

October 13, 2006

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 05000263/2006004;
05000263/2006013

Dear Mr. Conway:

On September 30, 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 October 5, 2006, 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 upon the results of this inspection no findings of significance were identified.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). 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 05000263/2006004; 05000263/2006013
w/Attachment: Supplemental Information

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J. Conway

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and Chief Nuclear Officer
Manager, Nuclear Safety Assessment
J. Rogoff, Vice President, Counsel, and Secretary
Nuclear Asset Manager, Xcel Energy, Inc.
State Liaison Officer, Minnesota Department of Health
R. Nelson, President
Minnesota Environmental Control Citizens
Association (MECCA)
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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No: 50-263

License No: DPR-22

Report No: 05000263/2006004; 05000263/2006013

Licensee: Nuclear Management Company, LLC

Facility: Monticello Nuclear Generating Plant (MNGP)

Location: Monticello, Minnesota

Dates: July 1 through September 30, 2006

Inspectors: S. Thomas, Senior Resident Inspector
L. Haeg, Resident Inspector
S. Sheldon, Reactor Engineer

Observers: R. Seal, Department of Energy

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

Enclosure

SUMMARY OF FINDINGS

IR 05000263/2006004; 05000263/2006013; 07/01/2006 - 09/30/2006; Monticello Nuclear Generating Plant. Routine Integrated Resident Inspection Report.

This report covers a 3-month period of baseline resident inspection. The inspections were conducted by Region III reactor engineers and the resident inspectors. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (SDP). Findings for which the SDP does not apply may be "Green" or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 3, dated July 2000.

A. NRC-Identified and Self-Revealed Findings

No findings of significance were identified.

B. Licensee-Identified Violations

None.

REPORT DETAILS

Summary of Plant Status

During this inspection period, the licensee was particularly challenged by the impact of environmental conditions (high ambient air temperatures, high river inlet temperatures, low river levels, and low river flow rates) on the ability to operate the facility at full power. To meet regulatory or environmental requirements, the licensee operated at a reduced power level on the following occasions:

- On July 29, 2006, power was reduced to approximately 85 percent power to ensure that discharge canal temperature limits were not exceeded. Full power was restored later the same day.
- Early on July 30, 2006, power was reduced to approximately 85 percent power. Full power was restored by noon. Later the same day, power was reduced to approximately 68 percent power. Full power was restored at approximately 14:49 the following day. Each power reduction was performed to ensure that discharge canal temperature limits were not exceeded.

During the remainder of the assessment period, the Monticello plant operated at 100 percent power except for brief down-power maneuvers to accomplish rod pattern adjustments and to conduct planned surveillance testing activities. One exception to this was on September 23, 2006, when power was reduced to approximately 75 percent power to perform a planned significant rod pattern adjustment. Power was returned to 100 percent later the same day.

1. REACTOR SAFETY

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

1R01 Adverse Weather (71111.01)

a. Inspection Scope

The inspectors performed a detailed review of the licensee's procedures and preparations for predicted adverse conditions associated with the ultimate heat sink. These conditions included decreasing river flow rate and level during a period of sustained high ambient temperatures. The inspectors focused on plant specific design features for the systems and implementation of the procedures for responding to or mitigating these conditions. Inspection activities included, but were not limited to, a review of the licensee's procedures which specifically addressed low river water flow and level, comparing current river data to historical river data from the past 18 years, and a review of the ultimate heat sink analysis and requirements identified in the Updated Safety Analysis Report. The inspectors also verified that operator actions specified by plant specific procedures were adequate and appropriate to the circumstances.

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

- low river flow and level during a period of high outside ambient temperatures.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment (71111.04)

.1 Partial Walkdown (71111.04Q)

a. Inspection Scope

The inspectors performed partial walkdowns of accessible portions of trains of risk-significant mitigating systems equipment. The inspectors reviewed equipment alignment to identify any discrepancies that could impact the function of the system and potentially increase risk. Identified equipment alignment problems were verified by the inspectors to be properly resolved. The inspectors selected redundant or backup systems for inspection during times when equipment was of increased importance due to unavailability of the redundant train or other related equipment. Inspection activities included, but were not limited to, a review of the licensee's procedures, verification of equipment alignment, and an observation of material condition, including operating parameters of equipment in-service.

