line-ups, 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 past and outstanding work orders (WOs) was performed to determine whether any deficiencies significantly affected the system function. In addition, the inspectors reviewed the corrective action program (CAP) database to ensure that any system equipment alignment problems were being identified and appropriately resolved.

The inspectors selected the following system to assess operability and proper equipment line-up for a total of one sample:

- emergency service water (ESW) systems.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05Q)

a. Inspection Scope

The inspectors walked down risk significant fire areas to assess fire protection requirements. 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. 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 (IPEEE), or the potential to impact equipment which could initiate or mitigate a plant transient. The inspection activities included, but were not limited to, 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 nine samples:

- Fire Zone 1B, 11 RHR and core spray pump room;
- Fire Zone 34, east electrical equipment room, 13 diesel generator and day tank;
- Fire Zone 1C, RCIC room;
- Fire Zone 4D, standby gas treatment (SBGT) system;
- Fire Zone 29, security diesel building;

- Fire Zone 16, corridor, turbine building east and west (elevation 911' and 931');
- Fire Zone 5A, reactor building 1001' elevation south;
- Fire Zone 2G, east shutdown cooling area; and
- Fire Zone 13A, lube oil storage tank room.

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 internal flooding. The inspection focused on determining whether flood mitigation plans and equipment were consistent with design requirements and risk analysis assumptions. The inspection activities included, but were not limited to, a review and/or walkdown to assess design measures, seals, drain systems, contingency equipment condition and availability of temporary equipment and barriers, performance and surveillance tests, procedural adequacy, and compensatory measures.

The inspectors selected the following equipment for a total of one sample:

- intake structure and 11 and 12 emergency diesel generator (EDG) rooms.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification Program (71111.11)

.1 Written Examination and Operating Test Results (71111.11B)

a. Inspection Scope

The inspectors reviewed the overall pass/fail results of the comprehensive biennial written tests, the annual job performance measure operating tests, and the annual simulator operating tests (required to be given per 10 CFR 55.59(a)(2)) administered by the licensee during the biennial licensed operator requalification program examinations conducted in January, February, and March 2006. The overall results were compared with the SDP in accordance with NRC Manual Chapter 0609, Appendix I, "Operator Requalification Human Performance Significance Determination Process."

b. Findings

No findings of significance were identified.

.2 Licensed Operator Requalification Simulator Testing (71111.11Q)

a. Inspection Scope

The inspectors performed a quarterly review of licensed operator requalification testing. The inspection assessed the licensee's effectiveness in evaluating the requalification program, ensuring that licensed individuals operate the facility safely and within the conditions of their license, and evaluated licensed operator mastery of high-risk operator actions. The inspection activities included, but were not limited to, a review of high risk activities, emergency plan performance, incorporation of lessons learned, clarity and formality of communications, task prioritization, timeliness of actions, alarm response actions, control board operations, procedural adequacy and implementation, supervisory oversight, group dynamics, interpretations of Technical Specifications (TS), simulator fidelity, and licensee critique of performance.

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

- A training crew during two evaluated simulator scenarios. The first scenario included a leak in the drywell with a fuel failure followed by a leak outside of primary containment, which resulted in entry into emergency operating procedures and inserting a manual reactor shutdown. The second scenario included a stuck open safety relief valve, the loss of a control rod drive pump followed by a loss of power to the reactor protection system, which resulted in entry into the emergency operating procedures, reduced reactor level, and control rod insertion using alternate methods.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12)

a. Inspection Scope

The inspectors reviewed two systems to assess maintenance effectiveness, including maintenance rule activities, work practices, and common cause issues. Inspection activities included, but were not limited to, 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 CAP documents, and current equipment performance status.

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

- C an issue-oriented review of the safety-related heating and ventilation system because it was designated as risk significant under the Maintenance Rule and the system experienced a fan shaft shear on one of the high pressure coolant injection (HPCI) room coolers; and
- an issue-oriented review of the safety-related EDGs because they were designated as risk significant under the Maintenance Rule and 12 EDG had experienced two failures associated with its engine driven fuel oil pump in the last five months.

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, but were not limited to, 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. Reviews also assessed the licensee's evaluation of plant risk, risk management, scheduling, configuration control, and coordination with other scheduled risk significant work for these activities. 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 for the following activities or risk significant systems undergoing scheduled or emergent maintenance for a total of five samples:

- unexpected failure and subsequent replacement of the rubber boot located between the V-ERF-11 blower fan suction and the V-FE-11 filter;
- RHR and RHRSW work week window;
- RCIC system out-of-service for planned maintenance;
- 14A feedwater heater level control problems with Division I RHR out-of-service for planned maintenance; and
- failure of the 12 EDG to start with the #1 starting air system selected during monthly surveillance testing.

b. Findings

No findings of significance were identified.

1R14 Operator Performance During Non-Routine Plant Evolutions and Events (71111.14)

a. Inspection Scope

The inspectors reviewed personnel performance during planned non-routine evolutions. The inspectors observed operator performance during the evolution and reviewed applicable documentation associated with each evolution. Documentation reviewed included, but was not limited to, operator logs, pre-job briefings, instrument recorder data, and procedures.

The inspectors observed the following evolutions for a total of three samples:

- operation with RCIC and HPCI suction from the torus rather than the condensate storage tank, including periodic venting of the HPCI discharge line;
- console desk and carpeting replacement in the control room; and
- rescale plant computer points CFW203 and CFW204 for reactor feedwater flow differential pressure.

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, but were not limited to, 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 six samples:

- scram discharge volume hi level switch stuck;
- HPCI stop valve, HO-7, responds unusually;
- E-14A feedwater heater level control problems;
- failed boot between V-ERF-11 blower suction and V-FE-11 filter;
- increase in vibration levels on 12 EDG; and
- failure of the 12 EDG to start.

