

October 17, 2005

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 05000263/2005004

Dear Mr. Conway:

On September 30, 2005, 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 September 27, 2005, with you and other members of your staff.

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

Based on the results of this inspection, there was one NRC-identified finding of very low safety significance, which also involved a violation of NRC requirements. However, because this violation was of very low safety significance and because the issue was entered into the licensee's corrective action program, the NRC is treating this finding as a Non-Cited Violation in accordance with Section VI.A.1 of the NRC's Enforcement Policy.

If you contest the subject or severity of a Non-Cited Violation, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with a copy to the Regional Administrator, U.S. Nuclear Regulatory Commission - Region III, 2443 Warrenville Road, Suite 210, Lisle, IL 60532-4352; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and the Resident Inspector Office at the Monticello Nuclear Generating Station.

J. Conway

-2-

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Sincerely,

/RA/

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

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

Enclosure: Inspection Report 05000263/2005004
w/Attachment: Supplemental Information

cc w/encl: J. Cowan, Executive Vice President
and Chief Nuclear Officer
Manager, Regulatory Affairs
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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No: 50-263

License No: DPR-22

Report No: 05000263/2005004

Licensee: Nuclear Management Company, LLC

Facility: Monticello Nuclear Generating Plant

Location: 2807 West Highway 75
Monticello, MN 55362

Dates: July 1 through September 30, 2005

Inspectors: S. Ray, Senior Resident Inspector
R. Orlikowski, Resident Inspector
C. Acosta, Reactor Engineer
J. Adams, Senior Resident Inspector, Prairie Island
G. Gibbs, Reactor Engineer
M. Jordan, Reactor Engineer
R. Winter, Reactor Engineer

Observers: None

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

Enclosure

SUMMARY OF FINDINGS

IR 05000263/2005004; 07/01/2005 - 09/30/2005; Monticello Nuclear Generating Plant; Problem Identification and Resolution.

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

A. Inspector-Identified and Self-Revealed Findings

Cornerstone: Barrier Integrity

- Green. A finding of very low safety significance was identified by the inspectors for a violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action" requirements. The inspectors identified that the engineering department failed to promptly correct a calibration setpoint drift problem with the "A" Control Room Ventilation (CRV) system cooling water flow differential pressure (DP) switch. This failure involved the inability to correct the repeated setpoint drift of the "A" CRV cooling water flow DP switch and also to adequately address the potential for a common mode failure in the "B" CRV train. The primary cause of this finding was related to the cross-cutting area of problem identification and resolution. A subsequent modification has removed the trip function of the CRV cooling water flow DP switches from the "A" and "B" trains of CRV.

This issue was more than minor because the finding is associated with the design control attribute of operational capability for the Barrier Integrity Cornerstone objective of maintaining functionality of containment. This finding was determined to be of very low safety significance because no barrier functions were ever lost. A Non-Cited Violation (NCV) of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action" was issued for failure of the licensee to promptly correct a problem with the cooling water flow DP switch setpoint drift on the "A" CRV system. (Section 4OA2.3)

B. Licensee-Identified Violations

None.

REPORT DETAILS

Summary of Plant Status

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

1. REACTOR SAFETY

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

1R01 Adverse Weather (71111.01)

a. Inspection Scope

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

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

- overall preparation/protection prior to forecasted high temperature conditions and thunderstorms.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment (71111.04)

.1 Partial Walkdown

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

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

- diesel fire pump system following maintenance and testing;
- high pressure core injection (HPCI) with reactor core isolation cooling (RCIC) out-of-service for maintenance; and
- Division I residual heat removal (RHR) system with Division II RHR out-of-service for maintenance.

b. Findings

No findings of significance were identified.

.2 Complete System Walkdown

a. Inspection Scope

The inspectors performed a complete walkdown of equipment for two risk significant mitigating systems. The inspectors walked down each system to review mechanical and electrical equipment line-ups, component labeling, component lubrication, component and equipment cooling, hangers and supports, operability of support systems, and to ensure that ancillary equipment or debris did not interfere with equipment operation. A review of past and outstanding work orders (WOs) was performed to determine whether any deficiencies significantly affected the system function. In addition, the inspectors reviewed the corrective action program (CAP) database to ensure that any system equipment alignment problems were being identified and appropriately resolved. As part of this inspection, the documents in the attachment were utilized to evaluate the potential for an inspection finding.

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

- HPCI; and
- fuel pool cooling and cleanup system.

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 (IPEEE), or the potential to impact equipment which could initiate or mitigate a plant transient. The inspection activities included, but were not limited to, the control of transient combustibles and ignition sources, fire detection equipment, manual suppression capabilities, passive suppression capabilities, automatic suppression capabilities, compensatory measures, and barriers to fire propagation. As part of this inspection, the documents in the attachment were utilized to evaluate the potential for an inspection finding.

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

- Fire Zone 1-A, 12 RHR & core spray (CS) pump room;
- Fire Zone 1-B, 11 RHR & CS pump room;
- Fire Zone 1-E, HPCI room - reactor building elevation 896';
- Fire Zone 1-G, control rod drive (CRD) room;
- Fire Zone 2-A, traversing in-core probe (TIP) drive room;
- Fire Zone 4B, reactor building closed loop cooling water (RBCCW) heat exchanger (HX) area;
- Fire Zone 37, transformers;
- Fire Zone 7-A, 125 Division I battery room;
- Fire Zone 15-A, 12 diesel generator (DG) room; and
- Fire Zone 15-B, 11 DG room and day tank rooms.