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

- Division I low pressure coolant injection (LPCI) with Division II LPCI out-of-service for planned maintenance;
- high pressure coolant injection system (HPCI) with the reactor core isolation cooling (RCIC) system out-of-service for planned maintenance; and
- the availability of the electric fire pump to supply the traveling screen wash system during a screen wash pump maintenance window which coincided with a period of increased river level, flowrate, and debris loading.

b. Findings

No findings of significance were identified.

.2 Complete System Walkdown (71111.04S)

a. Inspection Scope

The inspectors performed a complete walkdown of equipment for one risk significant mitigating system. The inspectors walked down the system to review mechanical and electrical equipment line-ups, component labeling, component lubrication, component

and equipment cooling, hangers and supports, operability of support systems, and to ensure that ancillary equipment or debris did not interfere with equipment operation. A review of past and outstanding work orders was performed to determine whether any deficiencies significantly affected the system function. In addition, the inspectors reviewed the corrective action program database to ensure that any system equipment alignment problems were being identified and appropriately resolved.

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

- 11 and 12 emergency diesel generators (EDG).

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. The inspection activities included, but were not limited to, the evaluation of 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 six samples:

- Fire Zone 1-D (reactor building elevation 896' tank room);
- Fire Zone 3-A (recirculation motor-generator set room);
- Fire Zone 4-A (reactor building 985' elevation south);
- Fire Zone 4-C (reactor building 985' elevation north);
- Fire Zone 4-E (reactor building plenum); and
- Fire Zone 3-E (reactor building 962' elevation north).

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures (71111.06)

a. Inspection Scope

The inspectors performed an inspection of internal flood protection features for risk significant structures, systems and components. Specifically, the inspectors reviewed the licensee's evaluation of internal flooding associated with the intake structure. The inspection focused on determining whether flood mitigation plans and equipment were consistent with design requirements and risk analysis assumptions. The inspection activities included a review and walkdown to assess design measures, seals, drain systems, procedural adequacy, and compensatory measures.

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

- portions of the residual heat removal (RHR) and EDG emergency service water (ESW) systems located in the intake structure.

b. Findings

No findings of significance were identified.

1R07 Heat Sink Performance (71111.07)

a. Inspection Scope

The inspectors performed an annual review of the licensee's testing of heat exchangers. The inspection focused on potential deficiencies that could mask the licensee's ability to detect degraded performance, identification of any common cause issues that had the potential to increase risk, and ensuring that the licensee was adequately addressing problems that could result in initiating events that would cause an increase in risk. The inspection activities included, but were not limited to, a review of the licensee's observations as compared against acceptance criteria, the correlation of scheduled testing and the frequency of testing, and the impact of instrument inaccuracies on test results. Inspectors also verified that test acceptance criteria considered differences between test conditions, design conditions, and testing criteria.

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

- 12 EDG ESW heat exchanger.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification Program (71111.11)

a. Inspection Scope

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

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

- August 21, 2006, evaluated simulator scenario that included a drifting control rod, RCIC system initiation, loss of condenser vacuum, and an anticipated transient without scram resulting in entry into the emergency procedures.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12)

a. Inspection Scope

The inspectors reviewed areas or systems to assess maintenance effectiveness, including maintenance rule activities, work practices, and common cause issues. Inspection activities included, but were not limited to, the licensee's categorization of specific issues including evaluation of performance criteria, appropriate work practices, identification of common cause errors, extent of condition, and trending of key parameters. Additionally, the inspectors reviewed implementation of the Maintenance Rule (10 CFR 50.65) requirements, including a review of scoping, goal-setting, performance monitoring, short-term and long-term corrective actions, functional failure determinations associated with reviewed corrective action program documents, and current equipment performance status.

