July 25, 2003

Mr. D. Wilson
Site Vice President
Monticello Nuclear Generating Plant
Nuclear Management Company, LLC
2807 West County Road 755
Monticello, MN 55362-9637

SUBJECT: MONTICELLO NUCLEAR GENERATING PLANT
NRC INTEGRATED INSPECTION REPORT 50-263/03-04

Dear Mr. Wilson:

On June 30, 2003, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Monticello Nuclear Generating Plant. The enclosed integrated inspection report documents the inspection findings which were discussed on July 2, 2003, 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.

Since the terrorist attacks on September 11, 2001, NRC has issued five Orders and several threat advisories to licensees of commercial power reactors to strengthen licensee capabilities, improve security force readiness, and enhance controls over access authorization. In addition to applicable baseline inspections, the NRC issued Temporary Instruction 2515/148, "Inspection of Nuclear Reactor Safeguards Interim Compensatory Measures," and its subsequent revision, to audit and inspect licensee implementation of the interim compensatory measures required by order. Phase 1 of TI 2515/148 was completed at all commercial nuclear power plants during calender year 2002 and the remaining inspection activities for the Monticello Nuclear Generating Plant are scheduled for completion in October 2003. The NRC will continue to monitor overall safeguards and security controls at the Monticello Nuclear Generating Plant.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosures 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 50-263/03-04
w/Attachment: Supplemental Information

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No:	50-263
License No:	DPR-22
Report No:	50-263/03-04
Licensee:	Nuclear Management Company, LLC
Facility:	Monticello Nuclear Generating Plant
Location:	2807 West Highway 75 Monticello, MN 55362
Dates:	April 1 through June 30, 2003
Inspectors:	S. Burton, Senior Resident Inspector D. Kimble, Resident Inspector G. Wilson, Senior Resident Inspector J. Adams, Senior Resident Inspector D. Karjala, Resident Inspector D. Jones, Regional Inspector G. Pirtle, Physical Security Inspector M. Mitchell, Radiation Specialist Inspector S. Ray, Senior Resident Inspector D. Wrona, Reactor Engineer
Observers:	R. Orlikowski, Resident Inspector R. Pascarelli, Reactor Engineer
Approved by:	Bruce L. Burgess, Chief Branch 2 Division of Reactor Projects

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ATTACHMENT: Supplemental Information

Enclosure

SUMMARY OF FINDINGS

IR 05000263/2003-004; on 04/01/03 - 06/30/03; Nuclear Management Company, LLC; Monticello Nuclear Generating Plant. Routine Integrated Report.

This report covers a 3-month period of baseline resident inspection and announced baseline inspections of security, radiation protection and inservice inspection. The inspections were conducted by Region III reactor inspectors, a physical security inspector, and 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. Inspector-Identified and Self-Revealed Findings

No findings of significance were identified.

B. Licensee-Identified Violations

None.

REPORT DETAILS

Summary of Plant Status

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

- On April 22, 2003, fuel cycle coastdown began followed by a shutdown for a planned refueling outage on April 26. The refueling outage continued through May 25, with power being restored to 100 percent on May 29 following startup testing and fuel preconditioning.

- On June 14, 2003, the reactor was shutdown for a maintenance outage to replace two leaking safety relief valves ("B" & "G"). The reactor was restarted on June 16 and the turbine connected to the grid on June 17. Full power was achieved late on June 17.

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 a walkdown of two systems to observe the licensee's preparations for adverse weather, including conditions that could result from high temperatures or high winds. As part of this inspection, the documents in Attachment 1 were utilized to evaluate the potential for an inspection finding. The inspectors focused on plant specific design features for the systems and implementation of the procedures for responding to or mitigating the effects of adverse weather. Inspection activities included, but were not limited to, a review of the licensee's adverse weather procedures, preparations for the summer season, a review of analysis and requirements identified in the Updated Safety Analysis Report (USAR). The inspectors also verified that operator actions specified by plant specific procedures were appropriate.

The inspectors evaluated readiness for seasonal susceptibilities for the following systems:

- heating and ventilation during the week ending 6/21; and
- Division I and Division II emergency diesel generators during the week ending 6/21.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment (71111.04)

a. Inspection Scope

The inspectors performed three partial walkdowns of accessible portions of trains of risk-significant mitigating systems equipment. As part of this inspection, the documents in Attachment 1 were utilized to evaluate the potential for an inspection finding. 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. Redundant or backup systems were selected by the inspectors during times when the trains were of increased importance due to the redundant trains of other related equipment being unavailable. 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 verify operability and proper equipment line-up:

- Division II residual heat removal service water (RHRSW) with Division I RHRSW out-of-service for maintenance during the week ending 4/5;
- Division II emergency diesel generator and Division II safety-related equipment power supplies with Division I emergency diesel generator out-of-service for repair of emersion heaters during the week ending 4/12; and
- high pressure core injection (HPCI) with reactor core isolation cooling (RCIC) out-of-service for maintenance during the week ending 4/19.

b. Findings

No findings of significance were identified.

1R05 Fire Protection (71111.05)

a. Inspection Scope

The inspectors walked down nine risk significant fire areas to assess fire protection requirements. As part of this inspection, the documents in Attachment 1 were utilized to evaluate the potential for an inspection finding. 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, the

potential to impact equipment which could initiate or mitigate a plant transient, or the impact on the plant's ability to respond to a security event. The inspection activities included, but were not limited to, the control of transient combustibles and ignition sources, fire detection equipment, manual suppression capabilities, passive suppression capabilities, automatic suppression capabilities, compensatory measures, and barriers to fire propagation.

The inspectors selected the following areas for review:

- Fire Zone 09, control room during the week ending 4/19;
- Fire Zone 12D, mechanical vacuum pump room during the week ending 4/19;
- Fire Zone 14C, turbine building railroad car area during the week ending 4/19;
- Fire Zone 15E, diesel oil pump building during the week ending 4/19;
- Fire Zone 19A, makeup demineralizer area during the week ending 4/19;
- Fire Zone 19B, turbine building 480 Vac essential motor control center area on the 931' elevation during the week ending 4/19;
- Fire Zone 21A, radwaste control room during the weeks ending 4/19 and 5/10;
- Fire Zone 21B, radwaste trash compactor area during the weeks ending 4/19 and 5/3; and
- Fire Zone 21D, radwaste upper levels during the weeks ending 4/19 and 5/3.

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures (71111.06)

a. Inspection Scope

The inspectors performed an annual review of flood protection barriers and procedures for coping with external flooding. The inspectors utilized the documents listed in Attachment 1 to accomplish the objectives of the inspection procedure. The inspection focused on verifying that flood mitigation plans and equipment were consistent with design requirements and risk analysis assumptions. The inspection activities included, but were not limited to, a review and/or walkdown to assess design measures, seals, drain systems, contingency equipment condition and availability of temporary equipment and barriers, performance and surveillance tests, procedural adequacy, and compensatory measures. The inspection was conducted during the weeks ending 4/12 and 4/19.

b. Findings

No findings of significance were identified.

1R08 Inservice Inspection Activities (71111.08)

a. Inspection Scope

The inspectors conducted a review of the licensee's inservice inspection (ISI) program for monitoring degradation of the reactor coolant system boundary and the risk significant piping system boundaries. Specifically, the inspectors conducted in-process observations and reviewed records of nondestructive examinations performed during the Monticello Nuclear Generating Plant Refueling Outage 21.

The inspectors observed:

- ultrasonic examination of HPCI steam system welds 21, 21A, and 21B

The inspectors reviewed the following ISI reports:

- ultrasonic examination of main steam "C" system weld 24;
- ultrasonic examination of recirculation manifold "A" pipe-to-pipe weld 30; and
- liquid penetrant examination of control rod drive to reactor water clean up weld 11.

