UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION III
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September 2, 2015

Mr. Peter A. Gardner
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 COMPONENT DESIGN BASES INSPECTION (INSPECTION REPORT 05000263/2015007)

Dear Mr. Gardner:

On July 24, 2015, the U.S. Nuclear Regulatory Commission (NRC) completed a Component Design Bases Inspection at your Monticello Nuclear Generating Plant. The enclosed report documents the inspection findings, which were discussed on July 24, 2015, with you and other members of your staff.

Based on the results of this inspection, two NRC-identified findings of very low safety significance were identified. The findings involved violations of NRC requirements. However, because of their very low safety significance, and because the issues were entered into your Corrective Action Program, the NRC is treating the issues as Non-Cited Violations (NCVs) in accordance with Section 2.3.2 of the NRC Enforcement Policy.

If you contest the subject or severity 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, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at Monticello Nuclear Generating Plant.

In accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) 2.390, “Public Inspections, Exemptions, Requests for Withholding,” of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public

inspection in the NRC's Public Document Room or from the Publicly Available Records (PARS) component of the NRC's Agencywide Documents Access and Management System (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

Christine A. Lipa, Chief
Engineering Branch 2
Division of Reactor Safety

Docket No. 50–263
License No. DPR–22

Enclosure:
Inspection Report 05000263/2015007;
w/Attachment: Supplemental Information

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No:	50–263
License No:	DPR–22
Report No:	05000263/2015007
Licensee:	Northern States Power Company, Minnesota
Facility:	Monticello Nuclear Generating Plant
Location:	Monticello, MN
Dates:	June 22, 2015, through July 24, 2015
Inspectors:	A. Dunlop, Senior Engineering Inspector, Lead B. Jose, Senior Engineering Inspector, Electrical M. Holmberg, Senior Engineering Inspector, Mechanical C. Phillips, Operations Inspector S. Gardner, Electrical Contractor G. Gardner, Mechanical Contractor
Observer:	I. Khan, Engineering Inspector, Electrical
Approved by:	Christine A. Lipa, Chief Engineering Branch 2 Division of Reactor Safety

Enclosure

SUMMARY

Inspection Report 05000263/2015007; 06/22/2015 – 07/24/2015; Monticello Nuclear Generating Plant; Component Design Bases Inspection.

The inspection was a 3-week onsite baseline inspection that focused on the design of components. The inspection was conducted by regional engineering inspectors and two consultants. Two Green findings were identified by the inspectors. The findings were considered Non-Cited Violations (NCVs) of U.S. Nuclear Regulatory Commission (NRC) regulations. The significance of inspection findings is indicated by their color (i.e., greater than Green, or Green, White, Yellow, Red), and determined using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process," dated April 29, 2015. Cross-cutting aspects are determined using IMC 0310, "Aspects Within the Cross-Cutting Areas," dated December 4, 2014. All violations of NRC requirements are dispositioned in accordance with the NRC's Enforcement Policy, dated July 9, 2013. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG 1649, "Reactor Oversight Process," Revision 5, dated February 2014.

Cornerstone: Mitigating Systems

- Green. The inspectors identified a finding having very-low safety significance, and an associated NCV of Title 10, *Code of Federal Regulations* (CFR), Part 50, Appendix B, Criterion III, "Design Control," for the failure to assure the nitrogen supply for the alternate nitrogen (AN2) system was controlled as safety-related in system specifications, drawings, procedures, and instructions. Specifically, the licensee did not confirm effective quality assurance controls were in place to ensure the bottled nitrogen was acceptable to support the safety-related functions of this system. The licensee entered this finding into the Corrective Action Program (CAP), and subsequently contacted the commercial nitrogen gas supplier to confirm that the vendor's quality controls provided a sufficient basis to conclude that the AN2 system was operable.

  The finding was determined to be more than minor because if left uncorrected, the issue had the potential to lead to a more significant safety concern. Specifically, if the commercial (e.g., non-safety) gas supply vendor quality controls were not adequate to ensure contaminants such as moisture or particulates were excluded from the nitrogen gas bottles, it could potentially disable the AN2 system's capability to support manual operation of safety relief valves during post loss-of-coolant-accident mitigation. The inspectors did not identify a cross-cutting aspect associated with this finding as it did not reflect current performance. (Section 1R21.3.b.(1))

- Green. The inspectors identified a finding of very-low safety significance, and an associated NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the failure to assure measures were established for the selection and review for suitability of application of materials, parts, equipment and processes that were essential to the safety-related functions of structures, systems and components. Specifically, the licensee failed to review for suitability of application of safety-related Agastat and General Electric relays that had exceeded their service life, a condition non-conforming to their design basis, to justify their continued service considering in-service deterioration. The licensee previously entered this finding into the CAP, and completed corrective actions to replace or evaluate some relays and implemented a program to address the remaining relays in a timely manner.

The finding was determined to be more than minor because, if left uncorrected, the issue had the potential to lead to a more significant safety concern. Specifically, these safety-related relays were installed in protective circuits such as reactor protection system, etc., and their failure could impact the proper operation of these protective schemes. The inspectors did not identify a cross-cutting aspect associated with this finding as it was not reflective of the licensee's current performance.
(Section 1R21.3.b.(2))

REPORT DETAILS

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R21 Component Design Bases Inspection (71111.21)

.1 Introduction

The objective of the Component Design Bases Inspection (CDBI) is to verify that design bases have been correctly implemented for the selected risk-significant components and that operating procedures and operator actions are consistent with design and licensing bases. As plants age, their design bases may be difficult to determine and an important design feature may be altered or disabled during a modification. The Probabilistic Risk Assessment (PRA) model assumes the capability of safety systems and components to perform their intended safety function successfully. This inspectable area verifies aspects of the Initiating Events, Mitigating Systems, and Barrier Integrity cornerstones for which there are no indicators to measure performance.