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

- an issue/problem-oriented review of the torus and the potential impact of an increase of in-leakage on the scoped function of primary containment and how the torus supports several other scoped maintenance rule systems;

- an issue/problem-oriented review of heating and ventilation systems because they were designated as risk significant under the Maintenance Rule and some components experienced failure during elevated summer temperatures; and
- an issue/problem-oriented review of an on-going inability to successfully perform the quarterly control valve exercise test for the main generator turbine control valves and the impact of this issue on the scoped function of the main steam pressure control system to perform its maintenance rule function.

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 and emergent work control. The inspectors verified the performance and adequacy of risk assessments, management of resultant risk, entry into the appropriate licensee established risk bands, and the effective planning and control of emergent work activities. The inspection activities included, but were not limited to, a verification that licensee risk assessment procedures were followed and performed appropriately for routine and emergent maintenance, that risk assessments for the scope of work performed were accurate and complete, that necessary actions were taken to minimize the probability of initiating events, and that activities to ensure that the functionality of mitigating systems and barriers were performed. Reviews also assessed the licensee's evaluation of plant risk, risk management, scheduling, configuration control, and coordination with other scheduled risk significant work for these activities. Additionally, the assessment included an evaluation of external factors, the licensee's control of work activities, and appropriate considerations were given to properly assess baseline and cumulative risk.

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

- on June 17 and 18, 2006, an orange electric grid condition caused by the loss of the Dorsey to Forbes 500 kVAC power line due to a failed line reactor;
- on September 15, 2006, emergent offsite maintenance on 345 kVAC Sherburne power line; and
- on September 28, 2006, an unexpected problem associated with the inability of the 11 standby liquid control (SBLC) pump to develop adequate discharge pressure during the performance of the SBLC comprehensive pump and valve test.

b. Findings

No findings of significance were identified.

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

a. Inspection Scope

The inspectors reviewed personnel performance during a planned non-routine evolution. The inspectors observed or reviewed records of operator performance during the evolution. Reviews included, but were not limited to, operator logs, pre-job briefings, instrument recorder data, and procedures.

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

- planned cross-connect of low and high pressure condensers to equalize vacuum during increased river temperatures.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors reviewed operability evaluations which affected mitigating systems or barrier integrity to ensure that operability was properly justified and that the component or system remained available. The inspection activities included a review of the technical adequacy of the operability evaluations to determine the issue's impact on Technical Specifications, if the risk associated with the issue was appropriately assessed, and if the evaluation provided adequate justification to support continued operability of the potentially degraded component or system.

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

- revised operability basis for maximum 4160 volt switchgear room temperature;
- turbine control system evaluation related to an unplanned reactor pressure change;
- missed preventive maintenance on HPCI system instrumentation; and
- reactor building chiller Freon leak impact on the standby gas treatment (SBGT) system.

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing (71111.19)

a. Inspection Scope

The inspectors verified that the post-maintenance test procedures and activities were adequate to ensure system operability and functional capability. Activities were selected based upon the structure, system, or component's ability to impact risk. The inspection activities included, but were not limited to, witnessing or reviewing the test performance or documentation, 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, Technical Specification, and Updated Safety Analysis Report design requirements.

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

- quarterly loaded run of 12 EDG following planned work;
- RCIC system quarterly pump and valve test following a planned system outage;
- calibration and testing of 'B' spent fuel pool radiation monitor;
- stroke time testing of RHR Division I drywell spray inboard isolation valve following breaker maintenance; and
- stroke time testing of 11 core spray system inboard isolation valve following planned maintenance on valve actuator.

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, but were not limited to, a review for preconditioning, integration of testing activities, applicability of acceptance criteria, test equipment calibration and control, procedural use, control of temporary modifications or jumpers required for test performance, documentation of test data, Technical Specification applicability, impact of testing relative to performance indicator reporting, and evaluation of test data.

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

- scram discharge volume hi level scram test and calibration (routine);
- turbine control valve fast closure scram test and calibration (routine);
- drywell high pressure scram and group 2, 3, and secondary containment isolation testing and calibration (routine);
- RHR loop A quarterly pump and valve tests following planned RHR system and RHRSW system maintenance (inservice test);
- quarterly primary containment isolation valve exercise (containment isolation valve); and
- monthly containment sump flow measurement instrumentation functional testing (reactor cooling system leakage detection).