These examinations were evaluated for compliance with the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code requirements. The inspectors also reviewed ISI procedures, personnel certifications, and NIS-2 forms for Code repairs performed during the last outage (Refueling Outage No. 20) to confirm that ASME Code requirements were met.

The inspectors also reviewed a sample of ISI-related problems documented in the licensee's corrective action program to assess conformance with 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," requirements. In addition, the inspectors reviewed the licensee's evaluation of operating experience for its applicability to the ISI program.

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. As part of this inspection, the documents in Attachment 1 were utilized to evaluate the potential for an inspection finding. 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.

During the week ending June 21, the inspectors observed a training crew during an evaluated simulator scenario. The scenario included a failure of a safety relief valve, a circulating pump seal failure, turbine failure with loss of condenser vacuum, and an anticipated transient without scram (ATWS). The transient resulted in entry into the emergency operating procedures, reduced reactor level and control rod insertion using alternate methods.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12)

a. Inspection Scope

The inspectors reviewed one system to assess maintenance effectiveness. As part of this inspection, the documents in Attachment 1 were utilized to evaluate the potential for an inspection finding. The inspectors reviewed areas 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 condition reports, and current equipment performance status.

The inspectors performed the following maintenance effectiveness review:

- a function-oriented review of the residual heat removal (RHR)/low pressure coolant injection (LPCI) system because it was designated as risk significant under the Maintenance Rule, during the week ending May 17, 2003.

b. Findings

No findings of significance were identified.

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

a. Inspection Scope

The inspectors reviewed three maintenance activities to review risk assessments (RAs) and emergent work control. As part of this inspection, the documents in Attachment 1 were utilized to evaluate the potential for an inspection finding. The inspectors verified the performance and adequacy of RAs, management of resultant risk, entry into the appropriate licensee-established risk bands, and the effective planning and control of emergent work activities. The inspection activities included, but were not limited to, a verification that licensee RA procedures were followed and performed appropriately for routine and emergent maintenance, that the RAs for the scope of work performed were accurate and complete, that necessary actions were taken to minimize the probability of initiating events, and that activities to ensure that the functionality of mitigating systems and barriers were performed. Reviews also assessed the licensee's evaluation of plant risk, risk management, scheduling, configuration control, and coordination with other scheduled risk significant work for these activities. Additionally, the assessment included an evaluation of external factors, the licensee's control of work activities, and appropriate consideration of baseline and cumulative risk.

The inspectors observed maintenance or planning for the following activities or risk significant systems undergoing scheduled or emergent maintenance:

- troubleshooting of Breaker No. B3105 and repair of No. 11 emergency diesel generator emersion heaters during the weeks ending 4/12 and 4/19;
- repair of "A" main steam isolation valve during the weeks ending 5/24 and 6/7; and
- repair of leaking safety relief valves "B" and "G" during the weeks ending 6/7 through 6/21.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors performed four operability evaluations of degraded or non-conforming systems that potentially impacted mitigating systems or barrier integrity. As part of this inspection, the documents in Attachment 1 were utilized to evaluate the potential for an inspection finding. The inspectors reviewed operability evaluations affecting mitigating systems or barrier integrity to ensure that operability was properly justified and that the component or system remained available. The inspection activities included, but were not limited to, a review of the technical adequacy of the operability evaluations to determine the impact on Technical Specifications (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:

- standby liquid control (SBLC) explosive valve cable jacket was degraded during the week ending 4/19;
- torus cooling water line from RHR has low thickness readings during the week ending 6/14;
- high pressure core injection high level torus transfer switches during the weeks ending 4/5 and 6/28; and
- standby gas treatment with blank flange installed during the weeks ending 4/26 and 6/28.

b. Findings

No findings of significance were identified.

1R16 Operator Workarounds (OWA) (71111.16)

a. Inspection Scope

The inspectors performed a semiannual review of the cumulative effects of operator workarounds. As part of this inspection, the documents in Attachment 1 were utilized to evaluate the potential for an inspection finding. The inspectors reviewed operator workarounds to identify any potential effect on the functionality of mitigating systems. The inspection activities included, but were not limited to, a review of the cumulative effects of the operator workarounds on the availability and the potential for improper operation of the system, for potential impacts on multiple systems, and on the ability of operators to respond to plant transients or accidents. Additionally, reviews were conducted to determine if the workarounds could increase the possibility of an initiating event, if the workaround was contrary to training, required a change from long standing operational practices, created the potential for inappropriate compensatory actions, impaired access to equipment, or required equipment uses for which the equipment was not designed.

The inspectors focused the inspection on the RHR system and the licensee's list of documented workarounds during the week ending 6/28.

b. Findings

No findings of significance were identified.

1R17 Permanent Plant Modifications (71111.17)

a. Inspection Scope

The inspectors reviewed two permanent plant modifications. As part of this inspection, the documents in Attachment 1 were utilized to evaluate the potential for an inspection finding. The inspectors 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

modifications did not place the plant in an unsafe configuration. The inspection activities included, but were not limited to, a review of the design adequacy of the modification by performing a review, or partial review, of the modification's impact on plant electrical requirements, material requirements and replacement components, response time, control signals, equipment protection, operation, failure modes, and other related process requirements.

The inspectors selected the following permanent plant modifications for review:

- emergency diesel generator exhaust modification for tornado loading during the weeks ending 5/3 and 5/17; and
- residual heat removal head spray line removal during the week ending 5/3.

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing (71111.19)

a. Inspection Scope

The inspectors reviewed six post-maintenance testing activities. As part of this inspection, the documents in Attachment 1 were utilized to evaluate the potential for an inspection finding. The inspectors verified that the post-maintenance test procedures and activities were adequate to ensure system operability and functional capability. Activities were selected based upon the structure, system, or component's ability to impact risk. The inspection activities included, but were not limited to, witnessing or reviewing the integration of testing activities, applicability of acceptance criteria, test equipment calibration and control, procedural use and compliance, control of temporary modifications or jumpers required for test performance, documentation of test data, system restoration, and evaluation of test data. Also, the inspectors verified that maintenance and post-maintenance testing activities adequately ensured that the equipment met the licensing basis, TS, and USAR design requirements.

The inspectors selected the following post-maintenance activities for review:

- non-destructive testing for contaminants removed from control rod drive piping during the week ending 4/5;
- post-maintenance testing of No. 11 emergency diesel generator emersion heater replacement during the weeks ending 4/12 and 4/19;
- post-maintenance testing of the emergency diesel generator foundation bolting following outage maintenance during the week ending 5/10;
- post-maintenance testing of the emergency diesel generator following bearing inspections during the week ending 5/10;
- post-maintenance testing of the "A" main steam isolation valve during the weeks ending 5/24 and 6/7; and
- post-maintenance testing of the "B" and "G" safety relief valves during the week ending 6/21.

b. Findings

No findings of significance were identified.

1R20 Outage Activities (71111.20)

a. Inspection Scope

The inspectors evaluated outage activities for two outages, a refueling outage that began on April 26, 2003, and ended on May 26, 2003, and a maintenance outage that began on June 13, 2003, and ended on June 17, 2003. As part of this inspection, the documents in Attachment 1 were utilized to evaluate the potential for an inspection finding. The inspectors reviewed activities to ensure that the licensee considered risk in developing, planning, and implementing the outage schedule, developed mitigation strategies for loss of key safety functions, and adhered to operating license and technical specification requirements to ensure defense-in-depth. The inspection activities included, but were not limited to, a review of the outage plan, monitoring of shutdown and startup activities, control of outage activities and risk, and observation of reduced inventory operations, maintenance and refueling activities.