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures (71111.06)

a. Inspection Scope

The inspectors performed an annual review of flood protection barriers and procedures for coping with internal flooding. The inspection focused on determining whether flood mitigation plans and equipment were consistent with design requirements and risk analysis assumptions. The inspection activities included, but were not limited to, a review and/or walkdown to assess design measures, seals, drain systems, contingency

equipment condition and availability of temporary equipment and barriers, performance and surveillance tests, procedural adequacy, and compensatory measures. The inspectors utilized the documents listed in the attachment to accomplish the objectives of the inspection procedure.

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

- Division I and II 4160 volt rooms.

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 (HXs). 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. As part of this inspection, the documents in the attachment were utilized to evaluate the potential for an inspection finding.

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

- 11 emergency diesel generator (EDG) emergency service water (ESW) HX.

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 (TS), simulator fidelity, and licensee critique of performance. As part of this inspection, the documents in the attachment were utilized to evaluate the potential for an inspection finding.

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

- a training crew during an evaluated simulator scenario that included a loss of power supply Y-80 followed by an anticipated transient without scram (ATWS) and a failure of the CRD flow control valve, which resulted in entry into the emergency operating procedures and reflooding of the reactor vessel due to a loss of level indication.

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness (71111.12)

.1 Maintenance Effectiveness Periodic Evaluation

a. Inspection Scope

The inspectors examined the periodic evaluation report completed for the period of June 2003 through May 2004. To evaluate the effectiveness of (a)(1) and (a)(2) activities, the inspectors examined a sample of (a)(1) action plans, performance criteria, functional failures, and CAP documents. These same documents were reviewed to verify that the threshold for identification of problems was at an appropriate level and the associated corrective actions were appropriate. Also, the inspectors reviewed the maintenance rule procedures and processes. The inspectors focused the inspection on the following four systems (samples):

- reactor manual control system;
- primary containment (PCT) system;
- plant service water system; and
- EDG system.

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

The inspectors verified that:

- the licensee balanced reliability and unavailability during the previous refueling cycle, including a review of high safety significant SSCs;

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

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

b. Findings

No findings of significance were identified.

.2 Maintenance Effectiveness Routine Inspection

a. Inspection Scope

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

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

- C an issue/problem-oriented review of the HPCI system because it was designated as risk significant under the Maintenance Rule and the system experienced a problem with the turbine exhaust hi drain pot level switch; and
- an issue/problem-oriented review of the reactor pressure relief system because it was designated as risk significant under the Maintenance Rule and the system experienced performance problems with two safety relief valves (SRVs) in 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 maintenance activities to review risk assessments (RAs) and emergent work control. The inspectors verified the performance and adequacy of RAs, management of resultant risk, entry into the appropriate licensee-established risk bands, and the effective planning and control of emergent work activities. The inspection activities included, but were not limited to, a verification that licensee RA procedures were followed and performed appropriately for routine and emergent maintenance, that RAs for the scope of work performed were accurate and complete, that necessary actions were taken to minimize the probability of initiating events, and that activities to ensure that the functionality of mitigating systems and barriers were performed. Reviews also assessed the licensee's evaluation of plant risk, risk management, scheduling, configuration control, and coordination with other scheduled risk significant work for these activities. Additionally, the assessment included an evaluation of external factors, the licensee's control of work activities, and appropriate consideration of baseline and cumulative risk. As part of this inspection, the documents in the attachment were utilized to evaluate the potential for an inspection finding.

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

- routine scheduled maintenance and risk management during planned maintenance on the Division II RHR system;
- routine scheduled maintenance and risk management during the unavailability of the RCIC system, security DG, and the existence of adverse weather in the vicinity of the plant on August 8 and 9, 2005;
- routine scheduled maintenance and risk management during planned maintenance activities on secondary containment (SCT) dampers, condenser low vacuum scram testing, and the "A" and "B" reactor protection system motor generator (RPS MG) sets; and
- routine scheduled maintenance and risk management during the unavailability of the 13 DG and 11 CS systems.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations (71111.15)

a. Inspection Scope

The inspectors reviewed operability evaluations which affected mitigating systems or barrier integrity to ensure that operability was properly justified and that the component or system remained available. The inspection activities included, but were not limited to, a review of the technical adequacy of the operability evaluations to determine the impact on TS, the significance of the evaluations to ensure that adequate justifications were

documented, and that risk was appropriately assessed. As part of this inspection, the documents in the attachment were utilized to evaluate the potential for an inspection finding.

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

- RCIC operability during a station blackout (SBO);
- small crack found in concrete blocks in standby gas treatment (SBGT) system airlock;
- RCIC low pump suction turbine trip pressure switch, PS-13-67A, found outside of required band;
- “A” control room ventilation (CRV) cooling water flow differential pressure (DP) switch; and
- evidence of piston seal leakage from 12 standby liquid control (SBLC) pump.

b. Findings

No findings of significance were identified.