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing (71111.19)

a. Inspection Scope

The inspectors verified that the post-maintenance test procedures and activities were adequate to ensure system operability and functional capability. Activities were selected based upon the structure, system, or component's ability to impact risk. The inspection activities included, but were not limited to, 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 post-maintenance testing activities adequately ensured that the equipment met the licensing basis, TS, and Updated Safety Analysis Report (USAR) design requirements.

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

- replace average power range monitor recirculation flow instrumentation square root modules with refurbished units;
- preventive maintenance (PM) on MO-1987, Division II RHR torus suction;
- HPCI room cooler, V-AC-8A;
- HPCI quarterly pump and valve test, subsequent to a planned HPCI maintenance outage; and
- 11 and 13 RHR pumps following pump megger testing.

b. Findings

Introduction: A Green non-cited violation (NCV) of 10 CFR 50, Appendix B, Criterion V, was identified by the inspectors when the licensee failed to implement existing procedural guidance for the control of clearances between installed scaffolding and plant equipment. Specifically, engineering personnel failed to perform an engineering evaluation for one scaffold that was in contact with safety-related equipment and two other scaffolds that were less than 2 inches from fire protection piping.

Description: On March 9, 2006, the inspectors were reviewing the configuration of scaffolding set up for planned maintenance on the Division I RHR system and identified a scaffold that was in contact with safety-related piping. The inspectors communicated this concern to the on-duty shift manager. Maintenance personnel were dispatched to investigate the scaffold configuration and verified that the scaffold was in contact with Division I RHR safety-related piping. Maintenance personnel immediately adjusted the scaffolding to provide the required 2-inch clearance and added bracing to the scaffold to prevent the scaffold from moving. The scaffolding coordinator entered the issue into their corrective action program as CAP01018071.

As part of the extent of condition review, the scaffold coordinator walked down all of the existing plant scaffolding. During the walkdown, two scaffolds erected in the intake structure were identified that did not meet the procedural requirement to be greater than

2 inches from fire protection piping. Scaffolding crews were dispatched to remove the two scaffolds. The scaffolding coordinator initiated CAP01019147 to document the issue.

After discussions with the site scaffold foreman and conducting a review of the scaffold control procedures for the three deficient scaffolds, the scaffold coordinator stated that all three scaffolds were originally constructed in accordance with the scaffold procedure requirements and were not constructed less than 2 inches from safety-related or fire protection piping. However, during the use of the scaffolds, they did not maintain the required 2-inch separation from safety-related and fire protection piping. The licensee took interim measures that required all scaffolding built in a seismic area to be braced to prevent moving until a formal revision of the scaffold control procedure was completed.

Analysis: The inspectors determined that the failure to maintain the required clearance of 2 inches between scaffolding and safety-related and fire protection piping per Procedure 8146, "Scaffold Control," was a performance deficiency warranting a significance evaluation. The inspectors concluded that the finding was greater than minor in accordance with Inspection Manual Chapter (IMC) 0612, "Power Reactor Inspection Reports," Appendix B, "Issue Disposition Screening," issued September 30, 2005. The finding involved the attributes of protection against external factors (seismic) and configuration control and affected the **mitigating systems** 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 IMC 0609, "Significance Determination Process," Appendix A, "Determining the Significance of Reactor Inspection Findings for At-Power Situations," issued November 22, 2005. The inspectors determined that the finding was of very low safety significance (Green) because there was no actual loss of function of any of the systems due to the deficient scaffolds. The finding also affected the cross-cutting area of Human Performance because licensee personnel failed to adhere to the requirements contained in the scaffold control procedure.

Enforcement: Part 50 of Title 10 of the Code of Federal Regulation, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," requires that activities affecting quality shall be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings. Licensee Procedure 4 AWI-04.05.04, "Conduct of Maintenance, Alterations, and Design Changes," is a safety-related procedure that states "workers shall adhere to WO's and procedures and request temporary changes when the document cannot be performed as written." Work Orders 00153213, 00151618, and 00142638 state that scaffolding shall be installed per Procedure 8146, "Scaffold Control." Procedure 8146 required that any scaffold installed in a designated seismic area shall have an engineering evaluation performed and direction shall be provided for installation of the scaffold to satisfy seismic requirements. The scaffold control procedure also stated that a 2-inch clearance shall be maintained between scaffold components and fire protection piping unless specifically documented in Prerequisite 13 of the procedure. Contrary to these requirements, maintenance personnel failed to maintain the required 2-inch clearance and engineering personnel failed to document justification for less than 2 inches of clearance and also failed to provide direction for installation of the scaffold to satisfy seismic requirements. Once

identified, the licensee took immediate action to bring all identified scaffold problems into compliance with procedural requirements and entered the issues into its corrective action program (CAP010180710 and CAP01019147). The licensee also initiated a corrective action to revise their scaffold control procedure to provide additional guidance on the need for adequate bracing or proper engineering evaluation prior to releasing the scaffold for use. Because this violation was of very low safety significance and it was entered into the licensee's corrective action program, this violation is being treated as an NCV, consistent with Section VI.A of the NRC Enforcement Policy. (NCV 05000263/2006002-01).

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors reviewed surveillance testing activities to assess operational readiness and to ensure that risk-significant structures, systems, and components 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 system, structure, or component could impose on the unit if the condition was left unresolved. The inspection activities included, but were not limited to, 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, impact of testing relative to performance indicator reporting, and evaluation of test data.

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

- scram discharge volume high level scram test and calibration;
- containment sump flow transmitter calibration;
- safety relief valve low-low set system quarterly tests;
- reactor water level scram and LO-LO level isolation trip unit test and calibration;
- core spray loop B quarterly pump and valve tests;
- 12 EDG/12 ESW monthly pump and valve tests; and
- control rod drive scram insertion time test.

b. Findings

Introduction: A Green self-revealing NCV of 10 CFR 50, Appendix B, Criterion V, was identified during the performance of control rod drive scram insertion time testing when an operator initiated the movement of a control rod without first verifying that the desired rod had been selected. This resulted in the insertion of an unmonitored control rod approximately five steps during the performance of the stall flow testing section of the procedure.