In addition to activities inspected utilizing specific procedures, the following represents a partial list of the major outage activities the inspectors reviewed/observed, all or in part:

- review of both outage plans and the ready-backlog;
- control room turnover meetings and selected pre-job briefings;
- reactor shutdown and cooldown;
- control room demeanor, communications, self/peer checking, and equipment panel control;
- outage planning and scheduling meetings;
- monitoring and control of reactor level with the vessel open;
- drywell entry and control of containment activities;
- control rod drive piping inspections;
- steam dryer and separator removal and installation;
- refueling activities;
- main steam line isolation valve repair;
- replacement of safety relief valves “B” and “G”;
- leak rate testing activities;
- building, equipment and work-in-progress walkdowns and monitoring;
- outage equipment configuration and risk management;
- electrical line-ups;
- selected clearances;
- control and monitoring of decay heat removal;
- drywell closure;
- startup and heatup activities, including criticality, feed pump startup, main turbine generator startup and synchronization, and elements of power escalation to full power; and
- identification and resolution of problems associated with the outage.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors reviewed seven surveillance test activities. As part of this inspection, the documents in Attachment 1 were utilized to evaluate the potential for an inspection finding. The inspectors reviewed surveillance testing activities to assess operational readiness and 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 were left unresolved. The inspection activities included, but were not limited to, a review for preconditioning, integration of testing activities, applicability of acceptance criteria, test equipment calibration and control, procedural use, control of temporary modifications or jumpers required for test performance, documentation of test data, TS applicability, impact of testing relative to performance indicator reporting, and evaluation of test data.

The inspectors selected the following surveillance testing activities for review:

- reactor core isolation cooling system pump and valve tests on 4/16 and 4/17;
- low pressure coolant injection valve in-service leak testing during the weeks ending 4/26 and 5/3;
- standby liquid control system refueling tests during the week ending 5/10;
- safety relief valve functional test during the week ending 5/10;
- reactor coolant pressure boundary leakage test during the weeks ending 5/17 and 5/24;
- leak rate testing of scram discharge check valves during the week ending 5/24; and
- main steam isolation valve (MSIV) leak rate testing during the week ending 5/10 and 6/14.

b. Findings

No findings of significance were identified.

1EP6 Drill Evaluation (71114.06)

a. Inspection Scope

The inspectors reviewed two emergency preparedness drills. As part of this inspection, the documents in Attachment 1 were utilized to evaluate the potential for an inspection finding. The inspectors selected exercises 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 resident inspectors reviewed a health physics airborne release drill performed on April 8, and the licensee's annual drill conducted on June 18, 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 Plant Walkdowns, Radiological Boundary Verification, and Radiation Work Permit (RWP) Reviews

a. Inspection Scope

The inspectors reviewed the implementation of physical and administrative controls over access to radiologically controlled areas (RCAs), including worker adherence to these controls, by reviewing station procedures, RWPs, electronic dosimetry alarm set points, and walking down radiologically significant areas (airborne radioactivity areas, radiation areas, high radiation areas (HRAs), and locked HRAs) of the station. Specifically, areas in the reactor, turbine and radwaste buildings were observed and independent measurements of area radiation levels were made to verify these areas were posted and controlled in accordance with 10 CFR Part 20, licensee procedures, and TSs.

b. Findings

No findings of significance were identified.

.2 High Risk Significant, High Dose Rate (HDR)-Locked HRA and Very-HRA Controls

a. Inspection Scope

The inspectors reviewed the station's implementation of physical and administrative controls over access to HDR-locked HRAs and Very-HRAs, including a discussion of these controls with radiation protection (RP) supervisors and lead RP technicians, to verify that processes and procedures (including any recent changes) implementing these controls provided an appropriate level of worker protection. The inspectors conducted walkdowns of all accessible HDR-locked HRA boundaries to verify adequate

posting and control of all entrances into these areas. Additionally, the inspectors reviewed selected plant survey maps to confirm that no Very-HRAs existed in the current plant configuration as discussed with the RP staff.

b. Findings

No findings of significance were identified.

.3 Identification and Resolution of Problems

a. Inspection Scope

The inspectors selected licensee corrective actions related to access control to radiologically significant areas and verified that the licensee had entered identified problems into their corrective action program. The inspectors verified that the licensee identified issues at an appropriate threshold, that these issues were correctly entered in the corrective action program, and that these issues were properly addressed for resolution.

b. Findings

No findings of significance were identified.

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

.1 Radiological Work/ALARA Planning

a. Inspection Scope

The inspectors reviewed the station's procedures for radiological work, ALARA planning and scheduling, and evaluated the dose projection methodologies and practices implemented for the refueling outage to verify that sound technical bases for outage dose estimates existed. Specifically, the inspectors reviewed five radiologically significant RWP/ALARA planning packages to verify that adequate person-hour estimates, job history files, lessons learned, industry experiences, and the use of mockups (where applicable) were utilized in the ALARA planning process and to confirm that these elements were integrated into the associated RWPs. The RWP/ALARA planning packages included:

- reactor disassembly and reassembly (RWP 30701);
- ALARA efforts in drywell (RWP 30507);
- install and remove scaffolding (RWP 30523);
- remove and replace insulation in drywell (RWP 30529); and
- perform radiation protection surveys (RWP 30500).

The inspectors compared the results achieved (dose rate reductions, person-rem used) with intended dose established in the ALARA planning for the selected work activities from the start of the refueling outage through May 2, 2003, to verify that planning activities were effectively implemented. The inspectors evaluated the interfaces

between the ALARA planning group and the implementing departments to assess interface problems or missing program elements. This included a comparison of person-hour estimates provided by the department planning groups and the ALARA planning group in conjunction with on-going job progress reviews.

b. Findings

No findings of significance were identified.

.2 Job Site Inspections and ALARA Controls

a. Inspection Scope

The inspectors observed work activities in the RCA that were performed in radiation areas, HRAs, and locked HRAs to evaluate the use of ALARA controls. Specifically, the inspectors reviewed radiological surveys, attended pre-job radiological briefings, and assessed job site ALARA controls, in part, for the following work activities:

- reactor disassembly and reassembly (RWP 30701);
- install and remove scaffolding in drywell (RWP 30523);
- perform radiation protection surveys (RWP 30500); and
- change-out control rod drives (RWP 30525).

Worker instruction requirements, including protective clothing, engineering controls to minimize dose exposures, the use of predetermined low dose waiting areas, as well as the on-the-job supervision by the work crew leaders and RP technicians, were observed to determine if the licensee had maintained the radiological exposure for these work activities' ALARA. Enhanced job controls, including RP technician use of electronic teledosimetry and cameras, was also evaluated to assess the licensee's ability to maintain real time doses ALARA in the field.

b. Findings

No findings of significance were identified.

.3 Radiation Worker Performance

a. Inspection Scope

The inspectors observed radiation workers performing the activities described in Section 2OS2.2 and evaluated their awareness of radiological conditions, personal electronic dosimetry alarm set points, and their implementation of applicable radiological controls.

b. Findings

No findings of significance were identified.

.4 Verification of Dose Estimates, Dose Trending, and Dose Tracking Systems

a. Inspection Scope

The inspectors reviewed the licensee's total outage dose estimates, selected individual job dose estimates and the related dose trending for the refueling outage. The ALARA In-Progress reviews for RWP No. 30117, "Reactor Water Clean-up Valve Work," were examined to evaluate the licensee's ability to assess the effectiveness of the ALARA plans in a timely manner and institute changes in the plan or its execution, if necessary. The licensee's dose tracking system was also reviewed to determine if the level of dose tracking detail, dose report timeliness, and report distribution were sufficient to support the control of collective and individual dose.

b. Findings

No findings of significance were identified.

