



UNITED STATES
NUCLEAR REGULATORY COMMISSION

REGION III
2443 WARRENVILLE ROAD, SUITE 210
LISLE, ILLINOIS 60532-4352

October 24, 2018

Mr. Christopher Church
Site Vice President
Monticello Nuclear Generating Plant
Northern States Power Company, Minnesota
2807 West County Road 75
Monticello, MN 55362-9637

SUBJECT: MONTICELLO NUCLEAR GENERATING PLANT—NRC DESIGN BASES
ASSURANCE INSPECTION (TEAMS); INSPECTION REPORT 05000263/2018012

Dear Mr. Church:

On August 24, 2018, the U.S. Nuclear Regulatory Commission (NRC) completed a triennial baseline Design Bases Assurance Inspection (Teams) at your Monticello Nuclear Generating Plant. On September 13, 2018, the NRC inspectors discussed the results of this inspection with Mr. Hernandez (Site Regulatory Affairs Manager) and other members of your staff. The results of this inspection are documented in the enclosed report.

Based on the results of this inspection, the NRC has identified two issues that were evaluated under the risk significance determination process as having very-low safety significance (Green). The NRC has also determined that two violations are associated with these issues. Because the licensee initiated condition reports to address these issues, these violations are being treated as Non-Cited Violations (NCVs), consistent with Section 2.3.2 of the Enforcement Policy. These NCVs are described in the subject inspection report. Further, the inspectors documented a licensee-identified violation which was determined to be of very-low safety significance in this report. The NRC is treating this violation as an NCV consistent with Section 2.3.2 of the Enforcement Policy.

If you contest the violations or significance of these NCVs, 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 copies to the Regional Administrator, Region III; the Director, Office of Enforcement; and the NRC resident inspector at the Monticello Nuclear Generating Plant.

If you disagree with a cross-cutting aspect assignment or a finding not associated with a regulatory requirement in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region III; and the NRC resident inspector at the Monticello Nuclear Generating Plant.

This letter, its enclosure, and your response (if any) will be made available for public inspection and copying at <http://www.nrc.gov/reading-rm/adams.html> and at the NRC Public Document Room in accordance with Title 10 of the *Code of Federal Regulations*, Part 2.390, "Public Inspections, Exemptions, Requests for Withholding."

Sincerely,

/RA/

Karla Stoedter, Chief
Engineering Branch 2
Division of Reactor Safety

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

Enclosure:
Inspection Report 05000263/2018012

cc: Distribution via LISTSERV®

Letter to Christopher Church from Karla Stoedter dated October 24, 2018.

SUBJECT: MONTICELLO NUCLEAR GENERATING PLANT—NRC DESIGN BASES
ASSURANCE INSPECTION (TEAMS); INSPECTION REPORT 05000263/2018012

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No: 50-263; 72-058
License No: DPR-22

Report No: 05000263/2018012

Enterprise Identifier: I-2018-012-0002

Licensee: Northern States Power Company, Minnesota

Facility: Monticello Nuclear Generating Plant

Location: Monticello, MN

Dates: August 6, 2018, through August 24, 2018

Inspectors: J. Benjamin, Senior Engineering Inspector, Lead
A. Dahbur, Senior Engineering Inspector, Electrical
J. Park, Engineering Inspector, Mechanical
M. Jones, Operations Inspector
W. Hopf, Electrical Contractor
C. Baron, Mechanical Contractor

Approved by: K. Stoedter, Chief
Engineering Branch 2
Division of Reactor Safety

Enclosure

SUMMARY

The U.S. Nuclear Regulatory Commission (NRC) continued monitoring licensee’s performance by conducting a Design Bases Assurance Team Inspection at Monticello Nuclear Generating Plant in accordance with the Reactor Oversight Process. The Reactor Oversight Process is the NRC’s program for overseeing the safe operation of commercial nuclear power reactors. Refer to <https://www.nrc.gov/reactors/operating/oversight.html> for more information. Findings and violations being considered in the NRC’s assessment are summarized in the table below. Licensee-identified Non-Cited Violations (NCVs) are documented in report section: 71111.21M.

