

January 22, 2007

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 05000263/2006005

Dear Mr. Conway:

On December 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 January 4, 2007, with you and other members of your staff.

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

Based on the results of this inspection, there were two NRC-identified findings and one self-revealed finding of very low safety significance, all of which involved violations 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. Additionally, a 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

J. Conway

-2-

Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and the Resident Inspector Office at the Monticello Nuclear Generating Plant.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC 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 05000263/2006005; 05000263/2006013  
w/Attachment: Supplemental Information

cc w/encl: M. Sellman, President and Chief Executive 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

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No: 50-263

License No: DPR-22

Report No: 05000263/2006005

Licensee: Nuclear Management Company, LLC

Facility: Monticello Nuclear Generating Plant

Location: Monticello, Minnesota

Dates: October 1 through December 31, 2006

Inspectors: S. Thomas, Senior Resident Inspector  
L. Haeg, Resident Inspector  
J. Adams, Senior Resident Inspector, Prairie Island  
M. Mitchell, Health Physicist  
T. Go, Health Physicist  
M. Garza, Emergency Response Specialist

Observers: None

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

Enclosure

## SUMMARY OF FINDINGS

Inspection Report 05000263/2006005; 10/01/2006 - 12/31/2006; Monticello Nuclear Generating Plant. Fire Protection, Maintenance Risk Assessments and Emergent Work Control, and Permanent Plant Modifications.

This report covers a 3-month period of baseline resident inspection, announced baseline inspections of radiation protection, and baseline inspection of emergency preparedness. The inspections were conducted by Region III reactor inspectors, regional radiation specialist inspectors, a regional emergency response specialist, and the resident inspectors. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter 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: Initiating Events**

- Green. A self-revealed finding of very low safety significance was identified for a violation of 10 Code of Federal Regulations (CFR) 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," when an unexpected half scram occurred on October 3, 2006. Specifically, the half scram occurred due to the licensee's failure to fully evaluate the impact of installing test equipment used to perform Work Order 293156, "Document Operating Point of FCI SDV Level Switches." The inspectors determined that the performance deficiency affected the cross-cutting area of Human Performance, having Work Control components, and involving aspects associated with the failure to appropriately coordinate the work activity by incorporating actions to address the operational impact of the testing.

This finding was more than minor because the performance deficiency affected the procedure quality attribute of the Initiating Events cornerstone's objective of limiting the likelihood of events that upset plant stability. The inspectors determined that the finding was of very low safety significance because the finding did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions would not be available. (Section 1R13)

#### **Cornerstone: Mitigating Systems**

- Green. A finding of very low safety significance was identified by the inspectors for a violation of 10 CFR 50, Appendix R, Section III.I.3.e, when the licensee did not demonstrate the minimum-required attributes to successfully complete a required quarterly announced fire brigade drill. Specifically, by completely pre-briefing the fire brigade members and the control room staff on the exact fire scenario just prior to the execution of the drill, the licensee was unable to effectively assess the fire brigade's

selection and use of equipment and fire fighting strategies; each brigade member's knowledge of his or her role in the fire fighting strategy for the area assumed to contain the fire; and the fire brigade leader's direction of the fire fighting effort as to thoroughness, accuracy, and effectiveness. Specific corrective actions taken by the licensee to address this issue included counting the specific drill as unsuccessful, re-performing the drill for the specific fire brigade within 30 days of the unsuccessful drill, and revising the fire drill procedure to eliminate the pre-briefing of fire scenarios during announced fire brigade drills. The inspectors determined that the performance deficiency affected the cross-cutting area of Problem Identification and Resolution, having Self and Independent Assessment components, and involving aspects associated with the failure to conduct independent assessments of sufficient scope and depth to identify the deficiencies associated with the conduct of their announced fire brigade drills.

The finding was more than minor because the failure to conduct adequate announced fire brigade drills could adversely impact the fire brigade's ability to fight a fire. The finding was related to the performance of the fire brigade and was not suitable for SDP evaluation. Therefore, the finding was reviewed by NRC management and determined to be of very low safety significance due to the licensee's demonstration of at least minimal fire brigade capability combined with credit for installed fixed fire protection systems and robust plant design. (Section 1R05.2)

#### **Cornerstone: Barrier Integrity**

- Green. A finding of very low safety significance was identified by the inspectors for a violation of 10 CFR 50, Appendix B, Criterion III, when the licensee failed to incorporate current licensing basis information into the engineering change package and 50.59 screening for a modification of safety-related equipment associated with the south spent fuel pool diffuser piping prior to the implementation of the modification. Specifically, both the engineering change package and associated 50.59 screening referenced the spent fuel pool level requirements as outlined in the Custom Technical Specifications, and did not consider the requirements of the station's current design basis under Improved Technical Specifications. Once identified, the licensee immediately stopped the work associated with the engineering change, restored the spent fuel pool level, and entered the issue into their corrective action program. The inspectors determined that the performance deficiency affected the cross-cutting area of Human Performance, having Work Control components, and involving aspects associated with the failure to effectively implement those procedures prior to the implementation of the design change associated with the south spent fuel pool sparger.

The finding was more than minor because the performance deficiency affected the spent fuel pool cooling system design control attribute associated with the Barrier Integrity Cornerstone's objective to provide reasonable assurance that physical design barriers (fuel cladding, reactor coolant system, and containment) protect the public from radio nuclide releases caused by accidents or events. Per Inspection Manual Chapter 0609, Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations," the issue was determined to be of very low safety significance

because the inspectors determined that the finding only represented a degradation of the radiological barrier function provided by the spent fuel pool. (Section 1R17)

**B. Licensee-Identified Violations**

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

## 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**

#### 1R01 Adverse Weather (71111.01)

##### a. Inspection Scope

The inspectors reviewed the licensee's winter checklist procedure and performed a plant walkdown, specifically focusing on safety significant equipment that had the potential to be negatively impacted by extreme cold weather and the licensee's efforts to protect that equipment. The inspectors reviewed plant specific design features for the systems and implementation of the procedures for responding to or mitigating the effects of cold weather.

The inspectors evaluated readiness for seasonal susceptibilities for a total of one sample:

- site cold weather preparations.

##### 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 mitigating systems 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 related equipment. Inspection activities included, but were not limited to, a review of the licensee's procedures, verification of equipment alignment, and an evaluation of material condition, including operating parameters of in-service equipment.

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

- 12 emergency service water (ESW) system with 11 emergency diesel generator (EDG) out-of-service for maintenance;
- low pressure coolant injection Train A during planned maintenance on Train B residual heat removal (RHR) motor-operated valves;
- Division I 480/4160 V distribution with 12 EDG out-of-service for planned maintenance; and
- 11 and 12 standby liquid control (SBLC) systems following quarterly testing.

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 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, or the potential to impact equipment which could initiate or mitigate a plant transient. Areas of inspection 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 11 samples:

- Fire Zone 7-B, (250V Division I battery room);
- Fire Zone 7-C, (125V Division II battery room);
- Fire Zone 13-C, (turbine building 911' elevation east motor control center area);
- Fire Zone 14-C, (railroad car area (turbine building));
- Fire Zone 14-B, (isophase bus area);
- Fire Zone 6, (refuel floor);
- Fire Zone 23-B, (intake structure corridor);
- Fire Zone 18-A, (hot machine shop);
- Fire Zone 18-B, (oil drum storage room);
- Fire Zone 19-A, (make-up demineralizer area); and
- Fire Zone 41, (sodium hypochlorite building).

b. Findings

No findings of significance were identified.

.2 Annual Fire Drill Review (71111.05A)

a. Inspection Scope

The inspectors reviewed fire drill activities to evaluate the licensee's ability to control combustibles and ignition sources, utilize fire fighting equipment, and their ability to mitigate fire related events. Specific areas of inspection included observing the fire brigade's simulated use of fire fighting equipment which was utilized to extinguish a simulated fire, effectiveness of communications amongst fire brigade members and the control room, fire brigade leader command and control of the fire brigade, and observation of the post-drill critique.

The inspectors observed the following fire drills for a total of two samples:

- the licensee's fire brigade response to an announced fire drill in the cable spreading room on October 1, 2006; and
- the licensee's fire brigade response to an announced fire drill in the heating boiler room on October 19, 2006.

b. Findings

Introduction: A finding of very low safety significance was identified by the inspectors for a violation of 10 CFR 50, Appendix R, Section III.1.3.e, when the licensee did not demonstrate the minimum required attributes to successfully complete a required quarterly announced fire brigade drill.