Description: On March 18, 2005, in preparation for the performance of Procedure 0081, "Control Rod Drive Scram Insertion Time Testing," the control room operators reduced reactor power to approximately 98 percent by adjusting recirculation flow. During this

time, edge control rod 02-23 was selected. Once power had been reduced, testing of control rod 30-51 per Procedure 0081 was commenced. Specific procedure steps which were applicable to the discussion of this performance deficiency included:

- Step 4: which states, in part, “verify that Figure 1 identified the rods to be tested, and the Nuclear Engineer has reviewed and approved the selection;”
- Step 8: which states, in part, “verify the drive-to-be-scram-tested is at Position 48;”
- Step 10: which states, in part, “connect test jumper between the Single Rod Scram Timing Test Jack (5A-J6) and to the specific drive to-be-scram-tested jack on the TIMING MARKER TEST POINT panel;”
- Step 11.a: which states, in part, “scram the drive by tripping the toggle switch of the selected drive at the TIMING MARKER TEST POINT panel;”
- Step 17: which states, in part, “with the scrammed rod at position 00, place the Rod Movement Control switch to the ROD IN position;” and
- Step 18: which states, “record on Figure 2 the stall flow indicated on the drive water flow indicator at Panel C-05 (FI-3-305) while applying the insert signal.”

At 2:13 a.m., per Step 11.a, control rod 30-51 was given a single rod scram signal and was fully inserted into the core. Since the scram signal for control rod 30-51 was produced by utilizing installed test jacks and a jumper, no physical selection of control rod 30-51 was required by the reactor operator prior to the single rod scram.

At 2:18 a.m., with control rod 02-23 still selected, the reactor operator commenced with Step 17 to obtain stall flow data for control rod 30-51. Approximately six seconds later, the reactor operator released the rod movement control switch after the shift manager identified that control 02-23 had inserted from position 48 to position 38. At this point, the evolution was stopped and actions were taken to recover the control rod per Procedure B05.05-05, “Recovery From an Inadvertent Control Rod Insertion.”

A preliminary licensee evaluation identified several factors which contributed to the occurrence of this event. These included:

- the reactor operator and the peer checker (lead reactor operator) did not verify the correct rod was selected prior to moving to the ROD IN position on the rod movement control switch;
- it was the first time that the control room supervisor and the reactor operator had performed the evolution;
- the reactor operator did not follow procedural guidance for verifying correct rod selection before attempting rod movement;
- the crew did not focus on the fundamentals associated with rod movement, but focused more heavily on procedure execution; and
- that supervisory oversight of the evolution was not sufficient to identify or prevent the wrong rod movement.

The licensee removed the responsible individuals from licensed operator duty pending the resolution of the issue via their corrective action process (CAP01019221).

Analysis: The inspectors determined that the operator initiating the movement of a control rod without first verifying that the desired rod had been selected and the subsequent unmonitored five step insertion of another control rod was a performance deficiency warranting a significance evaluation. The inspectors concluded that the finding was greater than minor in accordance with IMC 0612, "Power Reactor Inspection Reports," Appendix B, "Issue Disposition Screening," issued September 30, 2005. The finding involved the attribute of Human Performance and could have affected the Barrier Integrity objective of providing reasonable assurance that physical design barriers protect the public from radionuclide releases caused by accidents or events. The finding also affected the cross-cutting area of Human Performance because at least two licensed operators failed to verify that the correct control rod was selected prior to placing the rod movement control switch to the ROD IN position.

The insertion of the wrong control rod constituted a small unplanned reactivity change and did not significantly impact the likelihood of an event which would significantly challenge fuel integrity. Using Phase I of the SDP for reactor at-power situations, the inspectors determined the finding to be of very low safety significance (GREEN) because issues affecting the fuel barrier screen to Green.

Enforcement: Part 50 of Title 10 of the Code of Federal Regulations, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," requires that activities affecting quality be prescribed in written procedures of a type appropriate to the circumstances and be accomplished in accordance with the procedures. Contrary to the above, the inserted stall flow testing for control rod 30-51 was not accomplished in accordance with Procedure 0081, "Control Rod Drive Scram Insertion Time Test," Revision 47, resulting in control rod 02-23 being inadvertently inserted five steps. Because the mis-positioning of control rod 02-23 was of very low safety significance and has been entered into the licensee's corrective action program (CAP01019221), this violation is being treated as an NCV, consistent with Section VI.A of the NRC Enforcement Policy. (NCV 05000263/2006002-02)

1R23 Temporary Plant Modifications (71111.23)

a. Inspection Scope

The inspectors reviewed a temporary modification to assess the impact of the modification on the safety function of the associated system. The inspection activities included, but were not limited to, 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 the actual impact of the temporary modification on the permanent system and interfacing systems were adequately verified.

The inspectors selected the following temporary modification for review for a total of one sample:

- install tubing between fire header and pressure sensor PS-1971 for work on fire protection valve FP-5.

b. Findings

No findings of significance were identified.

1EP6 Drill Evaluation (71114.06)

a. Inspection Scope

The inspectors selected emergency preparedness exercises that the licensee had scheduled as providing input to the Drill/Exercise Performance Indicator (PI). The inspection activities included, but were not limited to, the classification of events, notifications to off-site agencies, protective action recommendation development, and drill critiques. Observations were compared with the licensee's observations and corrective action program entries. The inspectors verified that there were no discrepancies between observed performance and PI reported statistics.

The inspectors selected the following emergency preparedness activity for review for a total of one sample:

- the licensee's March 15, 2006, emergency plan drill to evaluate drill conduct and the adequacy of the licensee's critique of performance to identify weaknesses and deficiencies.

b. Findings

No findings of significance were identified.