List of Findings and Violations

Inboard Main Steam Isolation Valve Closure Time Test Acceptance Criteria Did Not Account for the Design Basis Accident Containment Back Pressure and Pneumatic Supply Operating Pressure			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Barrier Integrity	Green NCV 05000263/2018012-01 Closed	None	71111.21M
The inspectors identified a Green finding and an associated NCV of Title 10 of the <i>Code of Federal Regulations</i> (CFR), Part 50, Appendix B, Criterion XI, “Test Control,” for the failure to assure that applicable requirements and acceptance limits contained in the inboard main steam isolation valve (MSIV) design documents were incorporated into their test procedure. Specifically, the inboard MSIV closure time acceptance criteria contained in Functional Test Procedure 0255-07-IA-2, “Main Steam Isolation Valve Functional Checks Test,” did not account for the elevated containment pressure and the expected lower pneumatic supply pressure expected during design basis accidents.			

Failure to Implement Adequate Freeze Protection Monitoring for Condensate Storage Tank Instrumentation Piping in Response to Industry Operating Experience			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000263/2018012-02 Closed	[P.2] – Problem Identification and Resolution, Evaluation	71111.21M
The inspectors identified a Green finding and an associated NCV of 10 CFR Part 50, Appendix B, Criterion XVI, “Corrective Action,” for the licensee’s failure to establish measures to ensure conditions adverse to quality are promptly identified and corrected. Specifically, the licensee failed to identify that monitoring of the CST instrument line heat tracing performed every 30 days was inadequate to assure the safety-related CST level instrumentation remained operable during extreme cold weather conditions.			

Additional Tracking Items

Type	Issue Number	Title	Report Section	Status
URI	05000263/2009007-06	Inadequate Tornado Missile Protection for the Emergency Diesel Generator System Components	4OA5	Closed
URI	05000263/2016008-01	Failure to Provide Acceptable Alternate Methods of Decay Heat Removal	4OA5	Closed

INSPECTION SCOPES

Inspections were conducted using the appropriate portions of the inspection procedures (IPs) in effect at the beginning of the inspection unless otherwise noted. Currently approved IPs with their attached revision histories are located on the public website at <http://www.nrc.gov/reading-rm/doc-collections/insp-manual/inspection-procedure/index.html>. Samples were declared complete when the IP requirements most appropriate to the inspection activity were met consistent with Inspection Manual Chapter (IMC) 2515, "Light-Water Reactor Inspection Program—Operations Phase." The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel to assess licensee performance and compliance with Commission rules and regulations, license conditions, site procedures, and standards.

REACTOR SAFETY

71111.21M—Design Bases Assurance Inspection (Teams)

The inspectors selected the components listed below based on the risk-significance/low margin approach. The inspectors evaluated the following components and listed applicable attributes, permanent modifications, and operating experience:

Components (5 samples)

(1) Emergency Diesel Generator 12

- a) Material condition and configuration (i.e., visual inspection during a field walkdown)
- b) Normal, abnormal, and emergency operating procedures
- c) Generator dynamic voltage range
- d) Limiting component voltage vs minimum available voltage while supplied by emergency diesel generator (EDG)
- e) Component health reports, corrective maintenance records, and corrective action history
- f) Frequency variations and load impact
- g) Load sequencer timing
- h) Room temperature vs kilowatt output capability
- i) Protection against external events
- j) Protection against internal events
- k) Seismic, pressure integrity, and piping design calculations
- l) Fuel oil transfer capability
- m) Surveillance testing
- n) Load sequencing time delay setpoint calculation

(2) 345 kV Bus 1

- a) Material condition and configuration (i.e., visual inspection during a field walkdown)
- b) Normal, abnormal, and emergency operating procedures
- c) High voltage breaker and relay settings and ratings
- d) Insulation coordination
- e) Overhead ground wire and lightning protection
- f) Grounding

- g) Underground cable systems
- h) Voltage variations and contingency plans
- i) System health report

(3) Motor Control Center 143A

- a) Material condition and configuration (i.e., visual inspection during a field walkdown)
- b) Normal, abnormal, and emergency operating procedures
- c) Maintenance effectiveness
- d) Load testing
- e) Relay calibration
- f) Grounding
- g) Protection from high energy line break (HELB) and internal flooding
- h) Cross-tie capability to motor control center 133A/B

(4) 4160/480 Transformer X30

- a) Material condition and configuration (i.e., visual inspection during a field walkdown)
- b) Normal, abnormal, and emergency operating procedures
- c) Maintenance effectiveness
- d) System health and a sample of corrective actions
- e) Technical specification surveillance performance and results
- f) Loading calculation
- g) Short circuit calculation
- h) Breaker coordination calculation