Description: On October 1, 2006, shortly after arriving onsite to observe the conduct of the drill, the inspector noted that the entire fire brigade and the operators in the control room were participating in a pre-brief for the upcoming fire-brigade drill. Topics discussed in the pre-brief included: identification of all brigade members; the specific location of the fire; a detailed discussion of the pre-fire strategy that would be implemented; fire equipment that would be used to fight the fire; access and egress routes; availability of automatic suppression and what to do if it did not work; potential hazards located in the fire area; and fire dampers and ventilation that served the affected area. The actual drill was conducted approximately 15 minutes after the conclusion of the briefing.

The location selected for the fire brigade drill was the cable spreading room. Even though plant procedures require a reactor scram and a control room evacuation for a cable spreading room fire exceeding a short period of time, the inspectors did not notice any sense of urgency on the part of the fire brigade during the initial response. The conduct of the drill was complicated by the fact that there were no licensee fire protection staff or drill controllers facilitating the drill. No props were used to inform the fire brigade of simulated plant conditions, so by default, the fire brigade leader was forced to provide this information. The inspectors questioned the effectiveness of the

drill due to the significant amount of artificiality, which included: all responders knowing the fire location prior to the drill; the fire brigade leader performing drill controller duties in addition to their brigade leader duties; self-contained breathing apparatus faceplates not being worn during the drill; and all actions, fire mitigation equipment, radios, smoke removal equipment and turnout gear being simulated once the fire brigade members entered the cable spreading room.

The inspectors verified that the licensee is committed to the requirements of 10 CFR 50, Appendix R, Section H (Fire Brigade) and Section I (Fire Brigade Training). Section I states, in part, that drills as a minimum should include an assessment of: (1) the selection and use of equipment and fire fighting strategies; (2) each brigade member's knowledge of his or her role in the fire fighting strategy for the area assumed to contain the fire; and (3) the fire brigade leader's direction of the fire fighting effort as to thoroughness, accuracy, and effectiveness. Since the entire fire brigade was thoroughly briefed on the exact scenario almost immediately prior to the performance of the drill itself, the inspectors determined that assessment of the aforementioned minimum drill attributes could not be effectively completed.

The inspectors communicated their observations to licensee fire protection staff and senior plant management. After further inspection determined that the practice of pre-briefing announced fire brigade drills was not an isolated case but was actually proceduralized in the licensee's Fire Drill Procedure (2176), the inspectors informed licensee management that the practice of pre-briefing fire brigade drills was inconsistent with the ability to assess fire brigade performance, as required by Appendix R. The licensee documented the inspectors' observation in their corrective action program (CAP) and committed to counting the October 1 drill as unsuccessful, reperforming the drill within 30 days, and significantly revising their fire brigade drill procedure to address current drill implementation deficiencies.

Analysis: The inspectors determined that the failure to perform announced fire brigade drills in accordance with the minimum requirements of 10 CFR 50, Appendix R, 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, Appendix B. The finding involved the attribute of protection against external factors (i.e., fire) because the failure to properly assess the fire brigade's performance during announced fire brigade drills could have adversely impacted the fire brigade's ability to fight a fire. As such, this finding affected the Mitigating Systems cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). The inspectors determined that the performance deficiency affected the cross-cutting area of Problem Identification and Resolution, having Self and Independent Assessment components, and involving aspects associated with the failure to conduct independent assessments of sufficient scope and depth to identify the deficiencies associated with the conduct of their announced fire brigade drills.

In accordance with IMC 0609, Appendix A, the inspectors performed an SDP Phase 1 screening and determined that the finding affected fire protection defense-in-depth strategies. However, as discussed by IMC 0609, Appendix A, Attachment 1, issues associated with the fire brigade are not included in IMC 0609, Appendix F, and require

management review. Therefore, the finding was reviewed by NRC management, and was determined to be a finding of very low safety significance (Green) due to licensee's demonstration of at least minimal fire brigade capability combined with credit for installed fixed fire protection systems and robust plant design.

Enforcement: Part 50.48(a) of 10 CFR required, in part, that each operating nuclear power plant must have a fire protection plan that satisfied Criterion 3 of 10 CFR Part 50, Appendix A. Part 50.48(a) of 10 CFR also required, in part, that the fire protection plan describe specific features necessary to implement the program that satisfied Criterion 3 of 10 CFR Part 50, Appendix A, such as administrative controls and personnel requirements for manual fire suppression activities. Part 50.48(a) of 10 CFR specified that 10 CFR Part 50, Appendix R, established fire protection features required to satisfy Criterion 3 of 10 CFR Part 50, Appendix A, with respect to certain generic issues for nuclear power plants licensed to operate before January 1, 1979. The Monticello Nuclear Generating Plant was licensed to operate before January 1, 1979, and 10 CFR Part 50, Appendix R, was applicable to the Monticello Nuclear Generating Plant. Appendix R of 10 CFR 50, Section III.I, "Fire Brigade Training," states, in part, that drills shall as a minimum include an assessment of: (1) the selection and use of equipment and fire fighting strategies; (2) each brigade member's knowledge of his or her role in the fire fighting strategy for the area assumed to contain the fire; and (3) the fire brigade leader's direction of the fire fighting effort as to thoroughness, accuracy, and effectiveness. Contrary to this requirement, since the entire fire brigade was thoroughly briefed on the exact scenario almost immediately prior to the performance of the drill itself, the inspectors determined that assessment of the aforementioned minimum drill attributes could not be effectively completed for the October 1, 2006, announced fire brigade drill and that the licensee practice of pre-briefing announced fire brigade drills was inconsistent with the ability to assess fire brigade performance, as required by Appendix R. Because this violation was of very low safety significance, and it was entered into the licensee's CAP 01053617 and CAP 01056116), this violation is being treated as a Non-Cited Violation (NCV) 05000263/2006005-01, consistent with Section VI.A.1 of the NRC Enforcement Policy.

1R11 Licensed Operator Requalification Program (71111.11)

a. Inspection Scope

The inspectors performed a quarterly review of licensed operator requalification training. 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 a review of high risk activities, emergency plan performance, 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 activity for a total of one sample:

- a training crew during an evaluated simulator scenario that included intake icing, a blown fuse for 'A' RHR logic, station power transfer, loss of normal offsite power, and a loss of coolant accident, which resulted in entry into the emergency operating procedures, reduced reactor level, and establishing a controlled cooldown while aligning primary containment cooling.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12)

a. Inspection Scope

The inspectors reviewed specific maintenance related issues to assess maintenance effectiveness, including maintenance rule activities, work practices, and common cause issues. Areas of inspection 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 CAP documents, and current equipment performance status.

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

- a issue/problem-oriented review of main steam pressure control system maintenance activities. Specifically, the inspectors focused on recurring issues associated with the mechanical pressure regulator portion of the control system;
- an issue/problem-oriented review of the residual heat removal service water system because it was designated as risk significant under the Maintenance Rule and had experienced several issues with its keep-fill system; and
- an issue/problem-oriented review of the implementation of the licensee's inservice testing program as it relates to ensuring that maintenance activities are adequately evaluated to prevent the performance of unacceptable preconditioning when performed prior to required inservice testing. Specifically, the inspectors focused on how this issue relates to motor-operated valves, which are designated as risk significant under the Maintenance Rule.

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 (RA) 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. The inspectors also assessed the licensee's evaluation of plant risk, risk management, scheduling, configuration control, coordination with other scheduled risk significant work for these activities, and that the assessment included an evaluation of external factors.

The inspectors observed the following emergent risk significant activities for a total of two samples:

- unexpected half scram condition during scram discharge volume (SDV) hi level scram switch testing on October 3, 2006; and
- evaluation and repair of a spring can hanger on 11 core spray (CS) test return piping.

b. Findings

Introduction: A finding was self-revealed when an unexpected half scram occurred due to the failure to fully evaluate the impact of attaching test equipment as specified in Work Order (WO) 293156, "Document Operating Point of Fluid Components International (FCI) SDV Level Switches." This issue was considered to be of very low safety significance (Green) and was dispositioned as a Non-Cited Violation.