2PS1 Radioactive Gaseous and Liquid Effluent Treatment and Monitoring Systems (71122.01)

.1 Inspection Planning

a. Inspection Scope

The inspectors reviewed the most current Radiological Effluent Release Report, dated April 29, 2005, to verify that the program was implemented as described in Radiological Environmental Technical Specifications/Offsite Dose Calculation Manual (RETS/ODCM) and to determine if ODCM changes were made in accordance with Regulatory Guide 1.109 and NUREG-0133. The inspectors determined if the modifications made to radioactive waste system design and operation changed the dose consequence to the public. The inspectors verified that technical and/or 10 CFR 50.59 reviews were performed when required and determined whether radioactive liquid and gaseous effluent radiation monitor setpoint calculation methodology changed since completion of the modifications. The inspectors determined if anomalous results reported in the current Radiological Effluent Release Report were adequately resolved.

The inspectors reviewed RETS/ODCM to identify the effluent radiation monitoring systems and its flow measurement devices, effluent radiological occurrence performance indicator incidents in preparation for onsite follow-up, and the USAR description of all radioactive waste systems. This review represents one sample.

b. Findings

No findings of significance were identified.

.2 Onsite Inspection

a. Inspection Scope

The inspectors walked down the major components of the gaseous and liquid release systems (e.g., radiation and flow monitors, demineralizers and filters, tanks, and vessels) to observe current system configuration with respect to the description in the USAR, ongoing activities, and equipment material condition. This review represents one sample.

The inspectors observed the routine processing (including sample collection and analysis) and release of radioactive gaseous effluent to verify that appropriate treatment equipment is used and that the radioactive gaseous effluent is processed and released in accordance with RETS/ODCM requirements. This review represents one sample.

The inspectors reviewed the records of abnormal releases or releases made with inoperable effluent radiation monitors and reviewed the licensee's actions for these releases to ensure an adequate defense-in-depth was maintained against an unmonitored, unanticipated release of radioactive material to the environment. This review represents one sample.

The inspectors reviewed the licensee's technical justification for changes made by the licensee to the ODCM as well as to the liquid or gaseous radioactive waste system design, procedures, or operation since the last inspection to determine whether the changes affect the licensee's ability to maintain effluents as low as is reasonably achievable and whether changes made to monitoring instrumentation resulted in a non-representative monitoring of effluents. This review represents one sample.

The inspectors reviewed a selection of monthly, quarterly, and annual dose calculations to ensure that the licensee properly calculated the offsite dose from radiological effluent releases and to determine if any annual RETS/ODCM (i.e., Appendix I to 10 CFR Part 50 values) were exceeded. This review represents one sample.

The inspectors reviewed air cleaning system surveillance test results to ensure that the system was operating within the licensee's acceptance criteria. The inspectors reviewed surveillance test results the licensee uses to determine the stack and vent flow rates. The inspectors verified that the flow rates were consistent with RETS/ODCM or USAR values. This review represents one sample.

The inspectors reviewed records of instrument calibrations performed since the last inspection for each point of discharge effluent radiation monitor and flow measurement device and reviewed any completed system modifications and the current effluent radiation monitor alarm setpoint value for agreement with RETS/ODCM requirements. The inspectors also reviewed calibration records of radiation measurement (i.e., counting room) instrumentation associated with effluent monitoring and release activities and the quality control records for the radiation measurement instruments. This review represents one sample.

The inspectors reviewed the results of the interlaboratory comparison program to verify the quality of radioactive effluent sample analyses performed by the licensee. The inspectors reviewed the licensee's quality control evaluation of the interlaboratory comparison test and associated corrective actions for any deficiencies identified. The inspectors reviewed the licensee's assessment of any identified bias in the sample analysis results and the overall effect on calculated projected doses to members of the public. In addition, the inspectors reviewed the results from the licensee's quality assurance audits to determine whether the licensee met the requirements of the RETS/ODCM. This review represents one sample.

b. Findings

No findings of significance were identified.

.3 Identification and Resolution of Problems

a. Inspection Scope

The inspectors reviewed the licensee's self assessments, audits, licensee event reports, and special reports related to the radioactive effluent treatment and monitoring program since the last inspection to determine if identified problems were entered into the CAP for resolution. The inspectors also verified that the licensee's self-assessment program was capable of identifying repetitive deficiencies or significant individual deficiencies in problem identification and resolution.

The inspectors also reviewed corrective action reports from the radioactive effluent treatment and monitoring program since the previous inspection, interviewed staff and reviewed documents 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 NCVs tracked in the corrective action system; and
- implementation/consideration of risk significant operational experience feedback.

This review represents one sample.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification (71151)

Cornerstones: Initiating Events

.1 Reactor Safety Strategic Area

a. Inspection Scope

The inspectors' review of PIs used guidance and definitions contained in Nuclear Energy Institute Document 99-02, Revision 2, "Regulatory Assessment Performance Indicator Guideline," to assess the accuracy of the PI data. The inspectors' review included, but was not limited to, conditions and data from logs, licensee event reports, corrective action program documents, and calculations for each PI specified.

The following PIs were reviewed for a total of three samples:

- Unplanned Scrams per 7000 Critical Hours, for the period of January 2004 through December 2005;
- Unplanned Scrams with Loss of Normal Heat Removal, for the period of January 2004 through December 2005;
- Unplanned Power Changes per 7000 Critical Hours, for the period of January 2004 through December 2005.

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems (71152)

Cornerstone: 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 Corrective Action Program Reviews

a. Inspection Scope

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

b. Findings

No findings of significance were identified.