(5) Condensate Storage Tank

- a) Material condition and configuration (i.e., visual inspection during a field walkdown)
- b) Normal, abnormal, and emergency operating procedures
- c) Mechanical design calculations—seismic, pressure integrity, and piping
- d) Protection against internal flooding
- e) Protection against HELB
- f) Modification for the lower 4KV room flood barrier
- g) Translation of vendor specification on flood barriers
- h) Freeze protection of the CST and ancillary equipment during cold weather operations
- i) Level instrument setpoints for transfer of high pressure coolant injection (HPCI) and reactor core isolation cooling (RCIC) suction supply from CST to torus
- j) CST current licensing basis assumptions for station blackout rule

Large Early Release Frequency Component (1 sample)

(1) Unit 1 Division 1 Inboard Main Steam Isolation Valve

- a) Mechanical design calculations for pressure integrity and piping
- b) Normal, abnormal, and emergency operating procedures
- c) Structural loading calculations for equipment nozzles
- d) Protection from seismic event
- e) Accumulator sizing calculation
- f) Backup pneumatic supply requirements
- g) Spring capability for MSIV valve closure

- h) Technical Specification (TS) surveillance testing
- i) Containment accident pressure effect on valve closure time
- j) Solenoid control power and calculation
- k) Solenoid environmental qualification

Permanent Modification (5 Samples)

- (1) Engineering Change (EC) 16423, "Lower 4KV HELB Barrier;"
- (2) EC 25800, "Replacement for EDG Relays SCR/C-93 and SCR/C-94;"
- (3) Equivalent Evaluation 6EQVENG26743, "Replace EDG Field Flash Relays;"
- (4) EC 23085, "EDG Fuel Oil Train Separation;" and
- (5) EC 20938, "Replace EDG Governor Tubing with Flexible Hose."

Operating Experience (1 Sample)

- (1) NRC Information Notice 2005-30, "Safe Shutdown Potentially Challenged By Unanalyzed Internal Flooding Events And Inadequate Design"

INSPECTION RESULTS

71111.21M—Design Bases Assurance Inspection (Teams)

Inboard Main Steam Isolation Valve Closure Time Test Acceptance Criteria Did Not Account for the Design Basis Accident Containment Back Pressure and Pneumatic Supply Operating Pressure			
Cornerstone	Significance	Cross-cutting Aspect	Report Section
Barrier Integrity	Green NCV 05000263/2018012-01 Closed	None	71111.21M
<p><u>Introduction:</u> The inspectors identified a Green finding and an associated NCV of 10 CFR Part 50, Appendix B, Criterion XI, "Test Control," for the failure to assure that applicable requirements and acceptance limits contained in the inboard MSIV design documents were incorporated into their test procedure. Specifically, the inboard MSIV closure time acceptance criteria contained in Functional Test Procedure 0255-07-IA-2, "Main Steam Isolation Valve Functional Checks Test," did not account for the elevated containment and the expected lower pneumatic supply pressure expected during design basis accidents.</p>			
<p><u>Description:</u></p> <p>The inboard MSIVs are air-operated valves. Under normal operating conditions, the pneumatic supply to the actuator is provided by the non-safety related instrument nitrogen system at a nominal pressure of 105 psig. During accident conditions, the pneumatic supply is provided by a safety-related alternate nitrogen system at a nominal pressure of 87 psig as described in Section 10.3.4.2.3 of the Updated Safety Analysis Report. The inboard MSIV closure speed can be adjusted such that the MSIV isolation time of greater than or equal to 3 seconds and less than or greater than 9.9 seconds is accomplished as required by TS Surveillance Requirement (SR) 3.6.1.3.6. The licensee established Procedure 0255-07-IA-2, "Main Steam Isolation Valve Functional Checks Test," Revision 35, to perform TS SR 3.6.1.3.6. The procedure contained an acceptance valve closure time band of greater than or equal to 5.4 seconds and less than or equal to 9.4 seconds for the as-found MSIV static isolation</p>			

testing. This narrower band accounted for the instrumentation measurement uncertainty and bias to ensure that the TS requirement of ≥ 3 seconds and ≤ 9.9 seconds was satisfied. However, on August 23, 2018, the inspectors identified the procedure upper limit did not include the extra time needed for valve closure during accident conditions with elevated containment pressure. Specifically, Calculation 94-037, "Calculation of Alternate Nitrogen System Pneumatic Pressure Requirements," Revision 8A, determined the maximum inboard MSIV accident isolation time was 1.5 seconds longer than any static isolation because of the elevated containment pressure experienced under the most limiting loss of coolant accident condition. In addition, during an interview with plant personnel, the inspectors noted the inboard MSIV isolation time test performed per Procedure 0255-07-IA-2 typically utilizes the less limiting normal pneumatic supply pressure of approximately 105 psig as opposed to the 87 psig supply pressure credited in the analysis. Also, the test is typically conducted when containment pressure is essentially at atmospheric pressure as opposed to the elevated accident containment pressure.