Description: On October 3, 2006, after performing a pre-job brief, instrument maintenance technicians attempted to conduct surveillance testing in accordance with Procedure 0006, "Scram Discharge Volume Hi Level Scram Test and Calibration Procedure." This surveillance test was augmented with WO 293156, "Document Operating Point of FCI SDV Level Switches," consisting of a work plan to be performed during Procedure 0006. This work plan, intended to determine the calibrated trip set-points of the safety-related scram discharge volume SDV level switches, was a non-routine evolution being performed to determine whether the instrument set-points were within specified boundaries and if replacement at a later date was warranted. The work plan implemented the use of a calibration unit which, when connected to the level switches, would facilitate data gathering. Per the WO, the instrument maintenance technicians exited Procedure 0006 after Step 1, entered Step 7.2 of the work plan and set-up the calibration unit, and then attached the connection plug to level switch (LS)-7428A (associated with reactor protection system (RPS) Channel A1) as directed in the plan. Immediately after connecting the calibration unit to the level switch per Step 7.2.2, the main control room received a half scram on RPS Channel A1.

A few moments after the half scram was received the instrument maintenance technicians were directed, per Step 7.2.5 of the work plan, to notify the control room that upcoming steps in the work plan (inserting false sensor trips) would cause a half scram. Because the half scram was already apparent to the control room operators, and because they were not notified before RPS Channel A1 tripped earlier, data gathering was completed for LS-7428A, the equipment was placed in a stable condition, and the work plan was exited. The licensee's immediate corrective actions included a revision to the work plan to include notification of the main control room prior to attaching the test equipment for any remaining level switch testing. Other corrective actions included communication of WO screening expectations to the maintenance planning staff.

Analysis: The inspectors determined that the failure to fully evaluate the impact of installing the calibration unit to the SDV LS prior to installation was a performance deficiency warranting a significance evaluation in accordance with IMC 0612, "Power Reactor Inspection Reports," Appendix B, "Issue Disposition Screening." The inspectors determined that the finding was more than minor because it: (1) involved the procedure quality attribute of the Initiating Events cornerstone; and (2) affected the cornerstone objective of limiting the likelihood of those events that upset plant stability during power operations.

The licensee determined that the half scram unexpectedly occurred because the calibration unit connector inadvertently made up a circuit, which resulted in the level switch tripping. The licensee also determined that the work plan did not appropriately contain precautions and/or warning steps before attaching this equipment. Furthermore, after NRC inspector questioning, the licensee determined that the work request for the additional testing should have been processed as a "complex" Level 1 work request per 4-AWI-04.05.01, "General Work Controls," but was instead processed as "simple" Level 2 work. After further questioning, the inspectors determined that the level of review for the work plan was equivalent to a Level 1 work request, in that it was subjected to multi-departmental review, bench testing, and operating experience. The inspectors determined that per the licensee's work package planning guidelines, precautions should have been realized as appropriate for the circumstances considering the level of review performed. The inspectors determined that the performance deficiency affected the cross-cutting area of Human Performance, having Work Control components, and involving aspects associated with the failure to appropriately coordinate the work activity by incorporating actions to address the operational impact of the testing. In particular, after review of the work plan by engineering and maintenance staff, the licensee failed to identify the need for precautionary statements in the work plan considering that the testing was a first time evolution and involved manipulation of equipment that could cause an RPS actuation or unexpected alarms.

Using IMC 0609, Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations," the inspectors determined that the finding did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions would not be available. Thus, the inspectors concluded that the issue was of very low safety significance (Green).

Enforcement: Title 10 CFR 50, Appendix B, Criterion V requires, in part, that activities affecting quality shall be prescribed by documented instructions, procedures, or

drawings of a type appropriate to the circumstances. Contrary to this requirement, on October 3, 2006, a work plan associated with WO 293156 was used to attach test equipment to the A1 scram discharge volume high level scram switch, an activity affecting quality. The work plan was not appropriate for the circumstances because: (1) the procedure did not have the appropriate level of work planning controls, as required by 4-AWI-04.05.01, "General Work Controls," and (2) the procedure did not contain precautions for control room operators to anticipate a potential half scram condition. Because the event was of very low safety significance and because the issue was entered into the licensee's CAP 01053515, this violation is being treated as an NCV, consistent with Section VI.A.1 of Enforcement Policy (NCV 05000263/2006005-02).

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 01064769 (some local leak rate testing (LLRT) testing performed below required value of Pa);
- CAP 01064775 (some LLRT testing performed above 1.1 Pa);
- CAP 01056242 (emergency filtration train (EFT) backdraft damper apparently not ever installed); and
- CAP 01051775 (DOL, EDG: New fuel shipment is ultra low sulfur diesel (USD)).

b. Findings

No findings of significance were identified.

1R17 Permanent Plant Modifications (71111.17)

a. Inspection Scope

The inspectors reviewed a permanent plant modification associated with spent fuel pool cooling system. This inspection focused on verification that the design bases, licensing basis, and performance capability of related structures, systems or components were not degraded by the installation of the modification. The inspectors also verified that the modification did not place the plant in an unsafe configuration. The inspection activities included, a review of the design adequacy of the modification by performing a review, or partial review, of the modification's impact on plant material requirements and replacement components, equipment protection, operation, failure modes, and other related process requirements.

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

- Engineering Change (EC)-7563; modify south fuel pool diffuser pipe (FPW-10B-6"HK) for independent spent fuel storage installation (ISFSI).

b. Findings

Introduction: A finding of very low safety significance was identified by the inspectors for a violation of 10 CFR 50, Appendix B, Criterion III, "Design Control," when the licensee failed to incorporate current licensing basis information into the engineering change package and 50.59 screening for a modification of safety-related equipment associated with the south spent fuel pool diffuser piping prior to the implementation of the modification.

Description: On November 13, 2006, the licensee began the field work on EC-7563. The purpose of this engineering change was to modify the south fuel pool diffuser pipe and associated inactive supports to remove potential interferences with the use of this area of the fuel pool for loading spent fuel casks. The major steps in the implementation of the engineering change included taking the south fuel pool diffuser out-of-service; lowering spent fuel pool level to approximately 34 feet; cutting and removing from the spent fuel pool a section of piping weighing approximately 850 pounds; modifying/replacing the piping and sparger; installing the modified piping and sparger in the spent fuel pool; restoring the spent fuel pool level in excess of 37 feet; and placing the south fuel pool sparger back in-service.

Under CTS, fuel storage pool water was required to be at least 33 feet any time that irradiated fuel was stored in the pool. The basis for this minimum fuel pool level was to assure that there was adequate water to shield and cool the irradiated fuel assemblies that were stored in the pool. Subsequent to the approval process for EC-7563, the licensee performed a transition from CTS to ITS. Technical Specification 3.7.8 under ITS required that spent fuel pool water level shall be in excess of 37 feet from the bottom of the spent fuel storage pool during movement of irradiated fuel assemblies in the spent fuel storage pool. The water level above the irradiated fuel assemblies was an explicit assumption to ensure that the minimum water level in the spent fuel storage pool existed to meet the assumptions of iodine decontamination factors following a fuel handling accident.

During the inspectors' review of EC-7563, "Modify South Fuel Pool Diffuser Pipe (FPW-10B-6"HK) for ISFSI," early on the morning of November 13, 2006, the inspectors discovered discrepancies between what was required by the licensee's current licensing basis and the information that was documented in the engineering change package and the 50.59 screening associated with the modification. Specifically, both the engineering change package and the 50.59 screening referenced the spent fuel pool level requirements as outlined in the CTS, and did not consider the requirements of the station's current design basis and under ITS. Additionally, the licensee did not fully evaluate the impact of a load drop of the diffuser piping as it was being rigged out of and

into the spent fuel pool against the higher minimum spent fuel pool level requirements of their current design basis.

Upon being notified of the discrepancies and prior to cutting the south fuel pool diffuser pipe, the licensee suspended all work associated with the implementation of EC-7563 and restored fuel pool level above 37 feet. This issue was entered in to the licensee's corrective action program as CAPs 01061386, 01061425, and 01061380 for evaluation and resolution of the issue.

Analysis: The inspectors determined that the issue was a performance deficiency because the licensee failed to meet a requirement or standard, where the cause was reasonably within the licensee's ability to foresee and correct and should have been prevented. Specifically, the licensee failed to adequately evaluate the proposed engineering change against their current licensing basis prior to the implementation of the engineering change. The inspectors concluded that the issue was more than minor in accordance with IMC 0612, Appendix B, "Issue Screening," because the finding affects the spent fuel pool cooling system design control attribute associated with the Barrier Integrity cornerstone's objective to provide reasonable assurance that physical design barriers (fuel cladding, reactor coolant system, and containment) protect the public from radio nuclide releases caused by accidents or events. The inspectors determined that the performance deficiency affected the cross-cutting area of Human Performance, having Work Control components, and involving aspects associated with the failure to effectively implement those procedures prior to the implementation of the design change associated with the south spent fuel pool sparger.