.5 Declared Pregnant Worker Program

a. Inspection Scope

The inspectors reviewed the administrative controls implemented by the licensee for workers who voluntarily entered the licensee's fetal protection program. The inspectors assessed the licensee's adherence to the requirements contained in 10 CFR 20.1208 and station procedures by reviewing the licensee's tracking and evaluation of the dose to the workers' embryos/fetuses. Specifically, the inspectors examined the licensee's program to ensure that any declared pregnant workers' monthly and cumulative exposure for the gestation period were controlled so as not to exceed regulatory limits.

b. Findings

No findings of significance were identified.

.6 Identification and Resolution of Problems

a. Inspection Scope

The inspectors reviewed licensee condition reports (CRs) written during the refueling outage which focused on ALARA planning and controls. The inspectors reviewed these documents to assess the licensee's ability to identify repetitive problems, contributing causes, the extent of conditions, and develop corrective actions intended to achieve lasting results. Additionally, the inspectors reviewed the licensee's Nuclear Oversight Observation Reports related to access control to radiologically restricted areas and ALARA, a focused self-assessment of exposure monitoring, and chemistry and radiation protection quarterly effectiveness reports to determine if identified problems were entered into the corrective action program.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification (71151)

Cornerstones: Initiating Events

a. Inspection Scope

The inspectors sampled licensee submittals for the performance indicators (PIs) listed below for the period from January 2002 to April 2003 for the Unplanned Power Changes per 7000 Critical Hours PI and for the period from April 2002 to April 2003 for the Unplanned Scrams per 7000 Critical Hours and Scrams with Loss of Normal Heat Removal PIs. To verify the accuracy of the PI data reported during that period, PI definitions and guidance contained in Revision 1 of Nuclear Energy Institute Document 99-02, "Regulatory Assessment Performance Indicator Guideline" were used.

The following PIs were reviewed:

- unplanned scrams per 7000 critical hours;
- scrams with loss of normal heat removal; and
- unplanned power changes per 7000 critical hours.

In addition, the inspectors reviewed licensee event reports (LERs), licensee memoranda, plant logs, and other documents listed in Attachment 1 to determine whether the licensee adequately identified the number of scrams and unplanned power changes greater than 20 percent that occurred during the time period in question. The inspectors also verified the number of critical hours reported. The inspectors also interviewed licensee personnel associated with the PI data collection, evaluation, and distribution.

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems (71152)

Cornerstone: Occupational Radiation Safety

.1 Radioactive Source Control

Introduction

As part of the Access Control to Radiologically Significant Areas (Section 2OS1), the inspectors verified that the licensee had entered identified problems into their corrective

action program. During this inspection the inspectors identified several CRs related to control of sources. Because of the number of issues identified, the inspectors selected licensee corrective actions related to control of radioactive sources for periodic review of the problem identification and resolution program per NRC Inspection Procedure (IP) 71152. Additionally, the inspectors verified that the licensee identified issues at an appropriate threshold, that these issues were correctly entered in the corrective action program, and that they were properly addressed for resolution 1.

The CRs listed below document source control issues that were part of the CR review. The inspectors questioned licensee staff regarding the current inventory and accountability of radioactive sources in the plant's restricted and unrestricted areas. One of the purposes for the inventory is to assure compliance with 10 CFR 20.1501 (a), which requires each licensee to make surveys that are reasonable under the circumstances to evaluate concentrations or quantities of radioactive material and the potential radiological hazards. Additionally, radioactive source accountability assures precluding the inadvertent release of radioactive material to the public domain.

- On November 27, 2000, a non-exempt cobalt-60 source attached to an area radiation monitor (ARM), that had decayed over time to an exempt quantity, was lost. An exempt source was issued as the replacement but placed in a manner that could become accessible to unauthorized personnel. The source was later moved to the inside of the ARM to limit accessability. This source was, and continues to be, in the inventory even though exempt. The source is located outside the RCA. (CR 00005132)
- In the fall of 2001, two inventoried sources were moved from storage to permanent mountings on the Off Gas Pretreatment Rad Monitors and not recorded according to the R.06.01, "Radioactive Source Control," procedure. When this was identified, approximately 6 months later, it was properly recorded. (CR 02004668)
- On September 17, 2001, a source was transferred from the chemistry laboratory and placed in-service in the emergency offsite facility and not recorded according to the R.06.01, "Radioactive Source Control," procedure. The transfer was recorded upon identification. (CR 02010492)
- On May 9, 2002, the licensee staff moved a portable survey instrument containing a radioactive source from the RCA storage area to a storage locker in the count room of the offsite training center. This transaction was not recorded according to the R.06.01, "Radioactive Source Control," procedure. The transfer was recorded upon identification. (CR 02004433)
- On January 14, 2003, the licensee identified that five ARM detectors were released by access control from the RCA for disposition off-site. One of the ARMs had 33 nanocurie radium-226 source inside the detector housing and this was not identified during the release process. (CR 03000448)
- On February 26, 2003, the licensee staff identified, through an operating experience notice, that explosive vapor detectors used in the security building actually contain nickel-63 sources and required periodic inventory and leak testing in accordance with 4AWI-08.04.01. (CR 03002154)

a. Effectiveness of Problem Identification

(1) Inspection Scope

The inspectors reviewed the above listed CRs and multiple associated condition reports. The inspectors' review included verification that problem identification was complete, accurate, and timely, and that the issue considered that the evaluations for extent of condition, generic implications, common causes, and previous occurrences were adequate.

(2) Issues

The licensee documented in CR 00005132 that an exempt source was being used in the control room and was not secured from unauthorized removal. In CRs 02004668 and 02010492, sources were moved from storage and placed in-service without proper documentation of the transfer. In CR 02004433, the licensee identified that a survey meter with a radioactive check source was transferred to and stored at the training center without notifying the radiation protection supervisor of the transfer of a radioactive source off-site. The inspectors observed that the investigation was expanded to other potential source locations in the training center. Additionally, the licensee inventoried all sources in the training facility in an attempt to bound the scope of the problem. In CR 03000448, an ARM was removed from the RCA without an appropriate survey to verify the presence of an exempt source. These CRs followed the licensee's requirements for problem identification.

b. Prioritization and Evaluation of Issues

(1) Inspection Scope

The inspectors reviewed CR 00005132, 02004433, and 03000448. The inspectors considered the licensee's evaluation and prioritization of performance issues and application of risk insights for prioritization of issues.

(2) Issues

The review of the CRs revealed that the licensee had taken immediate and appropriate corrective action, and prioritized the issues based on safety or risk significance.

c. Effectiveness of Corrective Actions

(1) Inspection Scope

The inspectors reviewed CRs 00005132, 02004433, 02004668, 02010492, and 03000448, and multiple related condition reports to determine if the condition reports addressed generic implications and that the corrective actions were appropriately focused to correct the problem.

(2) Issues

Each CR reviewed found no violations of applicable procedures. Additionally, the inspectors observed that corrective actions appeared adequate. However, the inspectors also noted that the corrective actions were specifically focused on correcting only the issues identified and that each occurrence did not address the impact of the condition on other procedures or similar potential incidents. Notably, each issue continued to broaden the scope of prior corrective actions, thereby demonstrating that the earlier corrective actions were narrowly focused.

Condition Report 00005132, discussed the procedural requirements associated and the perceived basis for control of exempt sources. Specifically, Procedure MNGP R.06.01, “Radioactive Source Control,” Revision 12, required that all other [exempt] sources should be controlled . . . (to) prevent handling by unauthorized personnel. The immediate corrective action to secure the inventoried exempt source inside the ARM housing was effective. However, the discussion at the end of the follow-up section of the condition report states that the source could be removed and re-attached to the outside of the detector, if desirable, thereby nullifying the corrective action.

In the fall of 2001, two CRs (02004668 and 02010492) identified that sources were removed from storage and placed in-service without recording the source transfers in accordance with Procedure R.06.01, "Radioactive Source Control." Upon identification, the transfers were properly recorded. Additional corrective actions involved retraining of the radiation protection staff on the specific source transfer procedure. However, the extent of condition was not expanded to assess the impact of the issue on other similar procedures.