Corrective Actions: As an immediate corrective action, the licensee reasonably determined the inboard MSIVs remained operable based on recent test results and accounting for the expected closure delay. The proposed plan to restore compliance at the time of the inspection included revising Revision 3 of Calculation 94-084, "Determination of MSIV Stroke Time Acceptance and Setpoint Band," and the inboard MSIV closure time acceptance criteria contained in Procedure 0255-07-IA-2, Revision 35.

Corrective Action Reference: Corrective Action Program (CAP) 501000016026

Performance Assessment:

Performance Deficiency: The inspectors determined the failure to account for the expected lower pneumatic supply pressure and elevated containment pressure during design basis accidents into the inboard MSIV closure time testing was contrary to 10 CFR Part 50, Appendix B, Criterion XI, "Test Control," and was a performance deficiency.

Screening: The performance deficiency was more-than-minor because it was associated with the Barrier Integrity cornerstone attribute of structure, system, or component, and barrier performance, and adversely affected the cornerstone objective of providing reasonable assurance that physical design barriers (fuel cladding, reactor coolant system, and containment) protect the public from radionuclide releases caused by accidents or events. Specifically, Procedure 0255-07-IA-2 did not provide reasonable assurance the inboard MSIVs would timely close to protect the public from radionuclide releases caused by accidents.

Significance: The finding was evaluated using the Significance Determination Process (SDP) in accordance with IMC 0609 Appendix A, "The Significance Determination Process for Findings At-Power," using Exhibit 3, "Barrier Integrity Screening Questions." The finding screened as of very-low safety significance (Green) because it did not represent an actual open pathway in the physical integrity of reactor containment, containment isolation system, and heat removal components, and did not involve an actual reduction in function of hydrogen igniters in the reactor containment. The licensee reasonably determined the inboard MSIVs remained operable based on recent test results by accounting for the expected closure delay.

Cross-cutting Aspect: No cross-cutting aspect was assigned to this finding because the inspectors determined that the finding did not reflect current licensee performance since the calculations were approved greater than 3 years ago.

Enforcement:

Violation: Title 10 CFR Part 50, Appendix B, Criterion XI, "Test Control," requires, in part, that a test program be established to assure all testing required to demonstrate structures, systems, and components will perform satisfactorily in service is performed in accordance with written test procedures which incorporate the requirements and acceptance limits contained in applicable design documents. The licensee established procedure 0255-07-IA-2, "Main Steam Isolation Valve Functional Checks Test," as the test procedure for demonstrating the inboard MSIV isolation time satisfies the requirements of TS SR 3.6.1.3.6.

Contrary to the above, from September 24, 2013, until August 23, 2018, the licensee failed to assure testing required to demonstrate the inboard MSIVs would perform satisfactorily in service was performed in accordance with written test procedures which incorporated the requirements and acceptance limits contained in applicable design documents. Specifically, Test Procedure 0255-07-IA-2, Revision 35, did not incorporate the delay in inboard MSIV closure time due to the expected lower pneumatic supply pressure and elevated containment pressure during design basis accidents as determined by Calculation 94-037, a design document, to ensure that the TS SR 3.6.1.3.6 is satisfied.

Disposition: This violation is being treated as an NCV, consistent with Section 2.3.2 of the Enforcement Policy."

Failure to Identify Condition Adverse to Quality for Inadequate Freeze Protection Monitoring for CST Instrumentation Piping

Cornerstone	Significance	Cross-cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000263/2018012-02 Closed	[P2] – Problem Identification and Resolution, Evaluation	71111.21M

Introduction: The inspectors identified a Green finding and an associated NCV of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," for the licensee's failure to establish measures to ensure conditions adverse to quality are promptly identified and corrected. Specifically, the licensee failed to identify that monitoring of the CST instrument line heat tracing performed every 30 days was inadequate to assure the safety-related CST level instrumentation remained operable during extreme cold weather conditions.