The inspectors determined that the finding was of very low safety significance (Green) using IMC 0609, Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations," because the inspectors determined that the finding only represented a degradation of the radiological barrier function provided by the spent fuel pool.

Enforcement: Criterion III of 10 CFR 50, Appendix B, requires, in part, that measures shall be established to assure that applicable design bases are correctly translated into specifications, drawings, procedures, and instructions. Contrary to the above, on November 13, 2006, the inspectors found that the licensee had not incorporated current licensing basis information into the engineering change package and 50.59 screening for a modification of safety-related equipment associated with the south spent fuel pool diffuser piping prior to the implementation of the modification. Specifically, both the engineering change package and associated 50.59 screening referenced the spent fuel pool level requirements as outlined in CTS, and did not consider the requirements of the station's current design basis and under ITS. Because this violation was of very low safety significance and it was entered into the licensee's CAP, this violation is being treated as an NCV, consistent with Section VI.A.1 of the NRC Enforcement Policy. (NCV 05000263/2006005-03)

## 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 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 design requirements.

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

- leak testing following preventive maintenance on 13 ESW system check valves;
- functional testing of the limit switch associated with the overspeed trip relay for 11 EDG;
- start and load testing of 11 EDG following preventive maintenance;
- pre-service and post-maintenance testing of 12 ESW pump following replacement; and
- pre-operational and operational testing of 13 service water pump following installation.

### 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 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 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 (PI) reporting, and evaluation of test data.

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

- 11 EDG-ESW pump comprehensive test (inservice test);
- 12 SBLC system quarterly pump and valve test (routine); and,
- high pressure core injection (HPCI) primary containment isolation valve automatic isolation testing (containment isolation valve).

b. Findings

No findings of significance were identified.

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

a. Inspection Scope

The inspectors completed a screening review of Revisions 27 and 28 of the Monticello Nuclear Generating Plant Emergency Plan to determine whether changes identified in these revisions may have reduced the effectiveness of the licensee's emergency planning. The screening review of Revisions 27 and 28 does not constitute approval of the changes and, as such, the changes are subject to future NRC inspection to ensure that the emergency plan continues to meet NRC regulations.

These activities completed one inspection sample.

b. Findings

No findings of significance were identified.

1EP6 Drill Evaluation (71114.06)

a. Inspection Scope

The inspectors selected an emergency preparedness drill that the licensee had scheduled as providing input to the Drill/Exercise 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 CAP 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 resident inspectors observed the licensee's October 18, 2006, emergency preparedness 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.

**2. RADIATION SAFETY**

**Cornerstone: Occupational Radiation Safety**

2OS1 Access Control to Radiologically Significant Areas (71121.01)

.1 Review of Licensee PIs for the Occupational Exposure Cornerstone

a. Inspection Scope

The inspectors reviewed the licensee's occupational exposure control cornerstone PIs to determine whether or not the conditions surrounding the PIs had been evaluated, and identified problems had been entered into the CAP for resolution. This review represents one sample.

b. Findings

No findings of significance were identified.

.2 Plant Walkdowns and Radiation Work Permit Reviews

a. Inspection Scope

The inspectors reviewed licensee controls and surveys in the following two radiologically significant work areas within radiation areas, high radiation areas and airborne radioactivity areas in the plant, and reviewed work packages which included associated licensee controls and surveys of these areas to determine if radiological controls including surveys, postings, and barricades were acceptable:

- refuel floor crane repairs; and
- reactor water clean-up room operator surveillance.

This review represents one sample.

The inspectors reviewed the radiation work permits (RWPs) and work packages used to access these two areas and other high radiation work areas to identify the work control instructions and control barriers that had been specified. Electronic dosimeter alarm set points for both integrated dose and dose rate were evaluated for conformity with survey indications and plant policy. Workers were interviewed to verify that they were aware of the actions required when their electronic dosimeters noticeably malfunctioned or alarmed.

This review represents one sample.

The inspectors walked down and surveyed (using an NRC survey meter) the refuel floor crane repair work area to verify that the prescribed RWP procedure and engineering controls were in place, that licensee surveys and postings were complete and accurate, and that air samplers were properly located.

This review represents one sample.

The inspectors reviewed RWPs for airborne radioactivity areas to verify barrier integrity and engineering controls performance (e.g., high efficiency particulate air filter ventilation system operation), and to determine if there was a potential for individual worker internal exposures of greater than 50 millirem committed effective dose equivalent. There were no airborne radioactivity areas in the plant during the inspection. Work areas having a history of, or the potential for, airborne transuranics were evaluated to verify that the licensee had considered the potential for transuranic isotopes and provided appropriate worker protection.

This review represents one sample.

The adequacy of the licensee's internal dose assessment process for internal exposures greater than 50 millirem committed effective dose equivalent was assessed. The licensee has not had any internal exposures greater than 50 millirem committed effective dose equivalent over the last 2 years.

This review represents one sample.

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

This review represents one sample.

b. Findings

No findings of significance were identified.

.3 Problem Identification and Resolution

a. Inspection Scope

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

This review represents one sample.

The inspectors reviewed 15 corrective action reports related to access controls and two high radiation area radiological incidents (non-PIs identified by the licensee in high radiation areas <1R/hr). Staff members were interviewed and corrective action documents were reviewed, to verify that follow-up activities were being conducted in an

effective and timely manner commensurate with their importance to safety and risk based on the following:

1. Initial problem identification, characterization, and tracking;
2. Disposition of operability/reportability issues;
3. Evaluation of safety significance/risk and priority for resolution;
4. Identification of repetitive problems;
5. Identification of contributing causes;
6. Identification and implementation of effective corrective actions;
7. Resolution of NCVs tracked in the corrective action system; and
8. Implementation/consideration of risk significant operational experience feedback.

This review represents one sample.

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

This review represents one sample.

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

This review represents one sample.

b. Findings

No findings of significance were identified.

.4 Job-In-Progress Reviews

a. Inspection Scope

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

- refuel floor crane repairs; and
- reactor water clean-up room operator surveillance.

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

This review represents one sample.

Job performance was observed with respect to these requirements to verify that radiological conditions in the work area were adequately communicated to workers through pre-job briefings and postings. The inspectors also verified the adequacy of radiological controls including required radiation, contamination, and airborne surveys for system breaches; radiation protection job coverage which included audio and visual surveillance for remote job coverage; and contamination controls.

This review represents one sample.

Radiological work in high radiation work areas having significant dose rate gradients was reviewed to evaluate the application of dosimetry to effectively monitor exposure to personnel and to verify that licensee controls were adequate. These are work areas where the dose rate gradients are severe (i.e., diving activities and the reactor water cleanup heat exchanger room) which increased the necessity of providing multiple dosimeters and/or enhanced job controls.

This review represents one sample.

b. Findings

No findings of significance were identified.

.5 High Risk Significant, High Dose Rate (HRA) and Very High Radiation Area (VHRA) Controls

a. Inspection Scope

The inspectors held discussions with the radiation protection manager concerning high dose rate/HRA and VHRA controls and procedures, including procedural changes that had occurred since the last inspection, in order to verify that any procedure modifications did not substantially reduce the effectiveness and level of worker protection.

This review represents one sample.

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

This review represents one sample.

The inspectors conducted plant walkdowns to verify the posting and locking of entrances to high dose rate HRAs, and very high radiation.

This review represents one sample.

b. Findings

No findings of significance were identified.

.6 Radiation Worker Performance

a. Inspection Scope

During job performance observations, the inspectors evaluated radiation worker performance with respect to stated radiation protection work requirements and evaluated whether workers were aware of the significant radiological conditions in their workplace and the RWP controls and limits in place and whether their performance had accounted for the level of radiological hazards present.

This review represents one sample.

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

This review represents one sample.

b. Findings

No findings of significance were identified.

.7 RP Technician Proficiency

a. Inspection Scope

During job performance observations, the inspectors evaluated radiation protection technician performance with respect to RP work requirements and evaluated whether they were aware of the radiological conditions in their workplace and the RWP controls and limits in place and if their performance was consistent with their training and qualifications with respect to the radiological hazards and work activities.

This review represents one sample.

The inspectors reviewed one radiological problem report (the only one developed during the assessment period), which found that the cause of the event was radiation protection technician error, to determine if there was an observable pattern traceable to

a similar cause and to determine if this perspective matched the corrective action approach taken by the licensee to resolve the reported problems.