Specific documents reviewed during the inspection are listed in the Attachment to this report.

.2 Inspection Sample Selection Process

The inspectors used information contained in the licensee's PRA and the Monticello Standardized Plant Analysis Risk Model to identify internal flooding scenarios to use as the basis for component selection. Based on these scenarios, a number of risk-significant components, including those with large early release frequency (LERF) implications, were selected for the inspection.

The inspectors also used additional component information such as a margin assessment in the selection process. This design margin assessment considered original design reductions caused by design modification, power uprates, or reductions due to degraded material condition. Equipment reliability issues were also considered in the selection of components for detailed review. These included items such as performance test results, significant corrective actions, repeated maintenance activities, Maintenance Rule (a)(1) status, components requiring an operability evaluation, system health reports, and U.S. Nuclear Regulatory Commission (NRC) resident inspector input of problem areas/equipment. Consideration was also given to the uniqueness and complexity of the design, operating experience, and the available defense in depth margins. A summary of the reviews performed and the specific inspection findings identified are included in the following sections of the report.

The inspectors also identified procedures and modifications for review associated with the selected components. In addition, the inspectors selected operating experience issues associated with the selected components.

The inspection reviewed 19 samples (5 operating experience, 13 components, and 1 component with LERF implications) as defined in Inspection Procedure 71111.21 05.

.3 Component Design

a. Inspection Scope

The inspectors reviewed the Updated Safety Analysis Report (USAR), Technical Specifications (TS), design basis documents, drawings, calculations and other available design basis information, to determine the performance requirements of the selected components. The inspectors used applicable industry standards, such as the American Society of Mechanical Engineers Code, Institute of Electrical and Electronics Engineers (IEEE) Standards, and the National Electric Code, to evaluate acceptability of the systems' design. The NRC also evaluated licensee actions, if any, taken in response to NRC issued operating experience, such as Bulletins, Generic Letters, Regulatory Issue Summaries (RISs), and Information Notices (INs). The review was to verify that the selected components would function as designed when required and support proper operation of the associated systems. The attributes that were needed for a component to perform its required function included process medium, energy sources, control systems, operator actions, and heat removal. The attributes to verify that the component condition and tested capability was consistent with the design bases and was appropriate may include installed configuration, system operation, detailed design, system testing, equipment and environmental qualification, equipment protection, component inputs and outputs, operating experience, and component degradation.

For each of the components selected, the inspectors reviewed the maintenance history, preventive maintenance activities, system health reports, operating experience-related information, vendor manuals, electrical and mechanical drawings, and licensee corrective action program documents. Field walkdowns were conducted for all accessible components to assess material condition, including age-related degradation and to verify that the as-built condition was consistent with the design. Other attributes reviewed are included as part of the scope for each individual component.

The following 14 components (samples) were reviewed:

- Non-Safeguards Diesel Generator (DG-13): The inspectors reviewed the fuel capacity of the day tank, the procedures, and equipment required for refueling the day tank to determine if the DG-13 would be able to meet its' required mission time. In addition, the inspectors reviewed monthly operability testing to determine whether the DG-13 would perform as required. Maintenance records and trends were also reviewed to verify reliability. The inspectors reviewed the DG-13 ability to supply power for the safety-related inverter to Battery #13 in the event of an extended station blackout (SBO) scenario. Generator loading was reviewed for this scenario to ensure DG-13 was capable to supply the anticipated load per the operating procedures. A walk through of this scenario with licensee staff was conducted to ensure the operating procedure was adequate to perform the intended operations.

- Reactor Core Isolation Cooling Pump (P-207): The inspectors reviewed the system hydraulic calculations such as, net positive suction head (NPSH) and minimum required flow to ensure the pumps were capable of providing their function. The inspectors also reviewed the vendor manual for the pump to determine whether the pumps characteristics met the design basis requirements and these requirements were accurately incorporated in reactor core isolation

cooling (RCIC) system inservice testing (IST) procedures. The IST results were reviewed to assess potential component degradation and impact on design margins. The operation of the pump from various suction sources was reviewed to evaluate the pump's ability to provide the required flow from each source. The inspectors reviewed the RCIC operation during SBO compared to how various RCIC subcomponents were modeled in the battery sizing calculation to verify RCIC subcomponent loading was conservative.

- Reactor Core Isolation Cooling Minimum Flow Valve (CV-2104): The inspectors reviewed the air-operated valve (AOV) calculations, including required thrust, weak link, and maximum differential pressure, to ensure the valve was capable of functioning under design and licensing bases conditions. Diagnostic and IST results, including the leak rate test of the air system up to the check valve were reviewed to verify acceptance criteria were met and performance degradation would be identified. The inspectors reviewed the capacity calculation for the safety-related air accumulator to ensure sufficient air was available for the AOV to function as required upon loss of normal air. In addition, the accumulator check valve testing was reviewed to ensure the air system capacity would remain within its design limits. The inspectors reviewed the voltage and power supply requirements and verified the minimum required voltage would be available to the valve under all postulated conditions. The inspectors also verified the operation of the valve was appropriately modelled in battery sizing calculation.