1R16 Operator Workarounds (71111.16)

a. Inspection Scope

The inspectors evaluated an existing plant condition associated with the CRV and emergency filtration train (EFT) subsystems. The inspectors identified the concern during a routine plant status review and was related to manual operator actions to restore the operation of the CRV-EFT following the loss of offsite power. The inspection activities included, but were not limited to, a review of the selected workaround to determine if the functional capability of the system or human reliability in responding to an initiating event was affected, including a review of the impact of the workaround on the operator’s ability to execute emergency operating procedures. As part of this inspection, the documents in the attachment were utilized to evaluate the potential for an inspection finding. This review represented one sample.

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 SSC’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. As part of this inspection, the documents in the attachment were utilized to evaluate the potential for an inspection finding.

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

- 11 EDG following work on the remote speed adjustment motor;
- flush service water line to “B” residual heat removal service water (RHRSW) motor coolers;
- weld repair for plug on RCIC system trip valve MO-2080;
- 12 RHR pump relay maintenance;
- preventive maintenance (PM) and leak repair on the diesel-driven fire pump; and
- 12 RHRSW pump replacement.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors reviewed surveillance testing activities to assess operational readiness and to ensure that risk-significant SSCs were capable of performing their intended safety function. Activities were selected based upon risk significance and the potential risk impact from an unidentified deficiency or performance degradation that a SSC could impose on the unit if the condition was left unresolved. The inspection activities included, 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. As part of this inspection, the documents in the attachment were utilized to evaluate the potential for an inspection finding.

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

- reactor low-low-water level functional check;
- reactor building to torus vacuum breaker operability test;
- reactor water cleanup (RWCU) high flow and high room temperature trip unit instrument test and calibration;
- RCIC quarterly pump and valve tests;
- low pressure coolant injection (LPCI) swing bus relay test and calibration; and
- Division II RHRSW quarterly pump and valve test.

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications (71111.23)

a. Inspection Scope

The inspectors reviewed a temporary modification to assess the impact of the modification on the safety function of the associated system. The inspection activities included, but were not limited to, a review of design documents, safety screening documents, USAR, and applicable TS to determine that the temporary modification was consistent with modification documents, drawings and procedures. The inspectors also reviewed the post-installation test results to confirm that tests were satisfactory and the actual impact of the temporary modification on the permanent system and interfacing systems were adequately verified. As part of this inspection, the documents in the attachment were utilized to evaluate the potential for an inspection finding.

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

- temporary anchor for RHRSW pump removal.

A second sample was completed by the inspectors walking down risk significant portions of the plant looking for potential unauthorized/undocumented temporary modifications.

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 CAP. Additionally, the inspectors verified that the licensee was identifying issues at an appropriate threshold and entering them in the CAP, and verified that problems included in the licensee's CAP were properly addressed for resolution. Attributes reviewed included: complete and accurate identification of the problem; that timeliness was commensurate with the safety significance; that evaluation and disposition of

performance issues, generic implications, common causes, contributing factors, root causes, extent of condition reviews, and previous occurrence reviews were proper and adequate; and that the classification, prioritization and focus were commensurate with safety and sufficient to prevent recurrence of the issue.

b. Findings

No findings of significance were identified.

.2 Daily Corrective Action Program Reviews

a. Inspection Scope

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

b. Findings

No findings of significance were identified.

.3 Selected Issue Follow up (Annual Sample): "A" Control Room Ventilation (CRV) Tripped Due to Cooling Water Flow DP Switch Setpoint Drift.

a. Inspection Scope

On August 5, 2005, while performing surveillance testing of the "B" CRV train, the "A" CRV train unexpectedly tripped on low cooling water flow. The licensee entered an unplanned limiting condition for operations (LCO) action requirement for both the "A" and "B" CRV trains being inoperable. The inspectors chose to perform a more in-depth review of the licensee's corrective actions for this issue. Previous CAPs and WOs pertaining to the "A" and "B" CRV trains were reviewed to ensure that the licensee's corrective actions were commensurate with the significance of identified issues. The inspectors reviewed CAPs and WOs looking for any previous history of equipment issues related to the "A" and "B" CRV systems.

b. Findings

Introduction: The inspectors identified a finding of very low safety significance involving a Non-Cited Violation (NCV) of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action." The inspectors identified that the engineering department failed to promptly correct a calibration setpoint drift problem with the "A" CRV system cooling water flow DP switch. This failure involved the inability to correct the repeated setpoint drift of the "A" CRV cooling water flow DP switch and also to adequately address the potential for a common mode failure in the "B" CRV train.

Description: The inspectors reviewed previous CAPs and WOs related to the “A” and “B” CRV trains and found a history of the “A” CRV cooling water flow DP switch, DPS-4029A, drifting high outside of its calibration band. On June 6, 2001, DPS-4029A was found at 16.31 pounds per square inch differential (PSID), which is outside of its as-found tolerance band of 12.00 to 14.00 PSID. This was documented in CAP003263. The cause for the drift was documented as loose microswitch terminal screws. The screws were tightened and the switch was recalibrated to within the required band.

On July 22, 2002, with the “B” CRV train out-of-service for testing, the “A” CRV train tripped on a low cooling water flow condition. Both trains of CRV were declared inoperable and the appropriate LCO was entered. The condition was documented in CAP009837. During calibration of the switch, the setpoint was again found outside of its required band when it was measured at 24.20 PSID. Corrective actions for this occurrence included an increase in the periodicity of switch calibration from 2 years to 6 months and initiation of a WO to replace the switch within 1 year.