The extent of condition for a source control issue (CR 02004433) involving a source that was transferred to the training center verified that no additional sources had been stored or inadvertently transferred to the training center. The immediate corrective action corrected procedural and regulatory (posting) compliance. The long term corrective action addressed specific training of radiation protection staff regarding transferring this specific instrument and the attached source. Additionally, a procedural modification to MNGP R.06.01 was implemented to require notification of the health physicist prior to releasing a source.

On January 14, 2003, the licensee identified that five ARM detectors were released from the RCA for disposition off-site (CR 03000448). The only source, located in one of the five detectors, was subsequently recovered. The immediate corrective action was a temporary change to Procedure MNGP R.06.02, "Unconditional Release of Equipment or Material." The change required that all ARMs be dismantled and surveyed for a radioactive source, and required notification of the radiation protection supervisor if a source was identified. This action enhanced the prior modification of MNGP R.06.01, which required notification of the health physicist prior to releasing a source off-site.

.2 Motor-Operated Valve Stem Thrust Excessive

a. Inspection Scope

As part of the maintenance effectiveness inspection (Section 1R12) for issues associated with RHR/LPCI, the inspectors reviewed CRs which were initiated because the motor-operated valve (MOV) as-found VOTES test measured stem thrust exceeded the maximum allowable. 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, focus, and timeliness of corrective actions were commensurate with safety and sufficient to prevent recurrence of the issue.

b. Findings

No findings of significance were identified. The evaluation for the MOV measured stem thrust exceeding maximum allowable was incomplete as of May 17, 2003. It appeared that additional uncertainties (rate of loading) were added to the thrust window calculation that were unnecessary, which resulted in the thrust window being overly conservative.

4OA3 Event Follow-up (71153)

.1 (Closed) Licensee Event Report 50-263/2002-007-00: "Application of Instrumentation Deviation Acceptance Criteria Allowed As-found Settings for High Drywell Pressure to be Outside Technical Specification Value"

On November 21, 2002, the licensee discovered that the as-found value for two channels of high drywell pressure scram instrumentation exceeded the limits identified in TSs. This issue is a continuation of an issue prior-identified in LER 50-263/2002-02, Revisions 0 and 1: "Application of Instrument Deviation Acceptance Criteria Allowed As-Found Settings to be Outside Technical Specification Value," and documented in Inspection Report 50-263/2002-004. The licensee evaluated these instances to be of very low safety significance due to the fact that the as-found parameter values for these instruments were all within the acceptance band created by using the allowed TS bases deviation. The inspectors determined that no findings of significance were associated with this event. The licensee entered this issue into their corrective action program as CR 02009786.

4OA5 Other Activities

.1 (Closed) URI (50-263/01-05-03): The Unresolved Item pertains to the security equipment performance indicator (PI). The Security Equipment PI consists of counting

compensatory hours for the perimeter intrusion detection system (IDS) and the closed circuit television (CCTV) system. The PI Indicator Value is determined by adding the IDS Unavailability Index plus the CCTV Unavailability Index and dividing by 2. At Monticello, compensatory measures for the CCTV system are not required except for catastrophic equipment failures that exceed the ability of the on duty security force to compensate for. Therefore, the current PI indicator value for the Protected Area Security Equipment shows only half the out-of-service time requiring compensatory man-hours for the perimeter detection system. The Unresolved Item addresses whether or not Monticello should use the part of the PI formula pertaining to CCTV compensatory hours since the security force is not required to routinely compensate for CCTV degradations. This issue is being evaluated by NRC Headquarters and resolution of the issue will be addressed by separate correspondence.

4OA6 Meetings

.1 Exit Meeting

The inspectors presented the inspection results to Mr. Wilson and other members of licensee management on July 2, 2003. 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:

- Radiation Protection inspection with Mr. David Wilson on May 2, 2003; and
- Inservice inspection (IP 71111.08) with Mr. David Wilson on May 9, 2003.

4OA7 Licensee-Identified Violations

None.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee
J. Forbes, Senior Vice President
D. Wilson, Site Vice President
J. Purkis, Plant Manager
R. Baumer, Licensing
G. Bregg, Manager, Quality Services
R. Deopere, Inspection Supervisor
K. Jepsen, Radiation Protection Manager
T. Jones, NDE Coordinator
B. Linde, Security Manager
D. Neve, Regulatory Affairs Manager
C. Schibonski, Safety Assessment Manager
W. Shinnick, ALARA Coordinator
E. Sopkin, Director of Engineering

Nuclear Regulatory Commission
B. Burgess, Chief, Reactor Projects Branch 2

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

None.

Closed

50-263/2002-007-00	LER	Application of Instrumentation Deviation Acceptance Criteria Allowed As-found Settings for High Drywell Pressure to be Outside Technical Specification Value (Section 4OA3)
50-263/2001-005-03	URI	Computation of Security Equipment Performance Indicator (Section 40A5)

Discussed

None.

LIST OF DOCUMENTS REVIEWED

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

1R01 Adverse Weather

Documents and Procedures:
- USAR Section 8.4; Plant Standby Diesel Generator Systems; Revision 19
- 2014-01; Turbine/Recombiner/Transformer Daily Log and Check Sheets (Inside); Revision 0
- 2015; Intake Structure; Revision 24
- Operations Manual A.6; Acts of Nature; Revision 16
- Operations Manual B.09.08-05; Emergency Diesel Generators; Revision 15
- DBD-B.09.08; Design Bases Document for Emergency Diesel Generator System; Revision C
- 1150; Summer Checklist; Revision 32

1R04 Equipment Alignment

Drawings and Prints:
- M-112; RHR Service Water and Emergency Service Water Systems; Revision BJ
- M-811; Service Water System and Make-up Intake Structure; Revision CE
- NF-36298-1; Electric Load Flow; Revision P
- M-123; HPCI (Steam Side); Revision AM
- M-123-1; HPCI Hydraulic Control and Lubrication; Revision C
- M-124; HPCI Water Side; Revision AC

Operations Manual:
- B.9.8; Emergency Diesel Generators
- B.3.2; High Pressure Coolant Injection System

Technical Specifications:
- 3/4.9.B.3; Standby Diesel Generators

1R05 Fire Protection

Pre-Fire Fighting Procedures and Strategies:
- A.3-09; Control Room; Revision 3*
- A.3-12D; Mechanical Vacuum Pump Room; Revision 4
- A.3-14C; Turbine Building Railroad Car Area; Revision 2
- A.3-15E; Diesel Oil Pump Building; Revision 2*
- A.3-19A; Makeup Demineralizer Area; Revision 3
- A.3-19B; Essential Motor Control Center Area (931' Turbine Building Elevation); Revision 5

- A.3-21A; Radwaste Control Room; Revision 2*
- A.3-21B; Radwaste Trash Compactor Area; Revision 2*
- A.3-21D; Radwaste Upper Levels; Revision 2*

Operations Manual:
- B.8.5; Fire Protection Systems

1R06 Flood Protection Measures

Documents and Procedures:
- T.5; Design Basis Document - External Flooding
- 1478; Annual Flood Surveillance; Revision 1
- A.6; Operations Manual - Acts of Nature; Revision 15

Drawings and Prints:
- NH-178639; Flood Barriers for A.6 Acts of Nature Procedure; Revision A
- NF-36379; Piping Drawing Intake Structure Plan at Elevation 919.0'-0"; Revision C
- NF-36378; Piping Drawing Intake Structure Section A-A & B-B; Revision D
- NF-36440; Intake Structure Section C-C, D-D, & E-E; Revision C
- NF-36441; Piping Drawing Intake Structure Access Tunnel; Revision D

Condition Reports:
- 03003927; Installation of Shelter for Scale Inhibitor System Did Not Consider Impact on Intake Structure External Flood Barrier