This review represents one sample.

b. Findings

No findings of significance were identified.

2OS2 ALARA Planning And Controls (71121.02)

.1 Inspection Planning

a. Inspection Scope

The inspectors reviewed plant collective exposure history, current exposure trends, and ongoing and planned activities in order to assess current performance and exposure challenges. This included determining the plant's current 3-year rolling average for collective exposure in order to help establish resource allocations and to provide a perspective of significance for any resulting inspection finding assessment.

This review represents one sample.

The inspectors reviewed the on-line maintenance work scheduled during the inspection period and associated work activity exposure estimates for the following two work activities which were likely to result in the highest personnel collective exposures:

- refuel floor crane upgrade activities; and
- reactor water clean-up room entry.

This review represents one sample.

The inspectors determined site specific trends in collective exposures and source-term measurements. This review represents one sample. The inspectors reviewed procedures associated with maintaining occupational exposures ALARA and processes used to estimate and track work activity specific exposures.

This review represents one sample.

b. Findings

No findings of significance were identified.

.2 Verification of Dose Estimates and Exposure Tracking Systems

a. Inspection Scope

The inspectors reviewed the assumptions and bases for the current annual collective exposure estimate, including procedures, in order to evaluate the

licensee's methodology for estimating work activity-specific exposures and the intended dose outcome. Dose rate and man-hour estimates were evaluated for reasonable accuracy.

This review represents one sample.

b. Findings

No findings of significance were identified.

.3 Source-Term Reduction and Control

a. Inspection Scope

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

This review represents one sample.

b. Findings

No findings of significance were identified.

.4 Declared Pregnant Workers

a. Inspection Scope

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

This review represents one sample.

b. Findings

No findings of significance were identified.

.5 Problem Identification and Resolutions

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

This review represents one sample.

The licensee's CAP was also reviewed, to determine if repetitive deficiencies and/or significant individual deficiencies in problem identification and resolution had been addressed. This review represents one sample.

b. Findings

No findings of significance were identified.

**Cornerstone: Public Radiation Safety**

2PS2 Radioactive Material Processing and Transportation (71122.02)

.1 Radioactive Waste System

a. Inspection Scope

The inspectors reviewed the liquid and solid radioactive waste system description in the Updated Safety Analysis Report (USAR) for information on the types and amounts of radioactive waste (radwaste) generated and disposed. The inspectors reviewed the scope of the licensee's audit program with regard to radioactive material processing and transportation programs to verify that it met the requirements of 10 CFR 20.1101(c). This review represented one inspection sample.

b. Findings

No findings of significance were identified.

.2 Radioactive Waste System Walkdowns

a. Inspection Scope

The inspectors performed walkdowns of the liquid and solid radwaste processing systems to verify that the systems agreed with the descriptions in the USAR and the Process Control Program, and to assess the material condition and operability of the systems. The inspectors reviewed the status of radioactive waste process equipment that was not operational and/or was abandoned in place. The inspectors reviewed the licensee's administrative and physical controls to ensure that the equipment would not contribute to an unmonitored release path or be a source of unnecessary personnel exposure.

The inspectors reviewed changes to the waste processing system to verify the changes were reviewed and documented in accordance with 10 CFR 50.59 and to assess the impact of the changes on radiation dose to members of the public. The inspectors reviewed the current processes for transferring waste resin into shipping containers to determine if appropriate waste stream mixing and/or sampling procedures were utilized. The inspectors also reviewed the methodologies for waste concentration averaging to determine if representative samples of the waste product were provided for the purposes of waste classification in 10 CFR 61.55. This review represented one inspection sample.

b. Findings

No findings of significance were identified.

.3 Waste Characterization and Classification

a. Inspection Scope

The inspectors reviewed the licensee's radiochemical sample analysis results for each of the licensee's waste streams, including dry active waste (DAW), spent resins and filters. The inspectors also reviewed the licensee's use of scaling factors to quantify difficult-to-measure radionuclides (e.g., pure alpha or beta emitting radionuclides). The reviews were conducted to verify that the licensee's program assured compliance with 10 CFR 61.55 and 10 CFR 61.56, as required by Appendix G of 10 CFR Part 20. The inspectors also reviewed the licensee's waste characterization and classification program to ensure that the waste stream composition data accounted for changing operational parameters and thus remained valid between the annual sample analysis updates. This review represented one inspection sample.

b. Findings

No findings of significance were identified.

.4 Shipment Preparation

a. Inspection Scope

The inspectors reviewed shipment packaging, surveying, labeling, marking, placarding, vehicle checks, emergency instructions, disposal manifest, shipping papers provided to the driver, and licensee verification of shipment readiness for selected resin, dry active waste and surface contaminated object (SCO) shipments. The inspectors verified that the requirements of any applicable transport cask Certificate of Compliance were met and verified that the receiving licensee was authorized to receive the shipment packages. The inspectors verified that the licensee's procedures for cask loading and closure procedures were consistent with the vendor's approved procedures. The inspectors interviewed shipping personnel to review radiation worker practices and verify that the workers had adequate skills to accomplish each task and to determine if the shippers were knowledgeable of the shipping regulations and whether shipping personnel demonstrate adequate skills to accomplish the package preparation requirements for public transport with respect to NRC Bulletin 79-19 and 49 CFR Part 172 Subpart H, because no shipping activities were scheduled during the inspection. The inspectors reviewed the training records of personnel responsible for the conduct of radioactive waste processing and radioactive shipment preparation activities. The review was conducted to verify that the licensee's training program provided training consistent with NRC and Department of Transportation (DOT) requirements. This review represented one inspection sample.

b. Findings

No findings of significance were identified.

.5 Shipping Records

a. Inspection Scope

The inspectors reviewed five non-excepted package shipment manifests/documents completed in 2005/2006 to verify compliance with NRC and DOT requirements (i.e., 10 CFR Parts 20 and 71 and 49 CFR Parts 172 and 173). This review represented one inspection sample.

b. Findings

No findings of significance were identified.

.6 Identification and Resolution of Problems

a. Inspection Scope

The inspectors reviewed condition reports, audits and self assessments that addressed radioactive waste and radioactive materials shipping program deficiencies since the last inspection, to verify that the licensee had effectively implemented the corrective action program and that problems were identified, characterized, prioritized, and corrected. 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 material and shipping programs 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:

1. Initial problem identification, characterization, and tracking;
2. Disposition of operability/reportability issues;
3. Evaluation of safety significance/risk and priority for resolution;
4. Identification of repetitive problems;
5. Identification of contributing causes;
6. Identification and implementation of effective corrective actions;
7. Resolution of non-cited violations (NCVs) tracked in corrective action system(s); and
8. 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 PI Verifications (71151)

**Cornerstone: Occupational Radiation Safety and Public Radiation Safety**

.1 Radiation Safety PI Verification

a. Inspection Scope

The inspectors' review of PIs used guidance and definitions contained in Nuclear Energy Institute Document 99-02, Revision 4, "Regulatory Assessment PI Guideline," to assess the accuracy of the PI data. The inspectors' review included, but was not limited to, LERs, CAP documents, and calculations for each PI specified for the period from the 4th quarter of 2005 to the 3rd quarter of 2006.

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

- Occupational Exposure Control Effectiveness (Occupational Radiation Safety Cornerstone); and
- Radiological Effluent TSs/Offsite Dose Calculation manual Radiological Effluent Occurrence (Public Safety Cornerstone).

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 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 ITS transition issues, but also considered the results of daily inspector CAP item screening discussed in Section 4OA2.2 above, licensee trending efforts, and licensee human performance results. The inspector's review nominally considered the 6-month period of July 2006 through December 2006, 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 specific items critically reviewed are listed in the Documents Reviewed section attached to this report. 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.

The inspectors also evaluated the report against the requirements of the licensee's CAP as specified in 4 AWI-10.01.03, "Action Request Process (FP-PA-ARP-01)," and

10 CFR 50, Appendix B. Additional documents reviewed are listed in the attachment to this report.

### Assessment and Observations

The inspectors evaluated the licensee trending methodology and observed that the licensee had performed a detailed review. The licensee routinely reviewed cause codes, involved organizations, key words, and system links to identify potential trends in their CAP data. The inspectors compared the licensee process results with the results of the inspectors' daily screening and did not identify any discrepancies.

b. Findings

No findings of significance were identified.