Description:

On March 6, 2018, the licensee initiated an evaluation of an industry operating experience associated with potential freezing of CST instrument lines (Reference: ADAMS Accession Number ML18004B072) under CAP 501000009183. Monticello Nuclear Generating Plant had CSTs equipped with a 4-inch instrumentation pipe. The instrument pipe was insulated and provided with electrical heat tracing because a portion of it was installed in the yard and exposed to ambient temperatures. The evaluation, performed under CAP 501000009183, dated March 27, 2018, concluded if the heat tracing failed no adverse condition existed because operator personnel monitored CST temperature once every two days, and the evaluation estimated it would take approximately 5 days for the piping to freeze with an average negative 20 degrees Fahrenheit ambient temperature.

On August 23, 2018, the inspectors reviewed the evaluation performed under CAP 50100009183 and identified the licensee had failed to identify a condition adverse to quality. Specifically, the licensee failed to identify the monitoring performed by operations personnel every 2 days checked the CST bulk water temperature rather than verifying the operation of the electrical heat tracing associated with the instrumentation piping. Operation of the instrument piping electrical heat tracing was verified monthly, which was significantly longer than the estimated time to freeze of 5 days. If the heat tracing failed and freezing of the CST level instrument piping occurred, the HPCI and the RCIC systems would be rendered inoperable due to potential pump damage due to loss of suction and the inability of the HPCI and RCIC suction sources to automatically transfer from the CST to the suppression pool during design basis accidents and transient conditions.

Corrective Actions: The licensee was still evaluating its planned corrective actions at the time of the inspection. However, the team determined that the continued non-compliance does not present an immediate safety concern because the issue only existed during the cold weather season and the licensee plans to restore compliance prior to that season.

Corrective Action Reference: CAP 501000016054

Performance Assessment:

Performance Deficiency: The inspectors determined the failure to identify a condition adverse to quality was contrary to 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Actions," and was as performance deficiency. Specifically, the licensee failed to identify monitoring of the CST instrument line heat tracing performed every 30 days was inadequate to assure the safety-related CST level instrumentation remained operable during extreme cold weather conditions.

Screening: The performance deficiency was determined to be more-than-minor because it was associated with the Mitigating Systems cornerstone attribute of Protection Against External Factors and affected the cornerstone objective of ensuring the availability, reliability, and capability of mitigating systems to respond to initiating events to prevent undesirable consequences. Specifically, the failure to implement adequate monitoring of freeze protection could result in the unavailability of CST instrumentation required for the transfer of the HPCI and RCIC pump suctions from the CST to the suppression pool under accident and transient conditions.

Significance: The finding was evaluated using the SDP in accordance with IMC 0609 Appendix A, "The Significance Determination Process for Findings At-Power," using Exhibit 2, "Mitigating System Screening Questions." The finding screened as very-low safety significance (Green) because it did not result in the loss of operability or functionality of mitigating systems. Specifically, the licensee evaluated data from the previous 2 years and determined the heat-tracing associated with the CST instrumentation remained available.

Cross-cutting Aspect: The finding had a cross-cutting aspect in the Evaluation component of the Problem Identification and Resolution cross-cutting area, which states that the licensee will thoroughly evaluate issues to ensure that resolutions address causes and extent of conditions commensurate with their safety significance. Specifically, the licensee did not thoroughly evaluate the issue in CAP 50100009183 to ensure that the credited actions were sufficient to resolve it.

Enforcement:

Violation: Title 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," requires, in part, that measures shall be established to assure conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and non-conformances are promptly identified and corrected.

Contrary to the above, as of August 23, 2018, the licensee failed to establish measures to assure conditions adverse to quality were promptly identified and corrected. Specifically, the licensee established monitoring of the CST instrument piping heat tracing on a 30 day frequency to ensure the CST instrument piping exposed to extreme cold weather conditions would not freeze. However, based on the licensee's evaluation documented in CAP 501000009183, the CST instrument piping exposed to extreme cold weather conditions could freeze within 5 days if the heat tracing failed. If freezing occurred, automatic transferring of the HPCI suction source from the CST to the suppression pool following a CST low level condition would be prevented resulting in damaging the pump beyond the point of recovery due to loss of suction.

Disposition: This violation is being treated as an NCV, consistent with Section 2.3.2 of the Enforcement Policy."