Updated Safety Analysis Report:
- 12.2.1.7.1; External Flooding; Revision 19

1R08 Inservice Inspection

Documents and Procedures:
- PEI-02.01.01; Solvent Removable, Visible Dye Penetrant Examination; April 18, 2003
- PEI-02.03.02; Ultrasonic Examination of Ferritic Piping Welds to Appendix VIII; April 25, 2003
- PEI-02.05.05; Visual Examination of Monticello Reactor Vessel Inspection; April 25, 2003

Condition Reports:
- 20000209; In-Vessel Inspections Found Indications on Jet Pump Brace
- 20000318; Minor Indications Found on CRD Lines During Eddy Current Examination

1R11 Licensed Operator Requalification Program

Documents and Procedures:
- RQ-SS-06E; Simulator Scenario - Turbine Failure with ATWS (and referenced procedures); Revision 2

1R12 Maintenance Effectiveness

Condition Reports:
- 02005790; MO-1987 Failed PMT Following Maintenance PM Due to Failed K37 Relay in the ASDA Panel C292
- 03001523; 13 RHR Pump Failed to Start for Torus Cooling

Work Orders:
- 0200757; PM 4900-1 for MO-2014
- 0200754; PM 4900-1 for MO-2012
- 0200880; PM 4181-3, Megger 13 RHR Pump P-202C
- 0203942; Inspect/Repair/Adjust Actuator Clutch for MO-1989
- 0307244; 13 RHR Pump Will Not Start
- 0308338; MO-2030 Will Not Close Electrically From C03

1R13 Maintenance Risk Assessments and Emergent Work Control

Documents and Procedures:
- 0255-07-IA-1; Main Steam Valve Exercise Tests; Revision 20
- 0255-07-IA-2; Main Steam Valve Functional Test; Revision 14
- 4240-01-OCD; Main Steam Valves - Inboard; Revision 15
- 4514-01; Inboard MSIV Disassembly and Reassembly; Revision 6
- Memo to L. Raghaven (NRC) from David Wilson (NMC) dated June 12, 2003; Request for Authorization of Inservice Inspection program Fourth 10-Year Interval Relief Request # 8
- Memo to David Wilson (NMC) from L. Raghaven (NRC) dated June 13, 2003; One-Time Inservice Inspection Program Plan Relief Request # 8 for Leak testing the "B" and "G" Main Steam Safety Relief Valves
- SIL No. 169; Summary of Recommendations for Target Rock Main Steam Safety Valves; September 30, 1976
- C.4-B.03.03.B; Volume F to Operations Manual - Safety Relief Valves; Revision 7 OCRC
- 4280-PM; SRV Pilot Valve Assembly (Pilot & 2nd Stage)Change-out; Revision 24
- 3/4.6E; Technical Specification - Safety/Relief Valves

Condition Reports:
- 03003832; Entered Unplanned LCO for # 11 EDG
- 03003837; Entered Unplanned LCO for "A" CGCS due to 11 EDG Becoming Inoperable While "B" CGCS was Inoperable for PM

Work Orders:
- 0307870; Breaker B3105 Found Tripped
- 0307874; Drain/Refill Coolant & Replace Immersion Heater
- 0308499; AO-2-80A Failed LLRT
- 0308770; Replace RV-2-71G Safety Relief Valve
- 0308771; Replace RV-2-71B Safety Relief Valve

1R15 Operability Evaluations

Documents and Procedures:
- MWI-8-M-4.15; Conductor Splicing and Cable Jacket Repair; Revision 4
- 0151-01; Secondary Containment Capability Test; Revision 8
- 8281; Installation and Removal of SGTS-5, Primary Containment Exhaust to SBGT Blank; Revision 3
- M-145; Piping and Instrument Diagram - Standby Gas Treatment Flow Diagram; Revision T
- 0420-A; HPCI/RCIC Condensate Storage Tanks Level Instrumentation - Two Tank Operation; Revision 1

Condition Reports:
- 01007675; SBLC Explosive Valve Cable Jacket is Degraded
- 03005018; NDE Thickness Readings Low on Torus Cooling Line TW34-10"-HE Downstream from MO-2008
- 03005735; Prepare Continency Modification to Facilitate Change out of Piping Downstream of MO-2008 and MO-2009
- 03004350; Installing SGTS-5 Blank Prior to Performing Test 0151-01 is Not Conservative with Respect to Secondary Containment Capability Test
- 03004331; HPCI High Level Torus Transfer Switch is Not Tested as Tech Spec 4.5.A.4 Implies

Work Orders:
- 0110027; Repair Explosive Valve Jacket on XP-11-14A

1R16 Operator Workarounds

Procedures and Documents:
- B.03.04-01; Residual Heat Removal - Function and General Description; Revision 4
- B.03.04-05; Residual Heat Removal - System Operation; Revision 32
- 6.2.3.3.3; USAR - RHR Pump Runout; Revision 19
- Operator Challenges List; June 23, 2003

1R17 Permanent Plant Modifications

Procedures and Documents:
- 3278; NMC Standard 10 CFR 50.59 Screening Form for Modification 03Q035; Revision 3*
-03Q035; Modification Package - Diesel Exhaust Pipe Support Improvements; Revision 0
-3766; 10CFR50.59 Evaluation - Diesel Exhaust Missile Protection Design Consideration; Revision 0
- 3473; USAR Change Form and 10CFR50.59 Evaluation Submittal - Tornado Missile Risk Assessment; Revision 11
- 02Q295; Project Description - RHR Head Spray Removal; Revision 0
- 3069; Post-maintenance Testing Activities Control Cover Sheet for WO 0307565; 04/21/03

Work Orders:
- 0307471; Fabricate Supports for Emergency Diesel Exhaust
- 0307474; Install Supports on Diesel Gen. Exhaust G-3A
- 0307478; Install Supports on Diesel Gen. Exhaust G-3B
- 0307543; Repair Diesel Generator Building Roof
- 0307565; RHR Head Spray Removal
- 0307672; Disconnect Electrical Devices for RHR Head Spray

1R19 Post-Maintenance Testing

Procedures and Documents:
- Post Maintenance Testing Activities Control Cover Sheet for WO 0307874; Dated 4/10/03
- 3749; Monticello Impact Statement for WO 0307874; Revision 3
- 0187-02; 12 Emergency Diesel Generator / 12 Emergency Service Water Pump System Tests; Revision 45
- Post Maintenance Testing Activities Control Sheet for WO 0203751
- 0255-07-IA-1; Main Steam Valve Exercise Tests; Revision 20
- 0255-07-IA-2; Main Steam Valve Functional Test; Revision 14
- Post Maintenance Testing Activities Control Sheet for WO 0308499
- USAR, Section 4.4, Reactor Pressure Relief System; Revision 19
- 0255-07-1B-1; Main Steam Safety/Relief Valve Bench Checks and Inspections
- 0112; Safety Relief Valves Operability Check; Revision 22
- 3702; Certification of Personnel Qualification; Revision 1
- Memo to L. Raghaven (NRC) from David Wilson (NMC) dated June 12, 2003; Request for Authorization of Inservice Inspection Program Fourth 10-Year Interval Relief Request # 8
- Memo to David Wilson (NMC) from L. Raghaven (NRC) dated June 13, 2003; One-Time Inservice Inspection Program Plan Relief Request # 8 for Leak Testing the "B" and "G" Main Steam Safety Relief Valves
- 3/4.6E; Technical Specification - Safety/Relief Valves

Condition Reports:
- 03006383; Establish and Track Commitment Made to NRC in Relief Request No. 8; dated June 12, 2003