.3 Annual Sample: Electrolytic Capacitors – Age-Related Degradation of Electronic Components (ARDEC)

a. Inspection Scope

On November 3, 2004, in response to NRC identification, the licensee wrote CAP035589, "250 Vdc Charger PMs have not been performed in accordance with MNGP [Monticello Nuclear Generating Plant] PM Program." The CAP detailed that the electrolytic capacitors in each of the 250 Vdc battery chargers (D52, D53, D54, D70, D80, and D90) had exceeded the recommended installed lifetime. The inspectors

chose to perform an in-depth review of the licensee's corrective actions for this issue and the licensee's program for aging electrolytic capacitors in general. The inspectors reviewed the current status of CAP035589; a search of all corrective action documents associated with electrolytic capacitors; Procedure EWI-10.01.01, "Electronic Component Aging Management Process Implementation," Revision 2; Fleet Procedure FP-E-CAP-01, "Electrolytic Capacitor Aging Management," Revision 0; and WOs associated with the battery chargers. Previous CAPs and WOs pertaining to electrolytic capacitors were also reviewed to ensure that the licensee's corrective actions were commensurate with the significance of previously identified issues.

b. Issues

The inspectors reviewed the actual work completion dates for repairing the battery chargers noted in CAP033589 and found that the repairs for five of the six battery chargers had been accomplished in November and December 2005 – more than a year after CAP033589 was written. The inspectors did note that the licensee had been monitoring the battery charger performance between November 2004 and the repair dates. The system engineer had used EWI-10.01.01, "Electronic Component Aging Management Process Implementation," Revision 2, in monitoring the battery charger performance.

The inspectors noted that AR00877724, "No Apparent Process In-Place to Manage Critical Electronic Components in Stock," had been initiated on August 17, 2005, and Fleet Procedure FP-E-CAP-01 had been implemented at MGNP on September 1, 2005. On January 31, 2006, equipment aging (including electrolytic capacitors) was listed as No. 1 of the "Top 10 Equipment Issues." The "Solution" listed was to implement a capacitor replacement procedure, new warehouse storage requirements, and approved and prioritized ARDEC modifications. The action items "Implement Fleet Procedure FP-E-CAP-01, Capacitor Aging (OTH025317)" and "Implement W/H [warehouse] shelf life process for critical electronic spares (OTH025661)" were both listed as complete. However, further investigation revealed that neither action had been completed. Instead, both actions had been closed to a new action item to develop a change management plan to accomplish the actions with a due date of July 1, 2006. Discussion with the licensee staff determined that date would correspond with hiring a contractor to perform the change management plan.

The inspectors reviewed a licensee developed listing of ARDEC related modifications, instruments assigned a refurbishment PM, instruments assigned a replacement PM, and warehouse components to be controlled. The inspectors also reviewed the CAPs written on components with aged electrolytic capacitors. The lists appeared to be thorough and comprehensive; however, the extent of the deficiencies was large and, as noted, the program was relatively new at MNGP.

No findings of significance were identified.

.4 Annual Sample: Operator Workaround Evaluation

a. Inspection Scope

The inspectors evaluated the licensee's implementation of their process which is 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:

- operator workarounds;
- non-transient operator workarounds;
- control room deficiencies;
- control room "black board" challenges; and
- accelerated testing (for equipment with performance issues).

The inspectors attempted to identify operator workarounds that had not been identified and evaluated by the licensee. Specifically, those issues which:

- required operations contrary to past training or required more detailed knowledge of a system that 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, work order backlogs, 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.

4OA3 Event Follow-up (71153)

.1 Emergency Filtration Fan Declared Inoperable

On February 2, 2006, at 4:51 a.m., the licensee made a 10 CFR 50.72 8-hour non-emergency report which discussed the inoperable status of both emergency filtration ventilation (EFT) trains. The condition was identified subsequent to the automatic tripping of the "A" EFT which was caused by the failure of a rubber boot located at the suction of the fan that services the "A" EFT train. The licensee declared both "A" and "B" EFT trains inoperable due to the unevaluated impact that the failure had on the "B" EFT train and the as-found condition of a similar boot for the "B" EFT train fan.

The inspectors evaluated the licensee's initial response to this event, which included the prompt replacement of the rubber boots for both EFT trains. No significant issues were identified during the initial evaluation.

4OA5 Other Activities

.1 Implementation of Temporary Instruction (TI) 2515/165 - Operational Readiness of Offsite Power and Impact on Plant Risk

a. Inspection Scope

The objective of TI 2515/165, "Operational Readiness of Offsite Power and Impact on Plant Risk," was to confirm, through inspections and interviews, the operational readiness of offsite power systems in accordance with NRC requirements. From March 20 to March 24, 2006, the inspectors reviewed licensee procedures and discussed the attributes identified in TI 2515/165 with licensee personnel. In accordance with the requirements of TI 2515/165, the inspectors evaluated the licensee's operating procedures used to assure the functionality/operability of the offsite power system, as well as, the risk assessment, emergent work, and/or grid reliability procedures used to assess the operability and readiness of the offsite power system.

The information gathered while completing this TI was forwarded to the Office of Nuclear Reactor Regulation for further review and evaluation.

b. Findings

No findings of significance were identified.