- Reactor Core Isolation Cooling Steam Supply Inboard Containment Isolation Valve (MO-2075): The inspectors reviewed the motor-operated valve (MOV) calculations, including required thrust, weak link, degraded voltage, and maximum differential pressure, to ensure the valve was capable of functioning under design and licensing bases conditions. Diagnostic, IST, and local leak rate test results were reviewed to verify acceptance criteria were met and performance degradation would be identified. The inspectors reviewed the voltage and power supply requirements and verified the minimum required voltage will be available to the valve under degraded voltage conditions.

- Residual Heat Removal Pump 13 (P-202C): The inspectors reviewed the system flow and NPSH calculations to verify the pump was capable of performing its safety-related functions. The IST results were reviewed to assess potential component degradation and impact on design margins. The IST procedures were examined to determine whether the acceptance criteria adequately evaluated pump performance. Pump operation in various modes was reviewed to evaluate the pump's ability to provide the required flow in each mode. The inspectors reviewed the periodic testing to ensure the pump interlocks would function as required. The motor's fuse/breaker coordination study was examined to verify adequate coordination. The inspectors reviewed the environmental qualification (EQ) evaluation and vendor manuals to verify manufacturer's requirements for cooling the motor upper bearing during a postulated event were addressed. The motor overhaul/replacement schedule and the specification for overhauling motors was reviewed to ensure the motor's safety-related qualification was maintained. The inspectors compared the motor nameplate with information in the emergency diesel generator (EDG) loading calculation to ensure the correct values were incorporated into the calculation.

- Residual Heat Removal Service Water Pump 13 (P-109C): The inspectors reviewed system flow and NPSH calculations to determine whether the pump would operate at the minimum water level in the intake structure. Further, calculations and the adequacy of the differential pressure setpoint across the residual heat removal (RHR) heat exchanger were reviewed to ensure the service water side was at a higher pressure than the RHR side. The inspectors reviewed the maintenance documents for the most recent pump overhaul and the re-baselining of the pump performance curves to determine whether the rebuilt pump met design basis requirements. In addition, the inspectors reviewed completed pump surveillances for the rebuilt pump to ensure that actual performance was acceptable. The inspectors reviewed the EQ evaluation and vendor manuals to verify manufacturer's requirements for cooling the motor upper bearing during a postulated event were addressed. The motor's fuse/breaker coordination study was reviewed to verify adequate coordination. The inspectors compared the motor nameplate with information in the EDG loading calculation to ensure the correct values were incorporated into the calculation. The motor overhaul/replacement schedule and the specification for overhauling motors was examined to ensure the motor's safety-related qualification was maintained.

- Drywell-to-Torus Vacuum Breaker (AO-2382A): The inspectors reviewed the calculations to demonstrate the valve would function as designed following a loss-of-coolant accident (LOCA). Specifically, the inspectors reviewed calculations establishing the valve capacity (e.g., sizing) and the maximum stress on valve internal components. Additionally, the inspectors reviewed calculations establishing the acceptance criteria used in TS related surveillance tests including; the maximum allowable torque required to fully open the valve, and the differential pressure decay curve for establishing allowable seat leakage. The inspectors also reviewed completed surveillance and maintenance records to verify acceptance criteria were met and performance degradation would be identified. The inspectors reviewed the solenoid valve voltage and power supply requirements and verified that minimum required voltage would be available under the worst case loading conditions. The inspectors also reviewed the micro switch replacement history and the reasons for replacement.

- Safety Relief Valve (RV-2-71E): The inspectors reviewed maintenance and test procedures to determine if the procedures were adequate to ensure that the safety relief valve (SRV) would reliably function to relieve an over-pressure condition. Additionally, the inspectors reviewed the calculation demonstrating the valve had a sufficient supply of nitrogen from the safety-related alternate nitrogen (AN2) system to allow manual actuation and operation to support post-accident mitigation functions. The inspectors also reviewed completed surveillance and maintenance records to verify acceptance criteria were met and performance degradation would be identified. The inspectors reviewed the actuation of the low-low set SRV to ensure response times were within allowable values. A review of the control circuit, calculations for the setpoints, and solenoid response times was performed to ensure coordination of the low-low set SRV with the balance of mechanically operated SRVs.

- Emergency Diesel Fuel Oil System: The inspectors reviewed the modification that restored the fuel oil system to within the plant's licensing basis. Specifically, the inspectors reviewed the following system components:

  - Diesel Fuel Oil Transfer Pumps (P-160A-D): The inspectors reviewed the calculation to confirm these pumps developed sufficient flowrates to support the system accident mitigation function. Specifically, the inspectors reviewed the hydraulic calculation that evaluated eight operating configurations to ensure the minimum required NPSH was maintained for the limiting pump, and the pump flow capacity was sufficient to maintain the associated EDG day tank level and/or support transfer of fuel to other storage tanks. Additionally, the inspectors reviewed the completed pre-operational pump acceptance tests and performed a visual inspection of the pumps to assess configuration and potential vulnerabilities to hazards. The inspectors reviewed the design of the EDG fuel oil system to determine whether all applicable standards and the requirements for train separation were met. The inspectors reviewed the control and motor protection scheme for the newly installed transfer pumps and the associated calculations. Also reviewed were the cable sizing, voltage drop to motor terminals and motor control center starter coil pick-up voltages, and additional loading on the EDG by the additional transfer pump motors. The method for fire separation of Division II piping and cabling routed through the Division I EDG room was reviewed to ensure a fire in one room would not affect both EDGs.