Work Orders:
- 0204336; Remove Tape From Exterior CRD Lines (CR 20028657)
- 0306138; Inspect SS Pipe with Tape Removed per WO 0204336
- 0307874; Drain/Refill Coolant & Replace Immersion Heater
- 0307472; Check Generator for Soft-Foot
- 0203751; Inspect Engine Bearings
- 0308499; AO-2-80A Failed LLRT
- 0308770; Replace RV-2-71G Safety Relief Valve
- 0308771; Replace RV-2-71B Safety Relief Valve
- 3063-05; ASME Section XI Repair/Replacement Plan; Revision 7
- 0309621; Perform Inspection of B and G SRVs at Next Inspection
- List of Active Work Orders (Ready Backlog) for Shutdown with Drywell Entry; dated June 18, 2003

1R20 Outage Activities

Procedures and Documents:
- C.3; Shutdown Procedure; Revision 33
- C.1; Startup Procedure; Revision 38
- 9238; LPRM Replacement Procedure; Revision 19
- 2003 Refueling Outage Daily Risk Data Sheets
- Shift Manager Turnover Reports
- 7207; LPRM Insulation Resistance and Voltage Breakdown Testing; Revision 0
- 3087; Document Change, Hold and Comment Form for Operations Manual C.3; Revision 32; Revision 30
- 02Q240; Project 02Q240 - CRD Stress Corrosion Cracking Contingency Plans; Revision 0
- 3722; Combustible Loading Change Request, No. 03-06; Revision 0
- Operation Manual Section C.1; Startup Procedure; Revision 38
- 2159; Predicted Critical for Plant Startup; Revision 6
- Startup Issues Report; 5/16/03
- TAC No. MB9538; Relief Request 8 - One Time Inservice Inspection Program Plan Relief Request No. 8 for Leak Testing the “B” and “G” Main Steam Safety Relief Valves

Condition Reports:
- 03004002; Reactor Building Floor and Equipment Drain Sump Access Hatches Are Loose. Potential Contamination Spread Threat
- 03005198; Thirty Foot Piece of Tygon Tubing Attached to Air Sampler on the Refuel Floor
- 03004768; Relief Valve on Sweeny Torque Wrench Lifted During Torquing of SRVs Resulted in Oil Dripping on #12 Recirc Pump Motor
- 03005287; OE16087 - Standing Water Found in the Torus Vent Header System

1R22 Surveillance Testing

Procedures and Documents:
- 0255-08-IA-1; RCIC System Pump and Valve Tests; RCIC System Pump and Valve Tests; Revision 53
- 3/4.5; Technical Specification - Core and Containment Spray Cooling Systems
- 3/4.7; Technical Specification - Containment Systems
- 0255-04-ID-2; LPCI Loop “B” Valves MO-2015 and AO-10-46B Leak Test; Revision 8
- 0086; SBLC Refueling Tests; Revision 24
- 0255-02-IIB-1; SBLC Functional and Hydrostatic Pressure Test; Revision 2*
- IN 2001-13; NRC Information Notice - Inadequate Standby Liquid Control System Relief Valve Margin
- IN 2002-05; NRC Information Notice - Foreign Material in Standby Liquid Control Storage Tanks
- 1050; Safety Relief Valve Functional Tests; Revision 18
- 0255-20-IIC-1; Reactor Coolant Pressure Boundary Leakage Test; Revision 18
- RFO21 Appendix J Test Results
- LLRT Failure Status Report
- LLRT 2003 Summary
- 0081; Control Rod Drive Scram Insertion Time Test; Revision 39

- DRF 0000-0014-5979; Letter to Mr. Thomas M. Parker from GE Nuclear Energy, Subject CRD System HCU 114 Scram Discharge Check Valve, Monticello Nuclear Generating Plant; Dated May 21, 2003
- 0137-07A; Reactor Steam Supply Valves Leak Rate Testing; Revision 17
- CA-03-107; Calculation - Determination of Maximum Steam Line Pressure Resulting from Vessel Floodup During Reactor Disassembly
- 14.7; USAR - Plant Safety Analysis Accident Evaluation Methodology LOCA; Revision 19

Condition Reports:
- 03004865; Isolation Prevented Successful Completion of Test 1050
- 03004343; NRC Resident Question Regarding Preconditioning of Valve Testing for LPCI Injection Valve and Testable Check Valve
- 02000436; External Operating Experience - Foreign Material in Standby Liquid Control Storage Tanks
- 03004789; SBLC Test Tank T-201 Overflowed with Rx Water, Probably From Leakage past XP-6 and XP-7
- 03004562; Combined MSIV LLRT

Work Orders:
- 0107290; Replace PI-13-59 RCIC Pump Discharge Pressure Indicator

1EP6 Drill Evaluation

Procedures and Documents:
- Monticello Nuclear Generating Plant HP Airborne Release Drill; April 8, 2003
- Monticello Nuclear Generating Plant Emergency Plan Drill; June 18, 2003
- A.2-406; Off-Site Dose Projection; Revision 18
- A.2-807; Off-Site Dose Assessment and PARs; Revision 9
- 3695; EP Performance Record - Event Date 6/18/03; Revision 3
- 5790-102-02; Monticello Emergency Notification Report Form (multiple); Revision 25
- 5790-204-01; Monticello Off-Site Protective Action Recommendation Checklist (multiple); Revision 11

Condition Reports:
- 03003842; Critique Report for the April 8, 2003 Emergency Plan Health Physics Mini-Drill
- 03004076; E-Plan HP Mini-drill Conducted 4/8/03 Noted Equipment Discrepancies. This Is a Recurring Adverse Trend
- 03006609; Accountability Not Completed in 30 Minutes for 6/18/03 EP Drill. Conduct of Drill Issues Major Contributor to Delay
- 03006613; Site Area Emergency Notification Completed for 6/18/03 EP Drill Not Accurate. Missed NRC PI Opportunity

2OS1 Access Control to Radiologically Significant Areas

Procedures and Documents:
- RWP (Radiation Work Permit) Number 1; General Entry for Passive Tasks; Revision 28

- 2002-002-5-020; Nuclear Oversight Observation Report - Radiation Protection; May 20, 2002
- 2002-004-5-009; Nuclear Oversight Observation Report - Radiation Protection; November 8, 2002

Condition Reports:
- 03002337; Focused Self-Assessment of Exposure Monitoring; March 3, 2003
- 03002785; Recent Trend of Electronic Dosimeter Dose Alarms; March 14, 2003
- 03002894; Individual Received ED (Electronic Dosimeter) Dose Alarm Building Scaffolding; March 18, 2003
- 03003287; Exposure Control-Two Individual Enter Off-Gas Storage Building Without TLD; March 26, 2003
- 03003539; Individual Logged on an ED Using Another Individual's TLD (Thermo-luminescent Dosimeter) Number; April 3, 2003
- 03004469; Individual Entered Posted High Radiation Area Without Reviewing Expected Conditions with Radiation Protection; April 29, 2003
- 03004518; Swing-Gate to Posted High Radiation Area Left in the Open Position; April 30, 2003

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

Procedures and Documents:
- RWP 30117; Reactor Water Clean-up Valve Work; Revision 0
- RWP 30132; Torus Diving; Revision 0
- RWP 30161; Rebuild "C" Outboard MSIV (Main Steam Isolation Valve); Revision 0
- RWP 30500; Perform Radiation Protection Surveys; Revision 0
- RWP 30507; ALARA Efforts in Drywell; Revision 0
- RWP 30523; Install and Remove Scaffolding; Revision 0
- RWP 30529; Remove and Replace Insulation in Drywell; Revision 2
- RWP 30701; Reactor Disassembly and Reassembly; Revision 0
- 3560; Infrequent Test or Evolution Briefing Guide; Revision 5
- 5621; ALARA Planning Record; Revision 7
- 5646; Service Air Composition Test; Revision 3
- R.01.01; RWP Preparation and Issuance; Revision 37
- R.01.04; Control of Personnel in High Radiation and Airborne Areas; Revision 11
- R.01.06; RWP ALARA Reviews; Revision 5
- R.13.05; Pre-job Briefings; Revision 9
- R.13.08; Radiological Work Plan for Underwater Diving; Revision 3