On January 9, 2003, while performing a calibration of DPS-4029A, the as-found setpoint was found outside of the required band when it was measured at 29.68 PSID. This issue was documented in CAP012930. After the switch was returned to within the as-left acceptance criteria, the “A” CRV remained inoperable due to concerns with the reliability of the switch. A temporary jumper was installed on January 16, 2003, to bypass DPS-4029A until the switch could be replaced. On April 4, 2003, WO0305941 was performed to replace switch DPS-4029A. After the switch was replaced, the temporary jumper was removed and “A” CRV was declared operable. As part of the corrective action for CAP012930, a modification request was made to the Plant Health Committee to remove the cooling water flow DP switch from both the “A” and “B” CRV trains under Corrective Action (CA) 017069.

Under CA016765, a cause analysis was performed on the failed “A” CRV DP switch to determine if a common mode failure existed for similar switches. Upon disassembling the DP switch, silt was found inside of the expansion bellows. As a preventive measure, WO0308721 was initiated to replace the cooling water flow DP switch, DPS-4029B, on the “B” CRV train. However, no other actions were taken to determine the source of the silt found in the expansion bellows or to prevent future silting in the expansion bellows of the newly installed DP switches. The switch removed during replacement of DPS-4029B was never analyzed to determine if silting had occurred in the switch or if a common mode failure mechanism could exist.

On August 5, 2005, while performing planned surveillance testing of the “B” CRV train, the “A” CRV train tripped on a sensed low cooling water flow condition. Operations personnel declared the “A” CRV train inoperable and entered an unplanned LCO action requirement for both the “A” and “B” CRV trains being inoperable. Subsequent troubleshooting determined that the “A” CRV cooling water flow DP switch had drifted outside of the 12.00 to 14.00 PSID required setpoint band and was found at 25.4 PSID. Because the DP switch had drifted high, the “A” CRV train tripped prematurely and a low flow condition did not actually exist.

The operations group initiated CAP040232 to document the unplanned LCO entry. As a part of the corrective action process, the engineering group performed an Apparent Cause Evaluation (ACE) 004371 for this issue. The ACE determined that an organizational failure was the cause of this event in that the corrective actions taken for CAP009837 and CAP012930 were ineffective and led to this instance of setpoint drift for DP switch DPS-4029A. This ACE only evaluated the organizational cause related to this issue and did not evaluate the mechanism that actually caused the DP switch setpoint to drift high out of the required band.

Analysis: The inspectors determined that the engineering department's failure to promptly correct a calibration setpoint drift problem with the "A" CRV system cooling water flow DP switch was a performance deficiency warranting further evaluation. This failure involved the inability to correct the repeated setpoint drift of the "A" CRV cooling water flow DP switch and did not adequately address the potential for a common mode failure in the "B" CRV train. The inspectors reviewed this finding using the guidance contained in Appendix B, "Issue Disposition Screening," of IMC 0612, "Power Reactor Inspection Reports." Since the setpoint drift and potential silting of the DP switch could directly impact the operability of the "A" and "B" CRV trains by causing a trip when a low flow condition did not exist, the issue was determined to be more than minor because the finding is associated with the design control attribute of operational capability for the Barrier Integrity Cornerstone objective of maintaining functionality of containment.

The inspectors reviewed this finding in accordance with IMC 0609, Appendix A, "Significance Determination of Reactor Inspection Findings for At-Power Situations." Using the Phase 1 SDP worksheet for the Barrier Integrity Cornerstone, the inspectors determined that the finding did not represent a degradation of the radiological barrier function provided for the control room; the finding did not represent a degradation of the barrier function of the control room against smoke or a toxic environment; and the finding did not represent an actual open pathway in the physical integrity of reactor containment or involve an actual reduction in the defense-in-depth for the atmospheric pressure control or hydrogen control functions of the reactor containment. Therefore, the finding was considered to be of very low safety significance (Green). This finding was assigned to the Barrier Integrity Cornerstone and also involved the cross-cutting area of problem identification and resolution with a cause attributable to ineffective corrective action.

Enforcement: The licensee Operational Quality Assurance Plan denotes the CRV system as subject to 10 CFR 50, Appendix B, requirements for quality assurance criteria for nuclear power plants. Criterion XVI, "Corrective Action," of Appendix B requires that measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective materials and equipment, and nonconformances are promptly identified and corrected. Contrary to the above, the licensee failed to promptly correct a calibration setpoint drift problem with the "A" CRV system cooling water flow DP switch. Because this violation was of very low safety significance and it was entered into the licensee's CAP, this violation is being treated as an NCV, consistent with Section VI.A of the NRC Enforcement Policy (NCV 05000263/2005004-01). The licensee has entered this into their corrective action program as CAP040232 and has performed a modification to remove the trip function of the CRV cooling water flow DP switches from the "A" and "B" trains of CRV.

4OA3 Event Follow-up (71153)

- .1 On August 5, 2005, the licensee had an unexpected trip of the "A" CRV train while the "B" CRV train was out-of-service for planned maintenance testing. The licensee issued Event Notification 41897 due to both trains of CRV being inoperable. Upon further investigation by the licensee, the event notification was retracted after it was determined that the "B" CRV train was still capable of performing its required safety function. The inspectors evaluated this issue using the guidance in Inspection Procedure (IP) 71153 and no findings of significance related to the licensee's event response were identified.