  - Diesel Fuel Oil Transfer Pump Relief Valves (RV-1523, RV-1524, RV-1525, RV-1526) and Attached Piping: The inspectors reviewed the safety relief valve design data sheet and vendor catalog information used to establish the valve lift setpoint and capacity to ensure that the relief valves provided adequate overpressure protection for the system to meet the pipe design Code (1977 Edition, Winter 1978 Addenda, ANSI B31.1 Power Piping). The inspectors reviewed the completed pre-operational acceptance testing for the relief valves and performed a visual inspection of these valves to assess configuration and potential vulnerabilities to hazards. Additionally, the inspectors reviewed the certified material test reports and certification of conformance records for the relief valves and select pipe components replaced during the relief valve installation to confirm the valve and pipe component materials met the design/fabrication Code and pipe specifications.

- 250vdc Bus (D311): The inspectors reviewed the fault current calculation and vendor documents regarding breakers contained within bus D311. The inspectors reviewed the feeder breaker calculation for sizing and protection scheme. The inspectors reviewed the environmental conditions in the RCIC room (location of D311) during a high energy line break (HELB). The inspectors reviewed the D311 cabinet and reviewed cabinet/equipment specifications for temperature and humidity to ensure equipment would function as required under worst case environmental conditions. The inspectors also considered the qualification testing and calculations regarding the HELB boundary door between the RCIC room and the torus area to verify the door would maintain an adequate boundary during a HELB event.

- 250vdc Battery (#13): The inspectors reviewed the battery sizing calculation to verify the battery has adequate capacity to cope with the most limiting accident and transient conditions, the load profile modeled was conservative compared to actual worst case loading scenario in the plant. The inspectors also reviewed the voltage drop calculation to verify the voltages available at all components, under worst case loading conditions, were above their minimum voltage requirements.

- 250vdc Battery Charger (D-52): The inspectors reviewed the battery charger sizing calculation to verify the battery charger has sufficient capacity to supply the normal loads and fully charge the battery from a fully discharged state within 24 hours. The inspectors also reviewed the scheme to supply the charger from the non-safety-related DG-13 during an extended SBO.

- 250vdc Battery Room Ventilation Fan (V-EF-40B): The inspectors reviewed calculations concerning the battery room airflow required for limiting hydrogen accumulation and the flow necessary to supply outside air across the control room emergency filtration train (EFT) system inlet radiation monitor to determine whether the current airflow met design basis requirements. The modification to the EFT system that blanked off a portion of the EFT inlet duct work was reviewed to determine whether it would interfere with the fan's safety-related function. The inspectors reviewed periodic system testing and test results to verify acceptance criteria were met and performance degradation would be identified. For out of specification flow readings, the inspectors verified causes were identified and adequate corrective actions were taken. Normal and abnormal operating procedures were reviewed to ensure they were updated after the modifications. The inspectors reviewed electrical schematics to ensure adequate power was available to the fan motor and control room alarms.

- 4160vac Essential Bus 15 (A5): The inspectors reviewed the sizing and coordination of the feeder and load breakers. The degraded voltage calculation was reviewed to verify adequate voltage will be available to safety-related components during a design basis event concurrent with a degraded voltage condition. The inspectors also reviewed documents to verify that the feeder cable to the bus was adequately sized. The 125vdc voltage drop calculation was reviewed to verify the feeder and load breaker control components will have sufficient voltage available during the worst case loading conditions. The bus breaker/relay testing procedures were also reviewed.

b. Findings

(1) Inadequate Quality Assurance Controls for Nitrogen Supply for the Alternate Nitrogen System

Introduction: The inspectors identified a finding of very low safety significance (Green), and an associated Non-Cited Violation (NCV) of Title 10, *Code of Federal Regulations* (CFR), Part 50, Appendix B, Criterion III, "Design Control," for the licensee's failure to assure the nitrogen supply for the AN2 system was controlled as safety-related in system specifications, drawings, procedures, and instructions. Specifically, the licensee had not confirmed effective quality assurance controls were in place to ensure the bottled nitrogen was acceptable to support the safety-related functions of this system.

Description: On July 23, 2015, the inspectors identified the licensee failed to control the nitrogen supply for the AN2 system as safety-related in system specifications, drawings, procedures, and instructions. In particular, the inspectors were concerned that the failure to implement adequate quality controls could result in failure of the AN2 system to function in support of accident mitigation.

The USAR Section 4.4.2.1, "Safety/Relief Valves," stated, "the automatic depressurization system safety/relief valves are designed to withstand a hostile environment and still perform their function for 100 days following an accident." In support of this function, a safety-related backup pneumatic supply was provided by the AN2 system, which automatically supplies pressure to 6 of the 8 SRV actuators upon loss of the non-safety related instrument nitrogen system. The USAR Section 4.4.4, stated, "The bottled nitrogen supply racks used for the AN2 system are manually checked for adequate supply and pressure during plant operation at a frequency to assure minimum design capacity requirements of the system will be met, when required, assuming worst case leakage rates." To ensure an adequate supply of nitrogen to the safety-related AN2 system, the licensee determined in Calculation 94-017, "Calculation of Alternate Nitrogen Operability Leakage Criteria," that in addition to the 8 installed nitrogen bottles, 59 spare nitrogen bottles charged to a minimum of 2283 psig were required. This quantity of nitrogen represented a 7 day supply, which provided time for the licensee to procure additional nitrogen from an offsite supplier.