4OA1 Performance Indicator Verification

Procedures and Documents:
- Monticello Performance Indicator Data Summary Reports; 1st Quarter 2002 through 1st Quarter 2003
- NEI 99-02; Regulatory Assessment Performance Indicator Guideline; Revision 2
- 3530-11; NRC Performance Indicator Initiating Events Worksheet (1st Quarter 2002 through 1st Quarter 2003); Revisions 1 and 2
- 3530-04; Performance Indicator Unplanned Power Change Worksheet (1st Quarter 2002 through 1st Quarter 2003); Revision 0

- 3530-13; NRC Performance Indicator Unplanned Power Changes per 7,000 Critical Hours Worksheet (1st Quarter 2002 through 1st Quarter 2003); Revisions 0 and 1
- Monticello Monthly Operating Reports for January 2002 through March 2003
- Monticello Thermal Power History Graphs for January 2002 through March 2003
- 0255-07IA-1; Main Steam Valve Exercise Tests; Revision 21
- 1186; Maximum Core Flow/Prompt Flow Control Line Determination; Revision 12
- Various "Reactor and Control Room Logs" from January 2002 through March 2003
- LERS submitted for the time period of January 2002 through March 2003 (LERs 2002-01 through 2002-07)

Condition Reports:
- 03006567; NRC Inspector Identified that the Monthly Operating Report for June 2002 Did Not Include a Power Reduction

4OA2 Identification and Resolution of Problems

Procedures and Documents:
- EWI-08.15.01; Motor-operated Valve Program; Revision 3
- EWI-08.15.02; Motor-operated Valve Program, Engineering Standards; Revision 3
- EWI-08.15.03; MOV Tracking and Trending Instruction; Revision 0
- R.06.01; Radioactive Source Control; Revision 12
- R.06.01; Radioactive Source Control; Revision 13
- R.06.02; Unconditional Release of Equipment or Material; Revision 11
- 0226; Semiannual Source Inventory and Smear Test; Revision 12
- 0226; Semiannual Source Inventory and Smear Test; Revision 13

Condition Reports:
- 02007874; MOV ADCOF Not Upgraded to Enhanced MOV Performance as Recommended by Calculation CA-95-049
- 02011762; Crane-Nuclear Has Issued Revised Test Equipment Uncertainty Values for VOTES
- 03002426; MO-2068, MO-2071, MO-2106 Exceeded Max Allowable Thrust Limit with Implementation of Revised Uncertainty Methodology
- 03004757; MO-2021 As-Found VOTES Test Measured Stem Thrust Exceeded the Max Available Thrust and Max Allowable Thrust Criteria
- 03004763; MO-2011 As-Found VOTES Test Measured Stem Thrust Exceeded the Max Allowable Thrust Criteria
- 03004839; MO-2003 As-Found VOTES Test Measured Stem Thrust Exceeded the Max Available and Max Allowable
- 03004884; MO-2003 Exhibits Thrust Anomaly After Initial Wedging
- 03005229; During VOTES Test of MO-2029 Valve Exhibited an Overthrust Condition in the Close Direction
- 00004616; RAM Control: Source Mission From ARM A-21; November 27, 2000
- 00005132; RAM Control: NRC Inspector Questioned Source Placed on ARM A-21 in Control Room; December 26, 2000
- 02004433; RAM Control: Survey Meter with Radioactive Check Source Transferred and Stored MTC (Monticello Training Center) in Violation; May 9, 2002
- 02004668; RAM Control; Location or Radioactive Sources Changed Not in Accordance with R.06.01; May 16, 2002

- 02010492; RAM Control: Source Transferred without Proper Documentation; November 8, 2002
- 02010494; RAM Control; Sources Disposed of Without Proper Documentation; November 8, 2002
- 02010608; Procedure 0226 (Semi-Annual Source Inventory and Smear) Should Be Removed from Plant Surveillance List and Renumbered; November 12, 2002
- 03000448; RAM Control: ARM Detector Sent Off-site with Radioactive Check Source Installed; January 14, 2003
- 03002154; Surveys: Sources 695, 696 and 697 Not Leak Checked Within the Required Frequency; February 26, 2003

4OA3 Event Follow-up

Procedures and Documents:
- 50-263/2002-007-00; Licensee Event Report, Application of Instrumentation Deviation Acceptance Criteria Allowed As-found Settings for High Drywell Pressure to be Outside Technical Specification Value; Revision 0
- 0030; ECCS High Drywell Pressure Sensor; Revision 11

Condition Reports:
- 02009786; Surveillance 0003 DW Hi Press Scram and GR 2, 3, & SCMT T&C PS-5-12B and PS-5-12C Exceeded TS >55.4 Due to Basis Disallow
- 02009898; Submit and LER or Amend LER Submitted 4/15/02 (ACC 02002906) in Reference to Reportability Determination in CR 02001013
- 020010460; Determine and Revise Additional TS Surveillances Requiring “Desired Range” Specification to Avoid Future LER’s

LIST OF ACRONYMS USED

ALARA	As-Low-As-Is-Reasonably-Achievable
ARM	Area Radiation Monitor
ASDA	Alternate Shutdown “A”
ASME	American Society of Mechanical Engineers
ATWS	Anticipated Transient Without Scram
AWI	Administrative Work Instruction
CFR	Code of Federal Regulations
CGCS	Combustible Gas Control System
CR	Condition Report
CRD	Control Rod Drive
CY	Calendar Year
DBD	Design Basis Document
DRP	Division of Reactor Projects
DW	Drywell
ECCS	Emergency Core Cooling System
EDG	Emergency Diesel Generator
EP	Emergency Preparedness
EWI	Engineering Work Instruction
GE	General Electric
GR	Group
HCU	Hydraulic Control Unit
HDR	High Dose Rate
HP	Health Physics
HPCI	High Pressure Core Injection
HRA	High Radiation Area
ICM	Interim Compensatory Measures
IMC	Inspection Manual Chapter
IP	Inspection Procedure
IR	Inspection Report
LCO	Limiting Condition for Operation
LER	Licensee Event Report
LLRT	Local Leak Rate Testing
LOCA	Loss of Coolant Accident
LPCI	Low Pressure Coolant Injection
LPRM	Local Power Range Monitor
MOV	Motor-Operated Valve
MSIV	Main Steam Isolation Valve
MWI	Maintenance Work Instruction
NDE	Non-Destructive Examination
NEI	Nuclear Energy Institute
OCRC	Operations Committee Review Change
OWA	Operator Workaround
PAR	Protective Action Recommendation
PARS	Publicly Available Records
PI	Performance Indicator
PM	Planned or Preventative Maintenance

LIST OF ACRONYMS USED

PMF	Probable Maximum Flood
PMT	Post-Maintenance Testing
RA	Risk Assessment
RAM	Radioactive Material
RCA	Radiologically Controlled Area
RCIC	Reactor Core Isolation Cooling
RHR	Residual Heat Removal
RHRSW	Residual Heat Removal Service Water
RP	Radiation Protection
RWP	Radiation Work Permit
Rx	Reactor
SBGT	Standby Gas Treatment
SBLC	Standby Liquid Control
SCMT	Secondary Containment
SDP	Significance Determination Process
SGTS	Standby Gas Treatment
SIL	Service Information Letter
SRV	Safety Relief Valve
SS	Stainless Steel
T&C	Test & Calibration
TLD	Thermoluminescent Dosimeters
TS	Technical Specification
USAR	Updated Safety Analysis Report
Vac	Volts Alternating Current
VOTES	Valve Operational Testing & Evaluation System
WO	Work Order