4OA4 Cross-Cutting Aspects of Findings

- .1 A finding described in Section 4OA2.3 of this report had, as its primary cause, a problem identification and resolution deficiency, in that, the engineering group failed to take adequate corrective action to prevent recurrence of the "A" CRV train from inadvertently tripping due to setpoint drift of the cooling water flow DP switch.

4OA6 Meetings

.1 Exit Meeting

The inspectors presented the inspection results to Mr. Conway and other members of licensee management on September 27, 2005. 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:

- Maintenance Effectiveness Periodic Evaluation with Mr. R. Jacobs, Plant Manager, on July 15, 2005.

4OA7 Licensee-Identified Violations

None.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

J. Conway, Site Vice President
R. Jacobs, Site Director for Operations
B. Sawatzke, Plant Manager
R. Baumer, Licensing
K. Jepsen, Radiation Protection Manager
J. Fields, Regulatory Affairs Manager (Acting)
D. Nordell, Site Maintenance Rule Coordinator

Nuclear Regulatory Commission

B. Burgess, Chief, Reactor Projects Branch 2

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

05000263/2005004-01 NCV "A" Control Room Ventilation (CRV) Tripped Due to
Differential Pressure Switch Setpoint Drift (Section 4OA2.3)

Closed

05000263/2005004-01 NCV "A" Control Room Ventilation (CRV) Tripped Due to
Differential Pressure Switch Setpoint Drift (Section 4OA2.3)

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:

1444; Post Severe Weather Checklist; Revision 4

Corrective Action Program Documents:

CAP039948; Received Unexpected Alarm 4-B-22, Drywell CAM [Containment Atmospheric Monitoring] Trouble, Coincident with Lightning

CAP040296; NRC Question Regarding Severe Weather Impact on On-Line Risk Assessment

1R04 Equipment Alignment

Documents and Procedures:

0261; Fire Pump Exercise and Fuel Quantity Check; Revision 39

0270; Fire Protection System Valve Position Verification; Revision 21

0269; Fire Protection Valve Check; Revision 22

2118; Plant Prestart Checklist HPCI System; Revision 13

2154-10; HPCI Prestart Valve Checklist; Revision 27

B.03.02-01; HPCI; Revision 5

C.6-003-A-39; HPCI Turbine Tripped; Revision 3

M112; RHRSW and ESW Systems; Revision BR

M123; HPCI System Piping & Instrument Diagram (P&ID) (Steam Side); Revision AR

M124; HPCI System P&ID (Water Side); Revision AF

2154-12; RHRSW Prestart Valve Checklist; Revision 41

8147; Alternate Fuel Pool Cooling While RBCCW is Unavailable; Revision 1

2154-20; Fuel Pool Cooling and Cleanup System Prestart Valve Checklist; Revision 11

Corrective Action Program Documents:

CAP039652; Diesel Fire Pump Failed to Start in Manual During Procedure 1158 (Weekly Check)

CAP039657; Degraded Wiring of Emergency Diesel Fire Pump System

CAP023997; HPCI Status Following High Reactor Water Level Trip

CAP039479; HPCI Aux Oil Pump Alignment Criteria Specified by PM Could Not Be Obtained

CAP040282; HPCI Steam Trap Downstream Piping Temperature High Out of the Expected Range

CAP026496; License Renewal Aging Inspections Noted a Small Leak on the Reactor Building 985 West Wall

CAP010586; Pump P-7B Exhibits Large Increase in Pump Vibrations

Work Orders:

WO0402926; Repair Leaky Steam Trap ST-2045

WO0404203; Replace ST-2045

WO0506184; HPCI Supply Steam Trap

WO057134; Diesel Fire Pump System Air Valve AV-1937 Leaks by Excessively
(Greater than 1 Gallon per Minute)

WO0507199; Diesel Fire Pump Failed to Start

WO0506333; Re-Adjust HPCI EG-R Setting

1R05 Fire Protection

Pre-Fire Fighting Procedures and Strategies:

Strategy A.3-01-A; 12 RHR & CS Pump Room; Revision 3

Strategy A.3-01-B; 11 RHR & CS Pump Room; Revision 3

Strategy A.3-01-E; HPCI Room - Reactor Building Elevation 896'; Revision 6

Strategy A.3-01-G; CRD Pump Room; Revision 3

Strategy A.3-02-A; TIP Drive Area; Revision 4

Strategy A.3-04-B; RBCCW HX Area; Revision 4

Strategy A.3-37; Transformers; Revision 5

Strategy A.3-07-A; 125V Division I Battery Room; Revision 4

Strategy A.3-15-A; 12 DG Room; Revision 7

Strategy A.3-15-B; 11 DG Room and Day Tank Rooms; Revision 8

1R06 Flood Protection Measures

Documents and Procedures:

CA92-151; Evaluation of Mechanical and Structural Modification Package 92Q290,
"Flood Protection for the Lower 4160 Volt Switchgear Room"; Revision 0