The inspectors observed that the licensee had stored 8 spare bottles of nitrogen in the turbine building, and in excess of 51 spare bottles within the onsite shipping/receiving warehouse. These spare nitrogen bottles did not have installed pressure gauges, so the inspectors could not confirm the pressure (e.g., quantity) of nitrogen stored in the spare bottles. On August 14, 2014, during installation of spare nitrogen bottles to the AN2 system, the licensee identified two empty nitrogen bottles that prompted an apparent cause investigation documented in Action Request (AR) 01443013. As a result, the licensee determined the cause of the empty bottles was the spare nitrogen bottles were not verified fully charged prior to installation. To correct this issue, the licensee checked each bottle (with a temporary pressure gage) on a weekly basis to confirm that the spare bottles stored in the turbine building were fully charged. However, the licensee had never checked the pressure of the spare bottles in the receiving warehouse, and had not determined if the empty bottles identified in 2014 were the result of an error in the gas vendor's quality controls or an error in the licensee's onsite inventory control process. The inspectors observed that the nitrogen bottles stored in the receiving warehouse were not labeled as full or empty and most did not have material stock tags. Because these bottles were not procured as safety-related, the licensee did not have an inventory control procedure that required labeling nitrogen bottles as full or empty, or that prohibited storing empty nitrogen bottles with full bottles of nitrogen, or that required use of material control stock tags. The inspectors' questions on inventory control prompted the licensee to measure the pressure of the spare nitrogen bottles stored in the receiving warehouse. As a result of this activity, the licensee identified one bottle with an unexpectedly low-pressure of 1800 psig. The licensee quarantined this bottle for subsequent investigation to determine the cause of the unexpected low-pressure.

In addition to the quantity of nitrogen for the AN2 system, the inspectors were concerned with the quality of the nitrogen because the licensee procured this nitrogen from a commercial gas supply vendor without performing tests to confirm the type or quality of the gas received. The inspectors were concerned that if the commercial vendor quality

controls were not sufficient, the nitrogen supply may contain high moisture content, particulates, or be mixed with other gas types. In particular, if moisture levels were excessive, the water vapor would freeze during expansion of the gas at the AN2 system pressure reducers and create ice particles that could block AN2 system components (e.g., pipes or valves), and result in SRVs which could not be manually actuated. Similarly, a high particulate concentration could block small passages in AN2 system components (e.g., pressure regulators) and restrict the flow of nitrogen resulting in SRVs, which could not be manually actuated. If the SRVs could not be operated manually, it would impair/prevent accident mitigation functions such as reactor pressure control, reactor depressurization, and alternate shutdown cooling. The inspectors' concerns, prompted the licensee to contact the gas supply vendor to determine what vendor controls were used to confirm the quantity and quality of the nitrogen delivered. The commercial vendor's controls included evacuation of reused bottles and sampling of the gas in one bottle from each batch (groups of 24) to confirm gas purity and lack of contaminants (e.g., moisture content). Additionally, the gas supply vendor reportedly used a "closed process" to fill the nitrogen bottle that did not introduce particles. The licensee concluded that the gas vendor quality controls provided a sufficient basis to conclude that the AN2 system was operable.

Title 10 CFR 50.2 states, that, "safety-related structures, systems and components (SSCs) means those SSC that are relied upon to remain functional during and following design basis events to assure: (1) The integrity of the reactor coolant pressure boundary; (2) The capability to shut down the reactor and maintain it in a safe shutdown condition; or (3) The capability to prevent or mitigate the consequences of accidents which could result in potential offsite exposures comparable to the applicable guideline exposures set forth in 10 CFR 50.34(a)(1), or 10 CFR 100.11 of this chapter, as applicable." The licensee guidance to implement this definition existed in Attachment 2, "Classification Guidance," of procedure FP-E-RTC-02, "Equipment Classification," which stated, in part, "Items that are either installed in safety-related systems and relied upon to provide or support the safety-related functions, or are installed in any system needed to satisfy safety-related interface requirements (e.g., isolation devices) are identified. These items are classified as safety-related." Based upon this guidance, the nitrogen supplied by four bottles installed in each AN2 system train should have been identified as safety-related because the nitrogen was required to support the safety-related functions of the AN2 system. On drawing NH-36049-10, "Alternate Nitrogen Supply System," the installed nitrogen bottles were located outside the safety-related portion of the AN2 system piping boundary and instead were identified as a "special concerns item," which was defined as an item subject to "augmented quality" controls in FP-E-RTC–02. The licensee added the "special concerns item" designation for the nitrogen bottles in 1988, as a result of an NRC commitment associated with NUREG 0737, "Clarification of Three Mile Island Action Plan Requirements." However, the licensee had not procured the installed or spare nitrogen bottles under a safety-related Quality Control Program as described in 10 CFR Part 50, Appendix B. Instead, the licensee had procured the nitrogen bottles from a commercial vendor without auditing the gas vendor's quality controls and without conducting confirmatory tests to verify the type, quality or quantity of gas delivered.

The licensee initiated AR 01486991, and contacted the commercial nitrogen gas supplier to confirm that the vendor's quality controls provided a sufficient basis to conclude the AN2 system was operable. In addition, the licensee identified an action to evaluate the controls in place to ensure that AN2 system nitrogen supply bottles had adequate pressure and adequate gas quality.

Analysis: The inspectors determined the failure to demonstrate the nitrogen supply for the AN2 system was controlled as safety-related in system specifications, drawings, procedures and instructions was contrary to 10 CFR Part 50, Appendix B, Criterion III, "Design Control," and a performance deficiency. The finding was determined to be more than minor in accordance with Inspection Manual Chapter (IMC) 0612, Appendix B, "Issue Screening," dated September 7, 2012, because the inspectors answered "Yes" to the More-than-Minor screening question, "If left uncorrected, would the performance deficiency have the potential to lead to a more significant safety concern?" Specifically, if the commercial (e.g., non-safety) gas supply vendor quality controls were not adequate to ensure contaminants such as moisture or particulates were excluded from the nitrogen gas bottles, it could potentially disable the AN2 system capability to support manual operation of SRVs during post LOCA mitigation.