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications (71111.23)

a. Inspection Scope

The inspectors reviewed temporary modification to assess the impact of the modification on the safety function of the associated system or the failure of the modification's impact on surrounding safety related equipment. The inspection activities included a review of design documents, safety screening documents, temporary modification packages, Updated Safety Analysis Report and applicable sections of the Technical Specifications to determine if the temporary modification was appropriate and consistent with modification documents, drawings and procedures. The inspectors also reviewed the post-installation test results to confirm that tests were satisfactory and the actual impact of the temporary modification on the permanent system and interfacing systems were adequately verified.

The inspectors selected the following temporary modifications for review for a total of three samples:

- temporary installation of hard pipe in place of 12 EDG engine-driven fuel oil pump suction strainer;
- temporary modification 8459 (install temporary fire pump); and
- temporary modification 8311 (install freeze seal on fire header for valve replacement work).

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 performance indicator. The inspection activities included, but were not limited to, the classification of events, notifications to off-site agencies, protective action recommendation development, and drill critiques. Observations were compared with the licensee's observations and corrective action program entries. The inspectors verified that there were no discrepancies between observed performance and performance indicator 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 August 9, 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.

4. OTHER ACTIVITIES

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 corrective action program. Additionally, the inspectors verified that the licensee was identifying issues at an appropriate threshold and entering them in the corrective action program, and verified that problems included in the licensee's corrective action program were properly addressed for resolution. Attributes reviewed included: complete and accurate identification of the problem; that timeliness was commensurate with the safety significance; that evaluation and disposition of performance issues, generic implications, common causes, contributing factors, root causes, extent of condition reviews, and previous occurrence reviews were proper and adequate; and that the classification, prioritization and focus were commensurate with safety and sufficient to prevent recurrence of the issue.

b. Findings

No findings of significance were identified.

.2 Daily Corrective Action Program Reviews

a. Inspection Scope

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

b. Findings

No findings of significance were identified.

.3 Annual Sample: Repetitive Signal Spiking of Area Radiation Monitors

a. Inspection Scope

On June 18, 2006, the "A" reactor building exhaust plenum radiation monitor spiked high resulting in a partial Group 2 and secondary containment isolation, actuation of the SBGT system, and transfer to the high-radiation mode of control room ventilation. Although the signal spike was not safety significant and did not challenge the normal operation of the plant (safety-related radiation monitors require only a one-out-of-two-taken-once logic), unplanned isolation and actuation of equipment presents a challenge to plant operators. On July 30, 2006, and again on August 19, 2006, the "B" fuel pool radiation monitor spiked high resulting in similar isolations and actuations as those that occurred on June 18. The inspectors chose to perform an in-depth review of the licensee's evaluation and corrective actions for the repetitive signal spikes of area radiation monitors. The inspectors reviewed corrective action program documents generated as a result of the events, the licensee's apparent cause and root cause evaluations, and the licensee corrective actions taken or planned to address radiation monitor signal spiking. Previous corrective action program documents associated with radiation monitor signal spiking were also reviewed to ensure that the licensee's corrective actions were appropriate with respect to the significance of the issue.

Assessment and Observations

The inspectors reviewed documentation and interviewed licensee personnel to determine whether the June 18, 2006, event was properly evaluated and assigned corrective actions in accordance with plant procedures and regulatory requirements. The licensee determined that the June 18 event was a severity level "A" issue because it involved an 8-hour event notification (discussed in Section 40A3) and Licensee Event Report to the NRC. Although severity level "A" issues require a root cause evaluation per Fleet Procedure FP-PA-ARP-01, "CAP Action Request Process", the licensee

determined during initial troubleshooting that the likely cause (faulty trip check switch), corrective action, and extent of condition was clear and well understood. Due to the initial understanding of the event, it was determined that an apparent cause evaluation was appropriate and sufficient to evaluate the issue. The licensee replaced the trip check switch in the "A" reactor building exhaust plenum radiation monitor and wrote work requests to replace the trip check switches in the "B" reactor building exhaust plenum radiation monitor and the "A" and "B" fuel pool radiation monitors. The inspectors noted that previous internal operating experience involving faulty trip check switches in non-safety related radiation monitors resulted in the licensee qualifying and procuring spare trip check switches in the spring of 2006. The replacement switches were not installed upon receipt in the safety related area radiation monitors because they did not exhibit any problems and it was believed that the switches would not interfere with the monitor's ability to perform its safety related function.