Design Basis Documents (DBD) T.08; Internal Flooding; Revision 3

1R07 Heat Sink Performance

Documents and Procedures

1404-01; EDG ESW HX Performance Test; Revision 10

CA-04-167; 11 EDG HX Performance Test - Summer 2005; Revision 1

1R11 Licensed Operator Requalification Program

Documents and Procedures:

Simulator Exercise Guide RQ-SS-49E; SRV High Tailpipe Temperature Alarm, Loss of
Y-80 Power Supply, Reactor Vessel Level Pipe Failure, ATWS, and Failure of the CRD
Flow Control Valve; Revision 1

1R12 Maintenance Effectiveness

Documents and Procedures:

Monticello Maintenance Rule Periodic Assessment Report; June 2003 through
May 2004

Monticello Maintenance Rule Periodic Assessment Report; October 2002 through May 2003
EWI-05.02.01; Monticello Maintenance Rule Program Document; Revision 7
PEI-06.01; Maintenance Rule Coordinator Activities; Revision 0
4 AWI-05.07.02; PM Program (FP-PE-PM-01); Revision 3
CD 5.22; Maintenance Rule Program Standard; Revision 0
Monticello Maintenance Rule Program System Basis Document for PCT System; Revision 5
Monticello Maintenance Rule Program System Basis Document - DGs; Revision 1
Monticello Maintenance Rule Program System Basis Document - Reactor Manual Control; Revision 3
Monticello Maintenance Rule Program System Basis Document for Service Water System; Revision 2
Maintenance Rule Performance Improvement Plan for Reactor Manual Control; Revision 4; February 25, 2002
Maintenance Rule Performance Improvement Plan for PCT; Revision 3; June 16, 2003
Maintenance Rule Performance Improvement Plan for Safety Service Water; October 15, 2004
Maintenance Rule Reliability Calculations Using Demands per 2 Years as Defined in System Basis Documents
Maintenance Rule Statue Board (Showing Systems in a(1) or a(2) Status); July 13, 2005
MNGP-System Health Report for Reactor Manual Control System MN; June 9, 2005
MNGP-System Health Report for Primary Containment; June 20, 2005
MNGP- System Health Report for Service and Seal Water; June 6, 2005
MNGP- System Health Report for DGN EDGs; June 16, 2005
Monticello Maintenance Rule Periodic Update for July 2003; August 6, 2003
Monticello Maintenance Rule Periodic Update for November 2003; December 3, 2003
Monticello Maintenance Rule Periodic Update for February 2004; March 5, 2004
Monticello Maintenance Rule Periodic Update for February 2005; March 4, 2004
Maintenance Rule Database Entries for HPCI for Unavailability and Maintenance Preventable Functional Failure Data for July 1, 2003 through June 30, 2005
Monticello Maintenance Rule Periodic Update for February 2005
Monticello Maintenance Rule Program Periodic Assessment Report 10 CFR 50.65(a)(3); June 2003 - May 2004
Monticello Maintenance Rule System Basis Document for Reactor Pressure Relief; Revision 0
0397-A; SRV Low-Low Set System Quarterly Tests; Revision 9

Corrective Action Program Documents:

CAP028465; 2nd Failure in 9 Months of 13 Service Water Pump
CAP030750; 13 Non-Emergency Diesel Developed Coolant Leak
CAP033234; 12 EDG Lube Oil Dilution Results Are in the Borderline
CAP035915; AO-2009 Found with Higher than Expected Seating Torque
CAP039775; Received Unexpected Annunciator C02-B-2 (HPCI Turbine Exhaust Hi Drain Pot Level)
CAP038838; Operability Determination Performed for CAP038650 Appears to be Inadequate
CAP039479; HPCI Auxiliary Oil Pump Alignment Criteria Specified by PM Could Not Be Obtained

CAP035557; Level Switches LS-23-73 and LS-23-75 Qualified to Incorrect Environmental Conditions in CA-98-037
CAP035680; Potential Non-Conservatism TS for HPCI/RCIC Steam Line Area High Temperature
CAP036147; Configuration Management Issues Exist with Respect to HPCI Level Switch LS-23-98
CAP040056; Procedure Adherence Issue Observed During Performance of Procedure 0397-A
CAP040061; Not All TS Related Steps are Identified in SRV Low-Low Set System Quarterly
CAP035659; Low-Low Set Instrument 4062C No Longer Meets Acceptance Criteria of 0000-E
CAP027278; "G" SRV Leakage at 150 pounds per square inch gauge (PSIG) Required Plant Shutdown
CAP027697; Planned Reactor Scram per C.3 Shutdown
CAP027837; "B" SRV Tailpipe Temperature Indication Reading High
CAP300600; "B" SRV Tailpipe Temperature Reading 198 Degrees Fahrenheit
CAP027841; High Tailpipe Temperature for SRV "G" and "B" Reading High
ACE003795; High Tailpipe Temperatures for SRVs "G" and "B" High
ACE003793; "B" SRV Temperature Indicating Reading High
CAP019153; High Tailpipe Temperature

Work Orders:

WO0506219; Investigate and Repair HPCI Linkage
WO0506278; Replace HPCI Electronic to Hydro-Mechanical Governor (EGR) Actuator and Servo
WO0309964; Refurbish and Retest SRV Topworks SRV-243 ("B" SRV)

1R13 Maintenance Risk Assessments and Emergent Work Control

Documents and Procedures:

Maintenance Schedule for Work Week 5309
4850-604-PM; Breaker 152-604, 12 RHR Pump Relay Maintenance, Calibration and Test Tripping; Revision 3
SWI-14.01; Risk Management for Outage and On-Line Activities; Revision 4
Maintenance Schedule for Work Week 5312
Maintenance Schedule for Work Week 5403
Daily Plant Status Reports for the Week of September 19, 2005

Work Orders:

WO0505845; 4850-604-PM (Breaker 152-604) for P-202B (12 RHR Pump)
WO0505325; Valve AI-262 (Instrument Air to Torus Vent) has a Fitting Leak

1R15 Operability Evaluations

Documents and Procedures:

Form 8136-02; SCT Penetration Planned Leakage Summary (with entries through July 26, 2005); Revision 2

Calculation CA-94-082; Planned Leakage Through SCT Penetrations of Various Sizes; Revision 0
Calculation CA-05-115; SBTG Leakage Excess Capacity for Cycle 23; Revision 0
7140; RCIC Instrument Maintenance; Revision 20
0255-11-III-4; 14 ESW Quarterly Pump and Valve Test; Revision 37
0255-11-III-3; 13 ESW Quarterly Pump and Valve Test; Revision 33
Monticello Station Log for August 6, 2005

Corrective Action Program Documents:

CAP40037; Top Course of Block Lower Mud Joint Cracked Inside and Outside of SBTG Airlock
CAP040249; PS-13-67A RCIC Low Pump Suction Press Turbine Trip Found Outside of As Found
CAP040232; Unplanned 24 Hour LCO Due to Both trains of CRV Inoperable
CAP040236; DP Switch, DPS-2029A, V-EAC-14 Low Condenser Water Flow Found Out of As Found Required by Procedure
CAP040789; Evidence of Piston Seal Leakage from 12 SBLC Pump

Work Orders:

WO0402169; Perform I&C [Instrumentation & Control] PM 7140 on RCI-1 Instruments

1R16 Operator Workarounds

Documents and Procedures:

Monticello Operational Challenge List as of Thursday, July 28, 2005
Design Basis Document DBD-B.08.13; Main Control Room Heating, Ventilation, and EFT; Revision 2
MOD 03Q170; Add EFT to SBTG/SCT Initiation Logic

Corrective Action Program Documents:

CAP040233; ESW Function May Require Operator Action

1R19 Post-Maintenance Testing

Documents and Procedures:

0187-01; 11 EDG/11 ESW Diesel Oil Transfer Quarterly Pump and Valve Tests; Revision 55
1456-02; RHRSW Pump 12 and 14 Motor Cooler Flush Quarterly Surveillance; Revision 49
0255-08-1A-1; RCIC Quarterly Pump and Valve Tests; Revision 61
0255-04-IA-1-2; RHR Loop B Quarterly Pump and Valve Tests; Revision 66
4850-604-PM; 152-604, 12 RHR Pump Relay Maintenance, Calibration, and Test Tripping; Revision 3
CAP040174; NRC Resident Question on Potential for Preconditioning of RHRSW Solenoid Valves
0261; Fire Pump Exercise and Fuel Quantity Check; Revision 40

Work Orders:

WO0507174; Flush Service Water Line to "B" RHRSW Motor Coolers
WO0506297; Post-Maintenance Testing Activities Control Cover Sheet; Revision 12
WO0507224; SV-4937B, 12 RHRSW Pump Motor Cooler Valve Leakby
WO0505845; Preventative Maintenance (PM) 4850-604 (152-604) P-202B
(12 RHR Pump)
WO0507758; Replace Pump (12 RHRSW) Due to Degrading Pump DP

1R22 Surveillance Testing

Documents and Procedures:

0027; Reactor Lo-Lo Level Emergency Core Cooling System Initiation & Hi Level
RCIC/HPCI Turbine Trips Trip Unit Test and Calibration Procedure; Revision 21
0141; Reactor Building to Torus Vacuum Breaker Operability Test; Revision 24
0523; Reactor Water Cleanup High Flow and High Room Temperature Trip Unit
Instrument Test and Calibration; Revision 1
0255-08-1A-1; RCIC Quarterly Pump and Valve Tests (TEMP CHANGE); Revision 60
4851-30-PM; LPCI Swing Bus Relay Calibration; Revision 9
0255-05-IA-1-2; "B" RHRSW Quarterly Pump and Valve Tests; Revision 56

Corrective Action Program Documents:

CAP036851; DWV-8-1 and 8-2 (Torus Vacuum Breakers) are Incorrectly Described in
Several Sources
CAP039863; Corrective Action Did Not Change All of the Incorrect Valve Descriptions
(NRC Identified)
CAP038969; Entered Unplanned LCO for RCIC During the Performance of
0255-08-1A-1
CAP038611; RCIC EGM [Electronic Governing Module] Null Voltage out of As-Found
Criteria
CAP029066; During Routine PM on LPCI Swing Bus Relays, Loss of Voltage Timing
and Reset Relays 27-33 and 62-33 Slightly out of Band
CAP040203; Valve SV-4937B Indicated Intermediate Position During Test
0255-05-IA-1-2
CAP040474; Significant Seat Leakage Occurred Past SW-20-2 During RHRSW
Surveillance
CAP040371; Testing of SV-4937B in 0255-05-IA-1-2 was Determined to be Inadequate
CAP040369; 12 RHRSW Pump DP is in Alert Range per Test 0255-05-IA-1-2