The inspectors determined the finding could be evaluated using the Significance Determination Process (SDP) in accordance with IMC 0609, "Significance Determination Process," dated April 29, 2015, Attachment 0609.04, "Phase 1 — Initial Screening and Characterization of Findings," dated June 19, 2012, for the Mitigating Systems cornerstone. The inspectors evaluated the finding using Appendix A, "The Significance Determination Process for Findings At-Power." The finding screened as very low safety significance (Green) because the inspectors were able to answer "Yes" to screening Question A1 in Exhibit 2 because the finding represented a design deficiency confirmed not to result in loss of operability or functionality.

The inspectors did not identify a cross-cutting aspect associated with this finding as it did not reflect current performance.

Enforcement: Title 10 CFR Part 50, Appendix B, Criterion III, "Design Control," required, in part, "Measures shall be established to assure that applicable regulatory requirements and the design basis, as defined in 10 CFR 50.2, and as specified in the license application, for those SSC to which this appendix applies are correctly translated into specifications, drawings, procedures, and instructions. These measures shall include provisions to assure that appropriate quality standards are specified and included in design documents and that deviations from such standards are controlled. Measures shall also be established for the selection and review for suitability of application of materials, parts, equipment, and processes that are essential to the safety-related functions of the SSC."

Contrary to the above, as of July 23, 2015, the licensee had not established measures to assure that the design basis for the nitrogen supply to the AN2 system was correctly translated (e.g., classified/controlled as safety-related) into specifications, drawings, procedures, and instructions.

Because this violation was of very-low safety significance, and it was entered into the licensee's Corrective Action Program (CAP) as AR 01486991, where the licensee contacted the supplier to confirm the vendor's quality controls provided a sufficient basis to conclude the AN2 system was operable, this violation is being treated as an NCV, consistent with Section 2.3.2 of the NRC Enforcement Policy (NCV 05000263/2015007-01, Inadequate Quality Assurance Controls for Nitrogen Supply for the AN2 System).

(2) Failure to Review for Suitability of Application of Safety-Related Relays Installed Beyond Their Service Life

Introduction: The inspectors identified a finding of very low safety significance (Green), and an associated NCV of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the failure to assure measures were established for the selection and review for suitability of application of materials, parts, equipment and processes that were essential to the safety-related functions of SSC. Specifically, the licensee failed to review for suitability of application of safety-related Agastat and General Electric (GE) relays that exceeded their service life, a condition nonconforming to their design basis, to justify their continued service considering in-service deterioration.

Description: During the 2012 Problem Identification and Resolution inspection, Unresolved Item (URI) 05000263/2012008-01 was opened related to the qualification basis for safety-related relays and motor starter contactors. The URI identified concerns with the licensee not replacing safety-related relays and motor starter contactors that were beyond the vendor's recommended service life without an appropriate evaluation justifying the extension of their service life. The inspectors in consultation with Nuclear Reactor Regulation staff issued Task Interface Agreement (TIA) 2014-01, "Final Task Interface Agreement – Regulatory Position on Design Life of Safety-Related Structures, Systems, and Components Related to Unresolved Items at Donald C. Cook Nuclear Power Plant, Monticello Nuclear Generating Plant and Palisades Nuclear Plant." The TIA was issued on May 7, 2015, and concluded "when a licensee becomes aware that a safety-related SSC's service life has been exceeded or information challenges the presumption that a safety-related SSC can perform its specified function, the licensee must promptly address and document this non-conforming condition in accordance with the licensee's NRC approved Quality Assurance Program, the licensee's operability/functionality program and the CAP. This includes completing appropriate corrective actions in a timely manner and documenting licensee's evaluations justifying the service life extensions."

During this inspection, the inspectors noted the licensee previously initiated AR 01446684, which identified a number of corrective actions. Some actions were already completed and the remaining were scheduled for completion in a timely manner. Immediate corrective actions included instituting a Relay Monitoring Program, performing generic service life evaluations on some of the safety-related Agastat and GE relays, and identifying and replacing relays that had exceeded vendor recommended service life. The licensee continued to identify safety-related relays exceeding vendor recommended service life and had plans to conduct extent of condition reviews. A separate action item was initiated to evaluate motor starter contactors.

Analysis: The inspectors determined the failure to review for suitability of application of safety-related relays installed beyond their service life to justify their continued service, considering in-service deterioration, was contrary to 10 CFR Part 50, Appendix B, Criterion III, and a performance deficiency. The finding was determined to be more than minor in accordance with IMC 0612, Appendix B "Issue Screening," because the inspectors answered "Yes" to the More-than-Minor screening question, "If left uncorrected, would the performance deficiency have the potential to lead to a more significant safety concern?" Specifically, these safety-related relays were installed in protective circuits such as reactor protection system, etc., and their failure could impact the proper operation of these protective schemes.

The inspectors determined the finding could be evaluated using the SDP in accordance with IMC 0609, "Significance Determination Process," Attachment 0609.04, "Phase 1 Initial Screening and Characterization of Findings," for the Mitigating Systems cornerstone. The inspectors evaluated the finding using Appendix A, "The Significance Determination Process for Findings at Power." The finding screened as very low safety significance (Green) because the inspectors were able to answer "Yes" to screening Question A1 in Exhibit 2, because the finding represented a qualification deficiency of a mitigating SSC confirmed not to result in loss of operability or functionality.