The inspectors reviewed the licensee's evaluation of the July 30 event associated with the "B" fuel pool radiation monitor. The licensee initially attributed the spiking to a faulty trip check switch after troubleshooting and reviewing historical internal operating experience. The inspectors noted that the corrective actions from the June 18 event which involved replacing the trip check switches on all safety related radiation monitors was not yet performed due to work scheduling priority. Because the issue was believed to be well understood, the licensee determined that an apparent cause evaluation was appropriate and short-cycled the replacement of the trip check switch on the "B" fuel pool radiation monitor.

The inspectors questioned why the trip switches were not replaced in the remaining two safety related monitors after the July 30 spike. The licensee stated that the apparent cause evaluation for the "B" fuel pool radiation monitor was ongoing when another spike occurred on August 19, 2006, after replacing the trip check switch and returning to service. The apparent cause evaluation precluded replacement of the trip check switches on the other monitors until the evaluation was complete. After the repeat spiking of the "B" fuel pool radiation monitor, the licensee determined that a root cause evaluation would be performed for all three events in lieu of completing the apparent cause evaluation for the July 30 event, and took immediate interim corrective actions, including replacement of the trip check switches in all safety related radiation monitors.

Upon completion, the inspectors reviewed the licensee's root cause evaluation 01045399-01, "Recurring Inadvertent Trip of 'B' Fuel Pool Radiation Monitor Results in Repeated Partial Group II Isolation, ESF Actuation and Reportable Event," approved September 21, 2006. The inspectors questioned the broad problem statement considering that a root cause of the event, as determined by the licensee, was the inherent one-out-of-two-taken-once logic of the area radiation monitors. The licensee emphasized that they wanted to capture all of the issues including the equipment design and event notifications.

The licensee determined that the initial apparent cause (faulty trip check switch) of the July 30 event was most likely incorrect. In addition, the evaluation ruled out several potential causes and determined that both spikes of the "B" fuel pool radiation monitor on July 30 and August 19 were due to electromagnetic interference (EMI). This

interference was determined to originate from a failed but energized sodium vapor lamp that was coupled with the "B" fuel pool radiation monitor's cable was inducing spurious noise. The inspectors reviewed the several scheduled corrective actions to prevent recurrence including minimizing the susceptibility of EMI coupling for the safety related area radiation monitors, modification of the trip logic associated with the monitors, and development of periodic maintenance of monitor connections.

Overall, the inspectors concluded that although the cause determination of the July 30 event was incorrect, the licensee's subsequent evaluations and corrective actions following the August 19 event appeared to be appropriately focused. Based on the inspector's review of these additional actions, both interim and planned licensee corrective actions appear to be appropriate to resolve the radiation monitor signal spiking issue.

b. Findings

No findings of significance were identified.

4OA3 Event Follow-up (71153)

.1 Recurring Secondary Containment Isolations Due to the "B" Fuel Pool Radiation Monitor Spiking High

On July 30, 2006, and August 19, 2006, the licensee made 10 CFR 50.72 8-hour non-emergency reports. Both events involved partial Group 2 and secondary containment isolations due to signal spikes of the "B" fuel pool radiation monitor. Both events resulted in closure of the drywell continuous air monitor and the oxygen analyzer primary containment isolation valves, reactor building ventilation isolation, start of the "A" SBT system, and transfer of the control room ventilation to the high radiation mode.

The inspectors evaluated the licensee's response to each of these events, which included actions taken to declare the "B" fuel pool radiation monitor inoperable and place it in a downscale trip condition. No significant issues were identified by the inspectors. The licensee's identification, evaluation, and resolution of the recurring events is discussed in Section 4OA2 of this report.