.2 (Closed) Violation 05000263/2005003-05: "Failure to Report Inadvertent Engineered Safety System Actuations during Testing"

On April 2, 2005, performance of an inadequately written and reviewed post-maintenance test resulted in a temporary loss of the electrical bus 16 and actuation of the reactor building ventilation isolation system, the "A" SBT system, and the "A" control room EFT and a partial primary containment group II isolation. The licensee did not make an 8-hour notification to the NRC in accordance with

10 CFR 50.72 because the licensee determined that the actuation was "invalid" because the initial sensed loss of power signal was invalid (bus 16 was still energized at the time). The NRC position was that the systems actuated as designed due to valid plant conditions, even though the cause of the loss of voltage was an invalid signal to the bus transfer logic. Despite being given the NRC position, the licensee failed to notify the NRC Operations Center of the event, in accordance with 10 CFR 50.72. On July 27, 2005, a Notice of Violation was issued to the licensee for the failure to report inadvertent engineered safety systems actuations during testing. (EA-05-175)

In a response letter dated January 23, 2006, the licensee stated that they are no longer contesting the violation originally transmitted in NRC Inspection Report 2005003 for failure to report a partial Group II isolation. The licensee also reenforced their position that they continue to disagree with the NRC position that a violation of NRC reporting requirements occurred. The licensee's letter indicated that they recently formally reaffirmed to operations that if there is a doubt regarding reportability, to report. If a detailed subsequent analysis determines that the event was not reportable, then a retraction of the reportable events will be made, including a rationale for why the event was not reportable. After careful consideration of all aspects of this issue, the inspectors find the licensee's corrective action and their response acceptable.

.3 Review of World Association of Nuclear Operation (WANO) Report

The inspectors and the Branch Chief completed a review of the final WANO report dated July 2005.

40A6 Meetings

.1 Exit Meeting

The inspectors presented the inspection results to Mr. Jacobs and other members of licensee management on April 4, 2006. 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 Environmental Monitoring Program inspection with Mr. R. Jacobs, Site Director, on January 27, 2006; and
- Biennial Operator Requalification Program Inspection with Mr. G. Alex on March 6, 2006.

40A7 Licensee-Identified Violations

None.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

J. Conway, Site Vice President
R. Jacobs, Site Director for Operations
B. Sawatzke, Plant Manager
R. Baumer, Licensing
K. Jepsen, Radiation Protection Manager
J. Fields, Regulatory Affairs Manager (Acting)
G. Allex, Requalification Program Lead

Nuclear Regulatory Commission

B. Burgess, Chief, Reactor Projects Branch 2

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened and Closed

05000263/2006002-01	NCV	Failure to Implement Existing Procedural Guidance for the Control of Clearances Between Installed Scaffolding and Plant Equipment (Section 1R19)
05000263/2006002-02	NCV	Unmonitored Control Rod Movement During Control Rod Testing (Section 1R22)

Closed

05000263/2005003-05	VIO	Failure to Report Inadvertent Engineered Safety System Actuations During Testing (Section 4OA5.2)
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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 or portions of the documents were evaluated as part of the overall inspection effort. Inclusion of a document on this list does not imply NRC acceptance of the document or any part of it, unless this is stated in the body of the inspection reports.

Section 1R04: Equipment Alignment

2121; Plant Prestart Checklist, RCIC System; Revision 14
2126-03; Plant Prestart Checklist 250 Vdc Batteries and Direct Current Power System
2154-12; RHR System Prestart Valve Checklist; Revision 41
2154-13; RCIC System Prestart Valve Checklist; Revision 25
2154-22; EDG ESW System Prestart Valve Checklist; Revision 21
2154-23; RHRSW System Prestart Valve Checklist; Revision 26
2154-34; ESW System Prestart Valve Checklist; Revision 23
0395; ASDS Cycle Functional Test for Division II RHRSW, ESW Switches and Control Room Annunciator for ASDS Master Transfer Switch; Revision 10
M-110; Service Water System; Revision BW
M-112; RHRSW and ESW Systems; Revision BR
M-125; RCIC (steam side); Revision AS
M-126; RCIC (water side); Revision AF
M-811; Service Water System and Makeup Intake Structure; Revision CJ
CAP01008240; Actions Documented in Apparent Cause Evaluation 004353 Will Not Prevent Reoccurrence
CAP01008297; RHRSW Keep Fill Connection Configuration Susceptible to Silt
CAP01008347; Some Service Water Modifications May Inadvertently Create New Problems

Section 1R05: Fire Protection

A.3-34; East Electrical Equipment Room, 13 Diesel Generator and Day Tank; Revision 8
A.3-01-B; 11 RHR and CS Pump Room; Revision 3
A.3-01-C; RCIC Room; Revision 4
A.3-04-D; SGBT System; Revision 5
A.3-29; Security Diesel Building; Revision 6
A.3-16; Corridor, Turbine Building East and West (Elevation 911' and 031'); Revision 10
A.3-02-G; East Shutdown Cooling Area; Revision 3
A.3-05-A; Reactor Building 1001' Elevation South; Revision 6
A.3-13-A; Lube Oil Storage Tank Room; Revision 4
CAP034515; Acceptability of Detector Above Roll Up Door in Non-1E Room Questioned by NRC (NRC Identified)
CAP01010384; Fire Extinguisher Installed about Sensing Lines for RHR Minimum Flow C (NRC Identified)
CAP01012888; Duct Tape Found on the Discharge Ductwork of V-FU-3 (NRC Identified)

Section 1R06: Flood Protection Measures

1243; Circulating Water Pump Flood Trip Test; Revision 3
CAP01010140; Access Door Found Open on RHRSW Pump Motor Hood S-209
(NRC Identified)

Section 1R11: Licensed Operator Regualification Program

Simulator Evaluation Guide RQ-SS-05; Leak in the Drywell with Fuel Failure and Blowdown;
Revision 23
Simulator Evaluation Guide RQ-SS-44; Stuck Open Safety Relief Valve, Loss of the Control
Rod Drive Pump, and Loss of Load Center LC-101; Revision 0
Monticello Licensed Operator Regualification Program Results