4OA3 Event Follow-up (71153)

(Closed) LER 50-263/2006-002-00: Unplanned LCO Due to Loss of Cooling in the Upper 4 KV Room

At approximately 17:14 on May 27, 2006, the licensee declared the Division II 4 Kilovolt (KV) switchgear inoperable due to a loss of ventilation, which led to room temperature exceeding the 104 °F limit. At approximately 17:30, the operators entered the abnormal procedure for loss of ventilation and took compensatory actions to open turbine building doors to provide additional cooling. At 17:45 the temperature in the Division II 4 KV switchgear room decreased to 101 °F, and by 18:03 the licensee had closed the additional turbine building doors they had opened, restored normal ventilation to the Division II 4KV switchgear room, and declared the Division II 4 KV electrical buses operable.

As a result of procedurally prescribed actions taken to address the high temperature condition in the Division II 4 KV switchgear room, that equipment was rendered vulnerable to a high energy line break (HELB) accident. Consequently, by opening the turbine building doors used to provide extra cooling to the Division II 4 KV switchgear room, the Division I 4 KV switchgear was also rendered susceptible to the same HELB accident. Therefore, a single postulated HELB accident could have rendered both Divisions of 4 KV electrical distribution inoperable, affecting the ability to safely shut down and remove residual heat.

Investigation of the event revealed that the licensee failed to effectively implement the requirements of their abnormal procedure for ventilation system failure in that, subsequent to opening several turbine building doors to address the abnormal temperature in the Division II 4 KV switchgear room, the operators did not also declare all of the Division I 4 KV equipment inoperable, as required by the abnormal procedure. At approximately 18:00, this performance deficiency was identified by the oncoming shift manager.

Based on the limited time that the additional turbine building doors used to cool the Division II 4 KV switch gear were open, the limited exposure of additional equipment to

the postulated HELB event, and the relatively low initiating event frequency of a HELB event at the Monticello site, no significant increase in plant risk occurred. The issue was placed into the licensee's program as CAPs 01032706, 01032666, and 01063418. Licensee corrective actions were focused on improving the performance of the chiller associated with the Division II 4 KV room, improving the procedure which provides guidance for ventilation system failures, and completion of an assessment for single point HELB failures.

The inspectors determined that the failure to follow procedures was a licensee-identified violation of regulatory requirement that was of very low safety significance. The violation is further discussed in section 4OA7 of this report.

#### 4OA5 Other Activities

##### .1 Implementation of Temporary Instruction (TI) 2515/169 - Mitigating Systems Performance Index (MSPI) Verification

###### a. Inspection Scope

The objective of TI 2515/169, "MSPI Verification," was to verify that licensees have correctly implemented the MSPI guidance for reporting unavailability and unreliability of the monitored safety systems. Prior to the April 1, 2006, implementation of MSPI, a team of NRC staff and contractors involved in the development of the index conducted an audit of the licensees' bases documents. On a sampling basis, the team selected key aspects of the index to be inspected to ensure that the licensees followed the MSPI guidelines. The key aspects included: (1) identification of the correct boundaries; (2) selection of the appropriate components; (3) establishment of baseline unavailability and unreliability information; and (4) resolution of concerns with respect to the individual licensee's probabilistic risk assessments. The purpose of this TI was to validate the unavailability and unreliability input data and to verify accuracy of the first reporting results for the 2nd Quarter of 2006.

The performance of this TI by the inspectors represented a single inspection sample.

###### b. Issues

###### (1) For the sample selected, did the licensee accurately document the baseline planned unavailability hours for the MSPI systems?

During their initial review of licensee's documentation of planned unavailability hours, the inspectors identified that the licensee had used maintenance rule unavailability hours instead of the required 2002-2004 Reactor Oversight Process PI unavailability hours in the preparation of their MSPI basis document. The licensee subsequently prepared a revision to their MSPI basis document using the correct unavailability data. The incorporation of the new data did not cause any of the MSPI performance indicators to exceed a threshold which would result in a color change.

No other issues were identified.

- (2) For the sample selected, did the licensee accurately document the actual unavailability hours for the MSPI systems?

No issues were identified.

- (3) For the sample selected, did the licensee accurately document the actual unreliability information for each MSPI monitored component?

No issues were identified.

- (4) Did the inspector identify significant errors in the reported data, which resulted in a change to the indicated index color? Describe the actual condition and corrective actions taken by the licensee, including the date when the revised PI information was submitted to the NRC.

No issues were identified.

- (5) Did the inspector identify significant discrepancies in the basis document which resulted in: (1) a change to the system boundary; (2) an addition of a monitored component; or (3) a change in the reported index color? Describe the actual condition and corrective actions taken by the licensee, including the date of when the bases document was revised.

No issues were identified.

#### 4OA6 Meetings

##### .1 Exit Meeting

The inspectors presented the inspection results to Mr. J. Conway and other members of licensee management on January 4, 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:

- Access Control to Radiologically Significant Areas Inspection with Mr. B. Sawatzke, Plant Manager, on October 20, 2006;
- Mitigating Systems Performance Index Verification (TI 2525/169) Inspection with Mr. J. Conway, Site Vice President, on January 4 2007; and
- Emergency Preparedness inspection with Mr. G. Holthaus on December 27, 2006.
- Radioactive Material Processing and Transportation Inspection with Mr. J. Conway, Site Vice President and Mr. B. Sawatzke, Plant Manager, on December 15, 2006.

#### 4OA7 Licensee-Identified Violations

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

Criterion V of 10 CFR 50, Appendix B, requires, in part, that activities affecting quality shall be prescribed by documented procedures of a type appropriate to the circumstances and shall be accomplished in accordance with these procedures. Contrary to this requirement, on May 27, 2006, during the performance of Part B, Step 8.d of Abnormal Procedure C.4-B.08.07.A, "Ventilation System Failure," Revision 22, the control room operator did not declare the Division I 4 KV switchgear inoperable as required by the procedural step.

This issue is discussed in more detail in Section 4OA3 of this report.

ATTACHMENT: SUPPLEMENTAL INFORMATION

## SUPPLEMENTAL INFORMATION

### KEY POINTS OF CONTACT

#### Licensee

J. Conway, Site Vice President  
B. Sawatzke, Plant Manager  
J. Grubb, Site Engineering Director  
B. MacKissock, Operations Manager  
K. Jepson, Radiation Protection-Chemistry Manager  
S. Radebaugh, Maintenance Manager  
W. Guldmond, Nuclear Safety Assurance Manager  
G. Holthaus, Senior Emergency Planning Coordinator

#### Nuclear Regulatory Commission

B. Burgess, Chief, Reactor Projects Branch 2

### LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

#### Opened and Closed

05000263/2006005-01	NCV	Licensee Announced Fire Drill Implementation Practice Inconsistent With the Requirements of Appendix R (Section 1R05)
05000263/2006005-02	NCV	Unexpected Half Scram due to Inadequate Work Plan (Section 1R13)
05000263/2006005-03	NCV	Licensee Failed to Incorporated Current Licensing Basis Information into the Engineering Change Package and 50.59 Screen Prior to the Implementing the Modification (Section 1R17)

#### Closed

50-263/2006-002-00	LER	Unplanned LCO Due to Loss of Cooling in the Upper 4KV Room (Section 4OA3)
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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 1R01: Adverse Weather**

1151; Winter Checklist; Revision 52

### **Section 1R04: Equipment Alignment**

2120; Plant Restart Checklist, RHR System; Revision 8  
Operations Manual B.09.06-01; 4.16 KV Station Auxiliary; Revision 6  
Operations Manual B.09.07-01; 480 Volt Station Auxiliary; Revision 3  
0255-02-III; SBLC Quarterly Pump and Valve Tests; Revision 42

### **Section 1R05: Fire Protection**

Strategy A.3-08; Cable Spreading Room; Revision 8  
Strategy A.3-07-B; 250V Division I Battery Room; Revision 8  
Strategy A.3-07-C; 125V Division II Battery Room; Revision 5  
Strategy A.3-13-C; Turbine Building 911' Elevation East Motor Control Center Area; Revision 5  
Strategy A.3-14-C; Railroad Car Area (Turbine Building); Revision 3  
Strategy A.3-14-B; Isophase Bus Area; Revision 4  
Strategy A.3-06; Refuel Floor; Revision 6  
Strategy A.3-23-B; Intake Structure Corridor; Revision 5  
Strategy A.3-18-B; Oil Drum Storage Room; Revision 3  
Strategy A.3-18-A; Hot Machine Shop; Revision 8  
Strategy A.3-19-A; Make-Up Demin Area; Revision 5  
Strategy A.3-41; Sodium Hypochlorite Building; Revision 0  
Drill Guide 23; Cable Spreading Room  
2176; Fire Drill Procedure; Revision 17  
CAP 01056116; Fire Brigade Announced Drills May Not Comply With Appendix R  
CAP 01053617; NRC Concerns Raised During Observation of Fire Drill  
Strategy A.3-20; Auxiliary Boiler Room; Revision 12  
Drill Guide 10; Heating Boiler Room Fire