Subsequent to the event notifications to the NRC, the licensee determined that the isolation signals as a result of the "B" fuel pool rad monitor spikes were invalid, in that the signal spikes were not as a result of actual high radiation conditions. Thus, for the events on July 30 and August 19, 2006, and, a similar event on June 18, 2006, involving signal spiking of the "A" reactor building exhaust plenum monitor (discussed in Section 4OA3 of Monticello Inspection Report 2006003), the licensee retracted all three 10 CFR 50.72 notifications and reclassified the events as invalid per 10 CFR 50.73 and provided telephone notifications in lieu of LERs.

The inspectors reviewed the licensee's retraction and reclassification of each event; no significant issues were identified.

4OA6 Meetings

Exit Meeting

The inspectors presented the inspection results to Mr. Conway and other members of licensee management at the conclusion of the inspection on October 5, 2006. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

4OA7 Licensee-Identified Violations

None.

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
S. RadeBaugh, Maintenance Manager
K. Jepson, Radiation Protection-Chemistry Manager
W. Guldemon, Nuclear Safety Assurance Manager

Nuclear Regulatory Commission

B. Burgess, Chief, Reactor Projects Branch 2

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

None.

Closed

None.

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

Daily Average Mississippi River Level at the Monticello Plant for 1988 to 2006

Daily Average Mississippi River Level (June/July/August) at the Monticello Plant for 1988 to 2006

Daily Average Mississippi River Upstream Temperature at the Monticello Plant for 1987 through 1990 and 1995 through 2006

A.6; Acts of Nature; Revision 24

C.4-B.06.03.A; Decreasing Condenser Vacuum; Revision 9

C.6-CWT103; Discharge Canal Water Temperature - High; Revision 0

B.06.04-05; Circulation Water System Operation; Revision 38

Night Order for Degraded River Conditions

CAP 1041111; Discharge Canal Temperature Point Reset During Computer Work

CAP 1041502; Received Alarm "Intake Structure East Basin Low Level"

CAP 1041729; Log Boom is Causing a 3 to 4 inch D/P from River to Intake

CAP 1041732; Cavitation of Pumps in Intake Due to Air Released from Rake

CAP 1042451; Plant Operation Challenged by Environmental Conditions

Section 1R04: Equipment Alignment

2154-12; RHR System Prestart Valve Checklist; Revision 41

Drawing M-121; MNGP Piping & Instrumentation Diagram for RHR

2124; Plant Prestart Checklist Diesel Generators and Fuel Oil System; Revision 7

2154-14; Fuel Oil System Prestart Valve Checklist; Revision 15

2154-22; EDG Emergency Service Water System Prestart Valve Checklist; Revision 21

2154-28; Diesel Generator Air Start System Prestart Valve Checklist

Drawing M-112; RHRSW and Emergency Service Water Systems; Revision BR

Drawing M-133; Diesel Oil System; Revision AN

Drawing M-811; Service Water System and Makeup Intake Structure; Revision CJ

CAP 1001837; #12 EDG Panel C-31 Knife Switch Open

Drawing M-812; Screen Wash, Fire and Chlorination System Intake Structure; Revision AX

Drawing M-123; High Pressure Coolant Injection System (Steam Side); Revision 076

Drawing M-124; High Pressure Coolant Injection System (Water Side); revision AF

Drawing M-123-1; HPCI Hydraulic Control Lubrication System; Revision E

2154-10; High Pressure Coolant Injection System Prestart Valve Checklist; Revision 27

Section 1R05: Fire Protection

Strategy A.3-03-E; Reactor Building 962" Elevation North; Revision 6

Strategy A.3-04-E; Reactor Building Plenum; Revision 3

Strategy A.3-04-C; Reactor Building Corridor (985' Elevation North); Revision 3

Strategy A.3-04-A; Reactor Building 985' Elevation South; Revision 5
Strategy A.3-03-A; Recirculation Motor-Generator Set Room; Revision 5
Strategy A.3-01-D; Reactor Building Elevation 896' tank Room; Revision 6