Section 1R12: Maintenance Effectiveness

CA-96-020; HPCI Room Transient Temperature Calculation; Revision 4
CAP030101; Re-Analysis of HPCI Room Heatup Shows Environmental Qualification Limit Is
Exceeded When Additional Uninsulated Components Are Considered
CAP01010394; Bearing Defects in V-AC-8B, HPCI Room Cooling Unit Fan
CAP040014; HPCI Room Cooler Doesn't Start in Manual and May Not Start in Automatic
CAP01012884; Maintenance Rule Program Does not Adequately Monitor HPCI Room Coolers
(NRC Identified)
WO0600097; Replace Fan Bearings
WO0507483; Fan Shaft Sheared Off
Electro-Motive Maintenance Instruction 4110; Fuel and Soak Back Pumps; Revision C
CAP01001783; Fuel Oil Leak From #12 EDG Requires Emergency Shutdown
Monticello Maintenance Rule Program System Basis Document; Diesel Generators; Revision 1
WO0508398; Pipe Nipple Broke Of In Engine Driven Fuel Pump
WO0157571; #12 EDG, Repair Shaft Driven Fuel Oil Pump Leak
0187-02B; 12 EDG/12 ESW Monthly Pump and Valve Tests; Revision 3

Section 1R13: Maintenance Risk Assessments and Emergent Work Control

CAP01013115; Failed Boot Between V-ERF-11 Blower Suction and V-FE-11 Filter
Control Room Operator Logs for the period of February 7 through February 9, 2006
Work Week 6109 (2/5/2006 - 2/11/2006) Work Order list
Work Week 0606 (6109) Schedule
Work Week 0607 (6110) Schedule
WO0506094; PM 4900-01 for Valve MO-2096
WO0506095; PM 4900-01 for Valve MO-2100, VIPER Test
Control Room Operator Logs for the period of February 11 through February 14, 2006
CAP01016377; E-14A Feedwater Heater has Level Control Problems
RWP00000614-00; Place CV-1017/P Positioner in Bypass and Troubleshooting Activities
Bechtel Corporation Inspection Report 5, Reference No. 2556, dated December 14 to 16, 1968
(documented initial performance testing for 12 EDG)
Apparent Cause Evaluation 000169; Start Failure Occurred on #12 EDG on First Start
CAP01020570; 12 EDG Failure to Start During Performance of 0187-02B

Section 1R14: Operator Performance During Non-Routine Plant Evolutions and Events

Ops Man B.03.02-05 Part G.2; Manual Switchover of HPCI Suction from Condensate Storage
Tanks to the Torus; Revision 28
WO00142884; Rescale Plant Computer Points CFW203 and CFW204

CA-04-152; Uncertainty for Reactor Feedwater Flow Inputs to the Plant Computer Reactor Power Computation; Revision 0
CAP040055; Conservative Error in Feedwater Flow Range in Plant Computer
CA-98-117; Corrected Span Calculation for Feedwater Flow Transmitters for Rerate Conditions; Revision 0

Section 1R15: Operability Evaluations

CAP01009207; Level Switch LS-7428F, Scram Discharge Volume Hi Level Switch Stuck
CAP037456; Level Switch LS-7428F, Scram Discharge Volume Hi Level Switch Stuck
CAP01013112; HPCI Turbine Stop Valve (HO-7) Responds Unusually
Control Room Operator logs for the period of February 1 through February 9, 2006
1047-02; Operations Control Room Checklist; Revision 87
CAP01016377; E-14A Feedwater Heater has Level Control Problems
CAP01013115; Failed Boot Between V-ERF-11 Blower Suction and V-FE-11 Filter
CAP01011457; Increase in Vibration Levels on 12 EDG
CAP01020570; Received Unexpected Alarm C08-C-27 (Failure of the #12 EDG to Start)
OPR01020570-01; G-3B (12 EDG) Operability Recommendation
CAP000655; Start Failure Occurred on #12 EDG on First Start Attempt
CAP012675; Received 12 EDG Start Failure Alarm and Engine Cranking Alarms Upon Initial Start of 12 EDG Following Maintenance

Section 1R19: Post-Maintenance Testing

0026; APRM-Recirculation Flow Instrumentation Calibration; Revision 33
WO0507760; Replace Square Root Modules with Refurbished Units
4900-02-PM; Rotork Motor Operated Valves - Inspection and Maintenance; Revision 18
WO0506068; PM 4900-2 for MO-1987
0255-06-1A-1; HPCI Quarterly Pump and Valve Tests; Revision 74
0255-06-11C-1; HPCI Leakage Test; Revision 4
1204; Systems Leakage Check Procedure, HPCI System; Revision 9
CGD-2006-001; Commercial Grade Dedication for Replacement Blower Wheel for HPCI Room Cooler V-AC-8A
CGD-2006-003; Commercial Grade Dedication for Replacement Shaft for HPCI Room Cooler V-AC-8A
WO0507483; Fan Shaft Sheared Off
CAP01019147; Scaffolds Found in Intake Less than 2 Inches from Fire Line
CAP01018071; Scaffold in RHR Room at Valve MO-1988 Contacting Safety-Related Pipe (NRC Identified)
8146; Scaffold Control; Revision 21
WO00153213-01; MO-1988, Install Scaffolding
WO00153213-02; MO-1988, Perform Mechanical and Electrical Preventative Maintenance
WO00153213-03; MO-1988, Remove Scaffolding
WO00153213-04; MO-1988, Perform Post Maintenance Testing
3749; Monticello Impact Statement for Preventative Maintenance on MO-1988, RHR Division I Shutdown Cooling Suction; Revision 7
4900-02-PM; Rotork Motor Operated Valves - Inspection and Maintenance; Revision 18
WO00152875-01; Megger 11 RHR Pump P-202A
WO00152876-01; Megger 13 RHR Pump P-202C

8146; Scaffold Control Procedure for Scaffold 06-005; Revision 21
8146; Scaffold Control Procedure for Scaffold 06-025; Revision 22-202C
WO00142638; Replace Check Valves SW-21-1/SW-22-1 Due to Leakage