The inspectors did not identify a cross-cutting aspect associated with this finding as it did not reflect licensee's current performance.

Enforcement: Title 10 CFR Part 50, Appendix B, Criterion III, "Design Control," required, in part, "Measures shall be established to assure that the selection and review for suitability of application of materials, parts, equipment, and processes that are essential to the safety-related functions of SSC."

Contrary to the above, as of July 24, 2015, the licensee failed to establish measures to ensure the selection and review for suitability of application of materials, parts, equipment, and processes that were essential to the safety-related functions of SSC. Specifically, the licensee failed to review for suitability of application of safety-related Agastat and GE relays that exceeded their service life, a condition nonconforming to their design basis, to justify their continued service considering in-service deterioration.

Because this violation was of very-low safety significance, and it was entered into the CAP as AR 01446684, where corrective actions to replace or evaluate relays were either already completed or scheduled for completion in a timely manner, this violation is being treated as an NCV, consistent with Section 2.3.2, of the NRC Enforcement Policy. (NCV 05000263/2015007-02, Failure to Review for Suitability of Application Safety-Related Relays Installed Beyond Their Service Life.)

.4 Operating Experience

a. Inspection Scope

The inspectors reviewed five operating experience issues (samples) to ensure that NRC generic concerns had been adequately evaluated and addressed by the licensee. The operating experience issues listed below were reviewed as part of this inspection:

- IN 2012-14, "Motor-Operated Valve Inoperable Due to Stem-Disc Separation;"
- IN 2013-05, "Battery Expected Life and Its Potential Impact on Surveillance Requirements;"
- RIS 2000-012, "Resolution of Generic Safety Issue B-55, Improved Reliability of Target Rock Safety Relief Valves;"
- GE Service Information Letter (SIL) 44, "GE HFA Relay Coil Life;" and
- GE SIL 196 – Original thru Supplement 17, "Recommendations for Target Rock Main Steam Safety/Relief Valves."

b. Findings

No findings were identified.

.5 Modifications

a. Inspection Scope

The inspectors reviewed four permanent plant modifications related to selected risk-significant components to verify that the design bases, licensing bases, and performance capability of the components had not been degraded through modifications. The modifications listed below were reviewed as part of this inspection effort:

- DC79M070, Modify Drywell to Torus Vacuum Breakers;
- EC23085, EDG Fuel Oil Train;
- EC23805, EDG Fuel Oil Train Separation; and
- EC25733, Alternate Nitrogen Bottle Change-out Check Valves.

b. Findings

No findings were identified.

.6 Operating Procedure Accident Scenarios

a. Inspection Scope

The inspectors performed a margin assessment and a detailed review of two risk-significant, time critical operator actions and an alternate method to provide power to battery chargers during a prolonged SBO. These actions were selected from the licensee's PRA rankings of human action importance based on risk achievement worth values. Where possible, margins were determined by the review of the assumed design basis and USAR response times and performance times documented by job performance measures results. For the selected operator actions, the inspectors performed a detailed review and walk through of associated procedures, including observing the performance of some actions in the plant, with an appropriate plant operator to assess operator knowledge level, adequacy of procedures, and availability of special equipment where required.

The following operator actions were reviewed:

- Actions to isolate flooding from plant administration building fire header;
- Actions to isolate Service Water line to 12 Main Feedwater cooler line break; and
- Actions to use the non-safety-related DG13 to provide power to the Division II 250 vdc Battery Chargers in the event of an SBO.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

4OA2 Identification and Resolution of Problems

.1 Review of Items Entered Into the Corrective Action Program

a. Inspection Scope

The inspectors reviewed a sample of the selected component problems identified by the licensee and entered into the CAP. The inspectors reviewed these issues to verify an appropriate threshold for identifying issues and to evaluate the effectiveness of corrective actions related to design issues. In addition, corrective action documents written on issues identified during the inspection were reviewed to verify adequate problem identification and incorporation of the problem into the CAP. The specific corrective action documents sampled and reviewed by the inspectors are listed in the attachment to this report.

The inspectors also selected two issues identified during previous CDBIs to verify that the concern was adequately evaluated and corrective actions were identified and implemented to resolve the concern, as necessary. The following issues were reviewed:

- NCV 05000263/2012007-03; Failure to Maintain the Degraded Voltage Function Time Delay Design: The inspectors reviewed the licensee's design change that removed the 1AR transformers additional 5 second time delay and restored compliance to the TSs.

- NCV 05000263/2012007-04; Failure to Analyze Effect of Degraded Voltage on Proper Operation of Thermal Overload Relays: The inspectors reviewed three of four corrective actions completed associated with this issue. The completed issues included: 1) EC19903 increased the margins for the subject thermal overload relay (TOL) settings; 2) EC25687 analyzed TOL performance for MOVs during a degraded voltage with LOCA scenario; and 3) EC25688 analyzed TOL performance for all continuous duty motors during a degraded voltage with LOCA scenario. The fourth issue to formalize the analysis was included in the Monticello Calculation Reconstitution Project with completion planned by July 2016. This was being tracked by AR 01197202 and OBN01479704-04.

b. Findings

No findings were identified.

4OA5 Other Activities

.1 (Closed) URI 05000263/2012008-01; Qualification Basis for Safety-Related Relays and Motor Starter Contactors: This URI is closed to NCV 05000263/2015007-01, Failure to Review for Suitability of Application of Safety-Related Relays Installed Beyond Their Service Life. See Section 1R21.3.b.(2).