Section 1R06: Flood Protection Measures

NSPLMI-95001; Monticello Individual Plant Examination of External Events; Revision 1
NSPNAD-99003; Monticello Individual Plant Examination; Revision 0

Section 1R07: Heat Sink Performance

3494; EDG Jacket Cooler Maximum Allowed Tubes Plugged, CA-03-111; Revision 10
1404-01; EDG ESW Heat Exchanger Performance Test; Revision 11

Section 1R11: Licensed Operator Requalification Program

Package for August 21, 2006 Evaluated Operator Simulator Requalification Exercise
3695; EP Performance Record; Revision 7
5790-102-02; Monticello Emergency Notification Report Form; Revision 34

Section 1R12: Maintenance Effectiveness

Monticello Maintenance Rule Program System Basis Documents
CAP 1032665; V-CH-27 Tripped on High Discharge Pressure
CAP 1032719; V-CH-27 Exhibits Small Leak on Condensing Coil
CAP 1041994; V-CH-1, Reactor Building Chiller Performance Shows Signs of Degrading
CAP 1042425; Multiple Issues with Cooling Coil Readiness for Hot Weather
CAP 1048907; V-CH-1 Chiller Removed from Service Due to Large Freon Leak
CAP 039841; Torus Water Level Increases Approximately .1 Inch Per 24 to 48 Hours
(approximately 400 gallons)
Drawing M-122; Core Spray System; Revision AM
Drawing M-120; RHR System; Revision BN
Drawing M-121; RHR System; Revision BR
Drawing M-114-1; Service Condensate System, Radwaste Building; Revision AD
1040-01; Turbine-Generator, Semiannual Operational Test; Revision 54
CAP 01004519; CV-1 Test Stroke Issue
CAP 01051814; CV-2 and CV-3 failed to Operate Properly During 1040-01 Test

Section 1R13: Maintenance Risk Assessments and Emergent Work Control

OWI-01.04; Operations General Procedural Guidance; Revision 13
Transmission Work Request 817587; Revision 2
4 AWI-04.04.06; Transmission Work Request; Revision 6
0255-02-III-1A; SBLC Comprehensive Pump and Valve Test; Revision 04

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

B.06.03-05; Main Condenser System Operation; Revision 20
CAP 1041597; Unexpected Hydrogen Water Chemistry Trip During Main Condenser Cross
Connect

Section 1R15: Operability Evaluations

50.59 Screening SCR-06-0277; Ventilation System Failure Calculation CA-95-029; Effects of Short Term Ambient Temperature Excursions on Plant Cabling; Revision 0
Safety Review Item 91-033; Evaluation of Temperature Effects on Safety-Related Electrical and Control Equipment Due to a Loss of Non-Safety Grade Ventilation Systems; Revision 14
CAP 1042480; Missed PM 7130 HPCI System Instrument Maintenance 7130; HPCI System Instrument Maintenance; Revision 25
CAP 1048907; V-CH-1 Chiller Removed from Service Due to Large Freon Leak 0147-01; A Train Standby Gas Treatment System Filter Tests; Revision 31
8197; Painting in Secondary Containment and in Adjacent Areas; Revision 10
CAP 01036957; Reactor Pressure Made Unexpected Step Change During Routine Monitoring Work Order Package 290565-03; Walkdown Front Standard and Turbine Control Linkage in Condenser Room

Section 1R19: Post-Maintenance Testing

0187-02; 12 EDG Test; Temporary Revision 57A
Equivalency Evaluation 7828; Engine Driven Fuel Pump Suction Line 0255-08-IA-1; RCIC Quarterly Pump and Valve Tests; Revision 63
7140; RCIC System Instrument Maintenance; Revision 21
0068; Spent Fuel Pool & Reactor Building Exhaust Plenum Monitor Calibration; Revision 27
4847; General Electric 7700 Line Motor Control Center Maintenance Procedure; Revision 17
0255-04-IA-1-1; RHR Loop A Quarterly Pump and Valve Tests; Revision 70
WO 156385-3; PM 4900-1 for MO-1753
4900-01-PM; PM for Limitorque Motor Operated Valves; Revision 23
MEI-09.03; Motor Operated Valve Preventative Maintenance and Periodic Verification Plan; Revision 6
MEI-09.04; Motor Operated Valve Post Maintenance Testing; Revision 4