### **Section 1R11: Licensed Operator Requalification Program**

Simulator Exercise Guide RQ-SS-55E; Intake Icing, Blown Fuse for 'A' RHR Logic, Station Power Transfer, Loss of Normal Offsite Power, Loss of Coolant Accident; Revision 0

### **Section 1R12: Maintenance Effectiveness**

3069; Post-Maintenance Testing Activities Control Cover Sheet for WO 156363 (Perform Stroke Time Testing of MO-2015)  
3069; Post-Maintenance Testing Activities Control Cover Sheet for WO 282133 (Perform Stroke Time Testing of MO-2021)  
4900-01-PM; PM for Limitorque Motor Operated Valves; Revision 23  
0255-04-IA-1-2; RHR Loop B Quarterly Pump and Valve Test; Revision 71

4 AWI-09.04.01; Inservice Testing Program; Revision 25  
NUREG-1482; Guidelines for Inservice Testing at Nuclear Power Plants; Revision 1  
CAP 01062118; Barriers to IST Pre-Conditioning in Need of Improvement  
Monticello Maintenance Rule Program; System Basis Document; Main Turbine; Revision 0  
MNGP - System Health Report; Main Turbine (TRB) as of September 19, 2006  
Monticello Maintenance Rule Program; System Basis Document; Main Steam Pressure Control;  
Revision 0  
MNGP - System Health Report; Main Steam Pressure Control (PCS) as of September 29, 2006  
CAP 01057733; EPR Servo Position Indication Drifting  
CAP 01036957; Reactor Pressure Made Unexpected Step Change  
Monticello Maintenance Rule Program; System Basis Document; RHR Service Water System;  
Revision 1  
Availability and Reliability Trend Data from December 2004 to November 2006 for RSW  
Maintenance Rule System  
CAP 01060569; 'B' RHRSW As-Left Motor Cooler Line Flow Unacceptable  
1456-02; RHRSW Pump 12 and 14 Motor Cooler Flush Quarterly Surveillance; Revision 53

### **Section 1R13: Maintenance Risk Assessments and Emergent Work Control**

CAP 01053515; Unexpected Half-Scram Occurred While Connecting Test Equipment  
4 AWI-04.05.01; General Work Controls; Revision 20  
Package Planning Guide; June 30, 2006  
WO 293156; LS-7428A, Operating Point of FCI SDV Level Switches  
0006; Scram Discharge Volume Hi Level Scram Test and Calibration Procedure, Revision 24  
1203-01; Systems Leakage Check Procedure "A" Loop Core Spray System; Revision 10  
CAP 01068359; Pipe hanger found broken on 11 CS Test Return to Torus pipe

### **Section 1R15: Operability Evaluations**

CAP 01064775; Some LLRT Testing Performed Above 1.1Pa  
CAP 01064769; Some LLRT Testing Performed Below Required Value of Pa  
CAP 01056242; EFT Backdraft Damper Apparently Not Ever Installed  
CAP 01051775; DOL, EDG: New Fuel Shipment is Ultra Low Sulfur Diesel (USD)  
0192; Diesel Fuel Quality Check; Revision 20  
MPS #49; Monticello Fuel Oil Specification; Revision 1

### **Section 1R17: Permanent Plant Modifications**

CAP 01061386; 50.59 Screening Written Against Previous TSs  
CAP 01061425; Implementation of SFP Diffuser Pipe halted  
CAP 01061380; NRC Question Regarding Lower Fuel Pool Level ITS Compliance  
QF-0506; Modification Classification - EC 7563  
QF-0501; 50.59 Screening - EC 7536; Revision 3  
QF-0522; Plant Impact Review Request - EC 7563  
QF-0515A; Design Input Checklist (Part A - Engineering Programs and Departmental Reviews)  
QF-0515B; Design Input Checklist (Part B - Design Considerations, Requirements, and  
Standards) - 7563  
QF-0525; Design Description Form - EC 7536  
8240; Lowering Fuel Pool Level and Restoration; Revision 1  
NMC Calculation 06-074; Fuel Pool Cooling and Clean-Up Sparger Analysis; Revision 1  
NMC Calculation 06-073; Evaluation of Spent Fuel Cooling and Clean-Up Sparger per Mod  
7563; Revision 0

### **Section 1R19: Post-Maintenance Testing**

WO 286933; PM for ESW-16  
WO 286934 and Associated Work Plan; PM for ESW-15  
4001-11-01; Swing Check Valve Inspection; ESW-15  
1079-01; 11 EDG Overspeed Trip Check; Revision 6  
0187-01A; 11 EDG/11 ESW/DOL Transfer Comprehensive Pump and Valve Tests; Revision 11  
4106-01-PM; Emergency Diesel 1 Cycle Maintenance; Revision 20  
4100-01-OCD; 11 EDG 1 Starting System; Revision 9  
1052-03; 11 Diesel Generator Auxiliary Systems Test; Revision 10  
CAP 1054929; 11 EDG Minimum and Maximum Output Voltages out of Spec  
CAP 1054920; Unexpected Results from 11 EDG Overspeed Trip Test  
WO 152929; P-111B, 12 EDG-ESW Pump D/P in Alert Range per Procedure 0187-02A  
WO 00270384; Remove and Replace P-102C and P-102C/Motor, EC 746  
Service Water Pump P-102C Replacement Project Pre-OP Test Procedure  
EC 746 Design Description; 03Q140 Service Water Pump Replacement; Revision 0

### **Section 1R22: Surveillance Testing**

0255-11-III-5; ESW Comprehensive Pump Test; Performed as Part of 0187-01A; Revision 11  
0255-02-III; SBLC Quarterly Pump and Valve Tests; Revision 41  
0155; HPCI group 4 Isolation Functional Test; Revision 5  
CAP 01067536; 0155 - HPCI Group 4 Isolation Functional Test Halted

### **Section 1EP4: Emergency Action Level and Emergency Plan Changes**

Monticello Nuclear Generating Plant Emergency Plan; Revisions 27 and 28

### **Section 1EP6: Drill Evaluation**

Controller Copy of the October 18, 2006, Monticello Emergency Plan Drill  
EP Performance Record, and Copies of Event Classifications and PARS Recommendations for  
the October 18, 2006, Emergency Plan Drill  
EP Drill Critique Report; October 18, 2006

### **Section 2OS1: Access Control to Radiologically Significant Areas**

CAP 00864429; Individual Worked in the RCA Without A Thermoluminescent Detector  
CAP 00872224; Workman Failed to Use Wholebody Monitor When Exiting a Contaminated  
Area  
CAP 00891577; Radwaste Resin Process Cask Not Posted in Accordance With R.07.02  
CAP 00964494; Inadequate Communication Complicates Work Activities During Hydrogen  
Water Chemistry Reduction  
CAP 01001570; Relief Valve Test Stand Causes Spread of Contamination  
CAP 01031804; Ladder Installed to Non-1E Roof Without Radiation Protection Being Notified  
CAP 01031877; Personnel Contamination: 2000 NCP Gross Contamination Found on Shoe  
CAP 01013900; Passport Issue Prevented Tour of Radiologically Controlled Area With  
NRC Inspector  
CAP 01011770; Near Miss Involving High Radiation Area Entry Without Briefing  
CAP 01018450; Radioactive Source Movement Causes Control Room Alarm  
CAP 01034811; SAR 1021899 Finding: Shortfalls in Locked High Radiation Area Access  
Prevention  
CAP 01034808; Self Assessment Report: RP HRA/Locked HRA/VHRA