Licensee Identified Non-Cited Violation	71111.21M
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This violation of very-low safety significance was identified by the licensee and has been entered into the licensee CAP. Therefore, this finding being treated as an NCV, consistent with Section 2.3.2 of the Enforcement Policy.

Enforcement:

Violation: Title 10 CFR Part 50, Appendix B, Criterion III, "Design Control," requires, in part, that measures be established to assure that applicable regulatory requirements and the design basis are correctly translated into specifications, drawings, procedures, and instructions. Updated Final Safety Analysis Report, Appendix I, "Evaluation of High Energy Line Breaks Outside Containment," Table I.5-2, "Table of System Effects," Revision 36P, listed the Division II emergency power system as available during HELBs outside containment.

Contrary to the above, on July 29, 1974, the licensee failed to assure that applicable regulatory requirements and the design basis were correctly translated into specifications, drawings, procedures, and instructions. Specifically, the Division II emergency power system would not be available during a HELB outside containment. Procedure B.09.07-05, "Operations Manual Section 4.16 kV Station Auxiliary," Revision 53, had actions that required entry into the lower 4kV area to permit repowering Division II emergency power systems but this area would be inaccessible during the event.

Significance: The performance deficiency was determined to be more-than-minor because it was associated with the Mitigating Systems cornerstone attribute of Design Control and affected the cornerstone objective of ensuring the availability, reliability, and capability of mitigating systems to respond to initiating events to prevent undesirable consequences. Specifically, the performance deficiency resulted in a condition were the Division II emergency power system would not be available during HELBs outside containment. The inspectors assessed the significance of the finding using the SDP in accordance with IMC 0609,

Appendix A, “The Significance Determination Process for Findings At-Power,” using Exhibit 2, “Mitigating System Screening Questions,” and concluded the violation was of very-low safety or security significance (Green) because the licensee reasonably demonstrated an alternate strategy was available to timely reach and maintain cold shutdown conditions.

Corrective Action References: CAP 501000011837, CAP 50100001593

4OA5—Other Activities

Unresolved Item (Closed)	Inadequate Tornado Missile Protection for the Emergency Diesel Generator System Components URI 05000263/2009007-06	4OA5
<p><u>Description:</u> The NRC documented an unresolved item (URI) in Inspection Report 05000263/2009007 (ADAMS Accession Number ML100060183) involving tornado missile protection for the EDG building ventilation system. The issue was left unresolved pending further review.</p> <p>During the review, the inspectors asked similar questions on additional structures, systems, or components associated with the EDGs, such as the EDGs combustion air intakes, exhausts, and fuel oil system air vents. The inspectors, in consultation with the Office of Nuclear Reactor Regulation, researched the licensing basis and did not find an applicable licensing basis statement that was inconsistent with the installed design.</p> <p>Notwithstanding the above, the licensee developed and implemented EC 23982, “Missile Protection on Emergency Diesel Generator Exhaust Piping.” This EC installed a number of tornado generated missiles protection features on EDG components and auxiliaries including: (1) T-44 EDG diesel oil (DO) tank vent line re-route; (2) T-44 EDG DO tank manhole barriers; (3) T-44 EDG DO tank concrete barriers; (4) buried diesel fuel oil lines and fuel oil pump conduit; (5) fuel oil pump house roof barrier; (6) EDG intake/exhaust piping on roof protections; (7) V-SF-9 & V-SF-10 EDG fan intake louvers protection; (8) V-SF-9 & V-SF-10 EDG fan exhaust louver protection; (9) T-45A/B EDG day tank vent lines outside EDG building protection; and (10) 11/12 EDG base tank vent lines outside EDG building protection.</p> <p>No performance deficiency or violation of regulatory requirements were identified. The documents reviewed are included in the Attachment to this report. This review did not represent an inspection sample. This URI is closed.</p> <p>Corrective Action Reference: None since no violation was identified.</p>		

Unresolved Item (Closed)	Failure to Provide Acceptable Alternate Methods of Decay Heat Removal URI 05000263/2016008-01	4OA5
<p><u>Description:</u> The NRC documented a URI in Inspection Report 05000263/2016008 (ADAMS Accession Number ML16113A346). This URI involved the potential failure to verify that the capability of the alternate methods of decay heat removal required by TS 3.4.8, “Residual Heat Removal Shutdown Cooling System—Cold Shutdown,” were adequate to combat a loss of shutdown cooling resulting from the loss of one or two residual heat removal subsystems while in MODE 4 with high decay heat load. The issue was left unresolved pending further review.</p>		