Work Orders:

WO0310255; Preventative Maintenance 4851-30 (LPCI Swing Bus Relay Calibration)

1R23 Temporary Plant Modifications

Documents and Procedures:

CA-94-026; Temporary Anchor for RHRSW Pump Removal; Revision 1
Temporary Mod 05-019; RHRSW Piping Support in Place of Pump to Maintain Piping
Operability

Work Orders:

WO0507758; Replace Pump (12 RHRSW) Due to Degrading Pump DP

4OA2 Identification and Resolution of Problems

Documents and Procedures:

Event Notification 41897; Loss of Both Control Room Emergency Ventilation Systems During Testing

Calibration History for DPS-4029A: V-EAC-14A Low Condenser Water Flow Switch Modification 03Q170; Add EFT to SBTG/SCT Initiation Logic; Revision 0

Alteration 03A010; Replace DPS-4029A; Revision 0

Corrective Action Program Documents:

CAP040232; Unplanned 24 Hour LCO Due to Both Control Room Ventilation Trains Being Inoperable (8 Hour 10 CFR 50.72 Reportable)

ACE004371; Unplanned 24 Hour LCO Due to Both Control Room Ventilation Trains Being Inoperable (8 Hour 10 CFR 50.72 Reportable)

CA016554; DPS-4029A (V-EAC-14A Low Condenser Water Flow) Found Out of As-Found Tolerance, Calibrated to Within Final Tolerance

CAP040236; DPS-4029A, V-EAC-14A Low Condenser Water Flow Found Out of As-Found Criteria

CAP009837; Entered Unplanned LCO for Both CRV Trains Inoperable

CAP012930; DPS-4029A (V-EAC-14A Low Condenser Water Flow) Found Out of As-Found Tolerance, Calibrated to Within Final Tolerance

Work Orders:

WO0403547; Eliminate DPS-4029A Trip Function

WO0306001; Perform Service Water DP Test Across V-EAC-14A

WO0305941; Replace V-EAC-14A Low Condenser Water Flow Pressure Switch

WO0305980; Contingency - Install Jumper to Bypass Low Condenser Water Flow Trip

4OA3 Event Follow-up

Documents and Procedures:

Event Notification 41897; Loss of Both Control Room Emergency Ventilation Systems During Testing

Corrective Action Program Documents:

CAP040232; Unplanned 24 Hour LCO Due to Both Control Room Ventilation Trains Being Inoperable (8 Hour 10 CFR 50.72 Reportable)

LIST OF ACRONYMS USED

| | |
|-------|--|
| ACE | Apparent Cause Evaluation |
| ATWS | Anticipated Transient Without Scram |
| AWI | Administrative Work Instruction |
| CA | Corrective Action |
| CAM | Containment Atmospheric Monitoring |
| CAP | Corrective Action Program/Corrective Action Plan |
| CFR | Code of Federal Regulations |
| CRD | Control Rod Drive |
| CRV | Control Room Ventilation |
| CS | Core Spray |
| DBD | Design Basis Document |
| DG | Diesel Generator |
| DP | Differential Pressure |
| DRP | Division of Reactor Projects |
| EDG | Emergency Diesel Generator |
| EGM | Electronic Governing Module |
| EFT | Emergency Filtration Train |
| ESW | Emergency Service Water |
| EWI | Engineering Work Instruction |
| HPCI | High Pressure Core Injection |
| HX | Heat Exchanger |
| IMC | Inspection Manual Chapter |
| I&C | Instrumentation & Control |
| INPO | Institute of Nuclear Power Operations |
| IP | Inspection Procedure |
| IPEEE | Individual Plant Examination of External Events |
| IR | Inspection Report |
| LCO | Limiting Condition for Operation |
| LPCI | Low Pressure Coolant Injection |
| MG | Motor Generator |
| NCV | Non-Cited Violation |
| NMC | Nuclear Management Company |
| NRC | U.S. Nuclear Regulatory Commission |
| OWA | Operator Workaround |
| P&ID | Piping & Instrumentation Diagram |
| PARS | Publicly Available Records |
| PCT | Primary Containment |
| PM | Planned or Preventative Maintenance |
| PSID | Pounds per Square Inch Differential |
| PSIG | Pounds per Square Inch Gauge |
| RA | Risk Assessment |
| RBCCW | Reactor Building Closed Loop Cooling Water |
| RCIC | Reactor Core Isolation Cooling |
| RHR | Residual Heat Removal |
| RHRSW | Residual Heat Removal Service Water |
| RPS | Reactor Protection System |

LIST OF ACRONYMS USED

| | |
|------|-------------------------------------|
| RWCU | Reactor Water Cleanup |
| SBGT | Standby Gas Treatment |
| SBLC | Standby Liquid Control |
| SBO | Station Blackout |
| SCT | Secondary Containment |
| SDP | Significance Determination Process |
| SGTS | Standby Gas Treatment |
| SRV | Safety Relief Valve |
| SSCs | Structures, Systems, and Components |
| TIP | Traversing In-core Probe |
| TS | Technical Specification |
| USAR | Updated Safety Analysis Report |
| WO | Work Order |