CAP 01039904; Electronic Dosimeter Dose Rate Alarm  
MNGP 1479; Fuel Pool Physical Inventory; Revision 1  
MNGP 5621-03; ALARA Post Job Review No. 11 Recirculating Motor; Revision 2  
MNGP 5621-04; ALARA Work In Progress Review No. 11 Recirculating Motor; Revision 2  
MNGP R.12.02; Radiation Protection Key Control; Revision 23  
SAR 01021899; Controls of High Radiation Areas, Locked HRA and VHRA at Monticello  
RWP 267; Radiation Area 10 Millirem Per Hour Class 2; Revision 1  
RWP 273; Radiation Area 0.2 to 50 Millirem Per Hour; Revision 5  
RWP 563; Drywell 933' and 920' General Area; Revision 0  
RWP 564; All Drywell - "A" Recirculating Pump; Revision 0  
4AWI-04.05.13; Control of Items in the Spent Fuel Pool; Revision 6  
Assessment Number 2005-004-5; Nuclear Oversight Fourth Quarter 2005 Assessment Report for Monticello; dated February 27, 2006;  
Monticello Nuclear Generating Plant, Long Term Dose Reduction Plan 2006 to 2011; Revision 2

### **Section 2OS2: ALARA**

CAP 00866908; ALARA - Radiation Work Permit 127 Did Not Specify Pre-job Brief for Entry to High Radiation Area  
CAP 00872588; ALARA RCIC Cable Separation Project Exceeds Exposure Estimate  
CAP 0087731; Radiation Protection Planned for Work on CIV-2 Using CIV-1 Work Location  
CAP 00886010; ALARA Near Miss During Work Order 0508029 for MO-2374 Manual Torquing  
CAP 01006154; Site ALARA Committee is Missing Some Responsibilities from 4AWI-08.04.11  
CAP 01016566; Incorrect Person-hours Applied to Work Order Dose Estimate  
4AWI-08.04.08; ALARA Plan; Revision 7

### **Section 2PS2: Radioactive Material Processing and Transportation**

2003 10 CFR Part 61 Database Updates; dated October 22, 2003  
2005 10 CFR Part 61 Database Updates; dated August 1, 2005  
Update Safety Analysis Report, Section 9; Revision 22  
CAP 00730057; Calculation Error Discovered in WMG Ramship Software; dated July 8, 2004  
CAP 00810328; Mixed Waste Found in Scrap Metal Collection Box; dated February 21, 2005  
CAP 00836529; Radioactive Material Shipment to Vermont Yankee; dated April 21, 2005  
CAP 00870998; Radioactive Material Found not Labeled or Controlled, dated July 28, 2005  
CAP 00891577; Radwaste Resin Process Cask not Posted In Accordance with R.07.02; dated September 28, 2005  
CAP 01037411; Improper Marking on Radwaste Packages; dated June 27, 2006  
CAP 01050865; Failure to Notify Control Room During Resin Shipment; dated September 18, 2006  
CAP 01057509; Errors in Use Level of LSA and SCO Shipping Procedures; dated June 28, 2006  
CAP 01050673; Snapshot Radwaste Shipping; dated September 21, 2006  
MNGP 1280; Semiannual Operator Aids and Beyond Access Control Drawing File Audit; Revision 4  
MNGP 5616; Radioactive Material Shipment Package 05-48; Revision 19  
MNGP 5616; Radioactive Material Shipment Package 05-63; Revision 19  
MNGP 5616; Radioactive Material Shipment Package 06-04; Revision 19  
MNGP 5616; Radioactive Material Shipment Package 06-12; Revision 19  
MNGP 5616; Radioactive Material Shipment Package 06-15; Revision 19

MNGP 5616; Radioactive Material Shipment Package 06-22; Revision 19  
MNGP 5876; Procedure for Shipping Radioactive Waste Using the CNS 14-195H Cask;  
Revision 5  
MNGP 5865; Procedure for Shipping Radioactive Waste Using the CNS 8-120A Cask;  
Revision 4  
MNGP 5872; Procedure for Shipping Radioactive Waste Using the CNS 8-120B Cask;  
Revision 9  
MNGP 5878, Procedure for Shipping Radioactive Waste using the CNS 14-215H Cask;  
Revision 8  
Operations Manual B.07.03-05, Section 7, Sampling of Condensate Phase Separator T-34A;  
Revision 12

**Section 4OA1: PI Verification**

Monthly and Quarterly PI Data Sheets for Occupational Radiation and Public Radiation Safety  
from September 2005 to September 2006

**Section 4OA2: Identification and Resolution of Problems**

CAP 01065888; Equipment notes were not covered from CTS to ITS  
CAP 01068341; ITS conversion errors in Table in Att 1 of C.4-B.05.07.B  
CAP 01068130; Inadequate Reviews of 000-B, E, and J for ITS Day 0  
CAP 01064849; ITS Changes to 0036-01 will not work as proposed  
CAP 01063253; No ITS requirements exist for test 0123  
CAP 01021684; Conduct Focused Self-Assessment of ITS Implementation

**Section 4OA3: Event Follow-up**

CAP 01032706; Procedure Issue with C.4-B.08.07.A During Execution  
CAP 01032666; Loss of Ventilation to Upper 4KV Room, Unplanned 24 Hour LCO  
CAP 01063418; Untimely Update of C.4-B.08.07.A Following HELB Analysis

**Section 4OA5: Other Activities**

PRA-CALC-05-003; MSPI Basis Document; Revision 01  
0255-08-IA-1; RCIC Quarterly Pump and Valve Test; Revision 63  
0255-06-IA-1; HPCI Quarterly Pump and Valve Test; Revision 77  
0255-04-IA-1-1; RHR Loop A Quarterly Pump and Valve Tests; Revision 28  
MSPI Unavailability Index Derivation Report for Emergency AC Power System; dated  
December 13, 2006  
MSPI Unavailability Index Derivation Report for High Pressure Injection System; dated  
December 13, 2006  
MSPI Unavailability Index Derivation Report for Heat Removal System; dated  
December 13, 2006  
MSPI Unavailability Index Derivation Report for Residual Heat Removal System; dated  
December 13, 2006  
MSPI Unavailability Index Derivation Report for Cooling Water System; dated  
December 13, 2006  
MSPI Unreliability Index Derivation Report for Emergency AC Power System; dated  
December 13, 2006  
MSPI Unreliability Index Derivation Report for Heat removal System; dated December 13, 2006  
MSPI Unreliability Index Derivation Report for Residual Heat Removal System; dated  
December 13, 2006

MSPI Unreliability Index Derivation Report for High Pressure Injection System; dated  
December 13, 2006  
MSPI Unreliability Index Derivation Report for Cooling Water System; dated  
December 13, 2006

## LIST OF ACRONYMS USED

ALARA	As Low As Is Reasonably Achievable
AWI	Administrative Work Instruction
CAP	Corrective Action Program
CFR	Code of Federal Regulations
CS	Core Spray
CTS	Custom Technical Specifications
DAW	Dry Active Waste
DOT	Department of Transportation
DRP	Division of Reactor Projects
EC	Engineering Change
EDG	Emergency Diesel Generator
EFT	Emergency Filtration Train
EP	Emergency Preparedness
ESW	Emergency Service Water
°F	Degrees Fahrenheit
FCI	Fluid Components International
HELB	High Energy Line Break
HPCI	High Pressure Core Injection
HRA	High Radiation Area
IMC	Inspection Manual Chapter
IP	Inspection Procedure
IPEEE	Individual Plant Examination of External Events
IR	Inspection Report
ISFSI	Independent Spent Fuel Storage Installation
ITS	Improved Technical Specifications
KV	Kilovolt
LCO	Limiting Condition of Operation
LER	Licensee Event Report
LHRA	Locked High Radiation Area
LLRT	Local Leak Rate Testing
LS	Level Switch
MNGP	Monticello Nuclear Generating Plant
MSPI	Mitigating Systems Performance Index
NCV	Non-Cited Violation
NMC	Nuclear Management Company
NRC	U.S. Nuclear Regulatory Commission
PARS	Publicly Available Records
PI	Performance Indicator
RA	Risk Assessment
RADWASTE	Radioactive Waste
RCIC	Reactor Core Isolation Cooling
RCS	Reactor Coolant System
RHR	Residual Heat Removal
RP	Radiation Protection
RPS	Reactor Protection System
RPT	Radiation Protection Technician

## LIST OF ACRONYMS USED

RWP	Radiation Work Permit
SBLC	Standby Liquid Control
SCBA	Self-Contained Breathing Apparatus
SDP	Significance Determination Process
SCO	Surface Contaminated Object
SDV	Scram Discharge Volume
TI	Temporary Instruction
TS	Technical Specification
USAR	Update Safety Analysis Report
USD	Ultra-low Sulfur Diesel
VHRA	Very High Radiation Area
WO	Work Order