During this inspection period, the inspectors consulted with regional enforcement specialists and the TS Branch of the Office of Nuclear Reactor Regulation; reviewed normal and abnormal procedures, and design documents; and conducted interviews of licensed operations and engineering staff. The inspectors noted Revision 13 of Procedure 4 AWI-08.15.03, "Risk Management for Outages," required operators to maintain an N+1 level of defense in depth throughout plant operating MODEs 3 and 4, where N is the TS minimum number of systems required in the MODE of applicability. Furthermore, the procedure required contingency plans whenever system availability is expected to drop below this requirement. The procedure also required verifying the credited +1 system had enough capacity to serve as an alternate method of decay heat removal by calculation or demonstration. The inspectors reviewed recent operating logs and confirmed the licensee implemented these procedure requirements.

No performance deficiency or violation of regulatory requirements were identified. The documents reviewed are included in the Attachment to this report. This review did not represent an inspection sample. This URI is closed.

Corrective Action Reference: CAP 501000016041

EXIT MEETINGS AND DEBRIEFS

The inspectors confirmed that proprietary information was controlled to protect from public disclosure. The inspectors verified no proprietary information was retained or documented in this report.

- On August 23, 2018, the team conducted a technical debrief to Mr. C. Dieckmann, and other members of the licensee staff.
- On September 13, 2018, the inspector presented the Design Bases Assurance Teams inspection results to Mr. G Hernandez, and other members of the licensee staff.

DOCUMENTS REVIEWED

71111.21M—Design Bases Assurance Inspection (Teams)

- 11-173; Task Report T0400—Containment System Response; Revision 1
- 11-180; Task Report T0407—ECCS-LOCA SAFER/GESTR; Revision 0A
- 16-014; Monticello LOCA Break Spectrum for EPU/EFW with ATRIUM 10XM Fuel; Revision 0
- 16-061; Development of Test Acceptance Criteria for Monticello EDG-ESW Pumps; Revision 0
- 04-166; EDG ESW Heat Exchanger Performance—Baseline; Revision 4
- 11-184; Task Report T0903 - Station Blackout; Revision 0
- 07-021; Reactor Building, Turbine Building, & Intake Structure Water height—Internal Flooding; Revision 1
- 07-035; Internal Flooding Analysis; Revision 0B
- 97-235; Instrument Setpoint Calculation, HPCI/RCIC Suction Transfer from CST; Revision 2
- 04-222; Instrument Setpoint Calculation—Time Delays for Electrical Sequencing of LPCI and CS Pumps; Revision 13
- 14-020; Auxiliary Power System Analysis; 06/13/2017
- 15-063; AC Power Analysis 120V Control Circuit; 05/08/2017
- 16-072; 480V Coordination Study; 05/24/2018
- 125 Vdc Battery 11 Modified Performance Test Profile 2017; Revision 0
- EQ File 98-008; Automatic Valve Company Air Control Assembly; Revision 1

- Calculation No. 07-035; Internal Flooding Analysis; Revision 0 and 0A
- Calculation No. 06-086; Demineralizer and Condensate Water Systems Calculation for Postulated Internal Flooding Scenarios; Revision 0, 0A, and 0B
- 92-224; Emergency Diesel Generator Loading; Revision 7
- CA-04-222; Instrument Setpoint Calculation—Time Delays for Electrical Sequencing of LPCI and CS Pumps; Revision 13
- G-EK-1-45; Residual Heat Removal Evaluations for HPCI Failure or RHR Shutdown Cooling Failure for the Monticello Nuclear Generating Plant; 04/22/1981
- QIM 501000009183; Cold Weather CST Operation; 03/06/2018
- QIM 501000012152; C.4-1 Procedure Issues; 05/18/2018
- QIM 500001557186; 12 EDG Frequency Out of Spec During 0419; 04/27/2017
- QIM 501000015300; C.4-I Manual Valves Not Cycled; 08/07/2018
- QIM 501000015382; Internal Flooding Calculation Details; 08/08/2018
- QIM 501000015369; Procedure Enhancement to Starter List Diesel; 08/09/2018
- QIM 501000015427; TS Bases Clarification Opportunity
- QIM 501000015741; Editorial Error in Calc 00-038; 08/16/2018
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