Section 1R22: Surveillance Testing

WO 269798; 0006; Scram Discharge Volume Hi Level Scram Test and Calibration; Revision 23
WO 269861; 0011-A; Turbine Control Valve Fast Closure Scram Test and Calibration; Revision 08
0255-04-IA-1-1; RHR Loop A Quarterly Pump and Valve Tests; Revision 70
CAP 1048619; Temp Change May Not Have Accurately Tested RHRSW per 7070
CAP 1048618; Scheduled out of Service Time Exceeded for A Containment Spray/Cooling 4 AWI-09.04.01; Inservice Testing Program; Revision 24
0255-10-IA-1; Primary Containment Isolation Valve Exercise; Revision 32
CAP 1051625; CV-3269 Open Time Trend Band Exceeded During Post Maintenance Test
WO 290936; CV-3269, Air Line Supply to Regulator is Leaking at Fitting
CAP 1020113; CV-3269 Opened Outside its Trend Band During 0255-10-IA-1
0533; Containment Sump Flow Measurement Instrumentation; Revision 8
0003; Drywell High Pressure Scram and Group 2,3, and Secondary Containment Isolation and Calibration Procedure; Revision 21
0187-02; 12 emergency Diesel Generator/12 ESW Quarterly Pump and Valve Tests; Revision 57A

Section 1R23: Temporary Plant Modifications

Temporary Modification 8651; Install Solid Pipe in Place of 12 EDG Engine Driven Fuel Oil Suction Strainer

WO 142251; Replace Fuel Pump Suction Line

CAP 1041008; During Replacement of G-3B Fuel Oil Line Strainer Cracked

Temporary Modification 8459; Install Temporary Fire Pump

Temporary Modification 8311; Install Freeze Seal on Fire Header for Valve Replacement Work

Section 1EP6: Drill Evaluation

Controller Copy of the August 9, 2006, Monticello Emergency Plan Drill

EP Performance Record, and Copies of All Event 7 Classifications, Reclassifications, Event Notifications, and PARS Recommendations, for the August 9, 2006, Emergency Plan Drill

Section 4OA2: Identification and Resolution of Problems

CAP 1035996; "A" Plenum Monitor Spiking Causes ESF actuation

CAP 1042035; Spiking of 'B' Fuel Pool Monitor Causes ESF Actuation

CAP 1045399; 'B' Fuel Pool Rad Monitor High Spike Causes ESF Actuation

CAP 1049406; No tracking of FP/EP Rad Monitor Recommendation by ARDEC

FP-PA-ARP-01; CAP Action Request Process; Revision 12

Section 4OA3: Event Follow-up

MNGP 3195; Event Notification Worksheet for Event Notification 42740; Revision 30

MNGP 3195; Event Notification Worksheet for Event Notification 42788; Revision 31

LIST OF ACRONYMS USED

ADAMS	Agency-wide Documents Access and Management System
ARDEC	Age-Related Degradation of Electronic Components
CAP	Corrective Action Program
CFR	Code of Federal Regulations
D/P	Differential Pressure
EDG	Emergency Diesel Generator
EMI	Electromagnetic Interference
EP	Emergency Preparedness
ESF	Engineered Safety Feature
ESW	Emergency Service Water
HPCI	High Pressure Core Injection
IR	Inspection Report
kVAC	Kilovolts Alternating Current
LER	Licensee Event Report
MNGP	Monticello Nuclear Generating Plant
NRC	U.S. Nuclear Regulatory Commission
PARS	Publicly Available Records
PM	Planned or Preventive Maintenance
RCIC	Reactor Core Isolation Cooling
RHR	Residual Heat Removal
RHRSW	Residual Heat Removal Service Water
SBGT	Standby Gas Treatment
SBLC	Standby Liquid Control
SDP	Significance Determination Process
WO	Work Order