Section 1R22: Surveillance Testing

0006; Scram Discharge Volume Hi Level Scram Test and Calibration Procedure; Revision 22
0533; Containment Sump Flow Measurement Instrumentation; Revision 6
0397-A; Safety Relief Valve Low-Low Set System Quarterly Tests; Revision 11
0255-03-IA-1-2; Core Spray Loop B Quarterly Pump and Valve Tests; Revision 43
CAP01009207; LS-7428F - Scram Discharge Volume Hi Level Switch Stuck During
Performance of Procedure 0006
0004; Reactor Water Low Level Scram and LO-LO Level Isolation Trip Unit Test and
Calibration Procedure; Revision 26
0187-02B; 12 EDG/12 ESW Monthly Pump and Valve Tests; Revision 3
Operator Logs; dated March 18, 2006
CAP01019221; Control Rod Inadvertent Insertion From 48 to 38 During Test
0081; Control Rod Drive Scram Insertion Time Test; Revision 47

Section 1R23: Temporary Plant Modifications

T-Mod EC 1127; Install Tubing Between Fire Header and PS-1971 for FP-5 Work; Revision 0
WO152904; Install Tubing Between PS-1971 and PI-3046

Section 1EP6: Drill Evaluation

Emergency Plan Drill Guide; dated March 15, 2006
A.2-101; Classifications of Emergencies; Revision 35
A.2-102; Notification of Unusual Event; Revision 18
A.2-103; Alert; Revision 17
A.2-104; Site Area Emergency; Revision 17
A.2-105; General Emergency; Revision 17

Section 2PS1: Radioactive Gaseous And Liquid Effluent Treatment And Monitoring Systems

Updated Safety Analysis Report Section 5; Revision 22
30-Day Special Report: Failure of Wide Range Radiation Monitor Electronic Process Flow
Probe; dated November 30, 2005
Observation Report 2005-004-5-007; Nuclear Oversight Observation Report Radiological
Protection; dated December 15, 2005
MNGP Plant Interlaboratory Comparison Data Second Quarter 2004 to Third Quarter 2005
MNGP 0147-02; B Train SBTG System Filter Tests; Revision 28
MNGP 0149-02; B Train SBTG Charcoal Absorber Cartridge Test; Revision 0
MNGP 0253-01; SBTG Train Quarterly Test; Revision 29
MNGP 0253-02; SBTG Train B Testing; Revision 31
MNGP 0363-02; Reactor Building Vent Wide Range Gas Monitor Process and Sample Flow
Instrument Calibration Procedure; Revision 9
MNGP 0372-01; Stack Wide Range Gas Monitor Process and Sample Flow Instrument
Calibration Procedure; Revision 2
MNGP 1.05.27; Reactor Building Vent Noble Gas Sampling; Revision 4
CAP021716; Unplanned Limiting Condition of Operation Entry Due to Failed A Stack Wide
Range Gas Monitor; dated May 28, 2004

CAP035701; Inconsistent Purge Operations Found on Reactor Building Vent; dated November 9, 2004
CAP036468; Reactor Building Vent Wide Range Gas Monitor Iodine Release Rate Increases Indicate a Potential Steam Leak; dated December 30, 2004
CAP038659; Reactor Building Vent Wide Range Gas Monitor A Failed to Purge; dated April 12, 2005
CAP39602; Four Holes Blowing Air on the Inner North Wall on 1027 Above Wide Range Gas Monitor Flow Probes; dated June 22, 2005
CAP039296; Velocity Probe V-EF-22 A Reactor Building Vent Wide Range Gas Monitor Out of As-Found; dated June 1, 2005
CAP040925; Reactor Building Vent Wide Range Gas Monitor Process Flows Differ by Greater Than 1.3 Times; dated September 22, 2005
AR 00829446; Velocity Probes for Reactor Building Vent Wide Range Gas Monitor Are Preconditioned; dated April 5, 2005
AR 0755632; Unplanned Limiting Condition of Operation on B Reactor Building Vent Wide Range Gas Monitor Due to Valving Error; dated September 22, 2004
AR 00805469; Unexpected Alarm C04-b-7; Turbine Building Normal Waste Sump Monitor Hi/Inop; dated April 26, 2005

Section 4OA1: Performance Indicator Verification

3530-04; PI Unplanned Power Change Worksheets (3); July 12, 2004
3530-04; PI Unplanned Power Change Worksheet; October 1, 2004

Section 4OA2: Identification and Resolution of Problems

CAP01017052; NRC Identified Laundry Cart Stored Under Cable Tray in Reactor Building (NRC Identified)
OWI-01.07; Operations Department Self Assessment; Revision 25
Monticello Operational Challenges History List
Monticello Operational Challenges List

LIST OF ACRONYMS USED

ARDEC	Age-Related Degradation of Electronic Components
AWI	Administrative Work Instruction
CAP	Corrective Action Program
CFR	Code of Federal Regulations
DRP	Division of Reactor Projects
DRS	Division of Reactor Safety
EDG	Emergency Diesel Generator
EFT	Emergency Filtration Train
ESW	Emergency Service Water
EWI	Engineering Work Instruction
HPCI	High Pressure Coolant Injection
IMC	Inspection Manual Chapter
IPEEE	Individual Plant Examination of External Events
IR	Inspection Report
MNGP	Monticello Nuclear Generating Plant
NCV	Non-cited violation
NMC	Nuclear Management Company
NRC	U.S. Nuclear Regulatory Commission
PARS	Publicly Available Records
PI	Performance Indicator
PM	Planned or Preventative Maintenance
RA	Risk Assessment
RCIC	Reactor Core Isolation Cooling
RETS/ODCM	Radiological Environmental Technical Specifications/Offsite Dose Calculation Manual
RHR	Residual Heat Removal
RHRSW	Residual Heat Removal Service Water
SBGT	Standby Gas Treatment
SDP	Significance Determination Process
TI	Temporary Instruction
TS	Technical Specification
USAR	Updated Safety Analysis Report
Vdc	Volts Direct Current
WANO	World Association of Nuclear Operation
WO	Work Order