.2 (Closed) URI 05000263/2012008-02; Concern with Periodic Design Basis Testing of Installed Relays and Motor Starter Contactors: During the 2012 Problem Identification & Resolution inspection, the inspectors were concerned the licensee was not testing installed relays and motor starter contactors to verify their design basis capacity in

accordance with IEEE Standard 336-1971 and Regulatory Guides 1.30 and 1.33. The inspectors noted that the Regulatory Guides did not contain detailed or specific testing instructions and only had general guidelines. The IEEE-336 did have detailed instructions for installation, inspection, and testing for class 1E power, instrumentation and control equipment at nuclear facilities. While reviewing the applicability section of the IEEE-336, inspectors noted the standard did not apply to periodic testing and maintenance following initial installation. The standard only applied to initial installation of new equipment or equipment modifications, or modification of power, instrumentation and control equipment and systems in a nuclear facility from the time the equipment was turned over for installation until it was declared operable for service. Therefore, the inspectors concluded the existing periodic testing and maintenance activities performed by the licensee on installed relays and motor starter contactors were adequate. No violations of NRC requirements were identified by the inspectors. Therefore, this URI is closed.

4OA6 Management Meeting

.1 Exit Meeting Summary

On July 24, 2015, the inspectors presented the inspection results to Mr. P. Gardner, and other members of the licensee staff. The licensee acknowledged the issues presented. The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. Several documents reviewed by the inspectors were considered proprietary information and were either returned to the licensee or handled in accordance with NRC policy on proprietary information.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

P. Gardner, Site Vice President
S. Northavol, Vice President Nuclear Fleet Operations
T. Talyor, Vice President Nuclear Oversight
H. Hanson, Jr., Plant Manager
A. Gonnering, Configuration Management Supervisor
M. Kelly, Performance Assurance Manager
M. Lingenfelter, Director of Engineering
K. Scott, Director Site Operations
A. Ward, Regulatory Affairs Manager
R. Zyduck, Design Manager
B. Halvorson, Engineering Supervisor
A. Kouba, Regulatory Affairs Manager
C. Fosaaen, Regulatory Affairs
N. Friebel, Design Engineer
D. Alstad, Design Engineer
E. Watzel, Electrical Design Engineering Supervisor
P. Young, Program Engineering Supervisor

U.S. Nuclear Regulatory Commission

K. O'Brien, Director, Division of Reactor Safety
P. Zurawski, Senior Resident Inspector
P. Voss, Resident Inspector

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

05000263/2015007-01	NCV	Inadequate Quality Assurance Controls for Nitrogen Supply for the AN2 System (Section 1R21.3.b.(1))
05000263/2015007-02	NCV	Failure to Review for Suitability of Application of Safety-Related Relays Installed Beyond Their Service Life (Section 1R21.3.b.(2))

Closed

05000263/2015007-01	NCV	Inadequate Quality Assurance Controls for Nitrogen Supply for the AN2 System (Section 1R21.3.b.(1))
05000263/2015007-02	NCV	Failure to Review for Suitability of Application of Safety-Related Relays Installed Beyond Their Service Life (Section 1R21.3.b.(2))
05000263/2012008-01	URI	Qualification Basis for Safety-Related Relays and Motor Starter Contactors (Section 4OA5)
05000263/2012008-02	URI	Concern with Periodic Design Basis Testing of Installed Relays and Motor Starter Contactors (Section 4OA5)

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 report.

CALCULATIONS

Number	Description or Title	Revision
01-036	Inservice Testing Pump and Valve Acceptance Criteria Rounding Evaluation	48
01-043	Verification of Torus to Drywell Vacuum Breaker Sizing Parameters	0
02-179	MNGP 125 Volt Division. I Battery Calculation	3
04-048	MNGP 250 Volt Division I Battery Calculation	2
05-128	#13 and #16 Battery Charger Sizing	0
06-104	480V MCC to Terminal Voltage Drop	3E
08-077	AOV System Calculation - RCIC	0A
09-192	Reactor Building Composite Profiles for Environmental Qualification	0
10-168	RHR and Core Spray Motor Feeder Cable Sizing	0
10-118	RCIC MOV Functional Analysis	0
11-295	MO-2075 Component Calculation	0
11-326	ND DDGV EPRI PPM Calculation	0
14-001	Monticello Stem Lubrication Study	0
14-057	Evaluation Buried Diesel Oil Overflow Line for Day Tank T-45B	1
14-073	EDG Diesel Oil Hydraulic Model	0
15-014/12	EDG Fuel Oil Piping/Cable Fire Barrier	0
92-220	Instrument Setpoint Calculation, 4.16 Kv Degraded Voltage	2
92-224	Emergency Diesel Generator Loading	006A
93-066	AC Loads Study, Degraded Voltage Setpoint, 1R Transformer, LOCA Load	6
94-094	MCC Starter Coil Pick-Up Voltages & Maximum Cable Lengths	1, 1B
95-049	Monticello Apparent Disc Coefficient of Friction Determination	3
CA 08-157	Combined AC Model Database	000-B
CA-00-003	Response Time Increase of SRV Solenoids	0
CA-00-057	Drywell to Suppression Chamber Differential Pressure Decay Curve for a 1 Inch Diameter Orifice	0
CA-00-104	Intake Structure Minimum Water Level	0A
CA-01-037	Determination of the Maximum Allowable Torque to Open Torus to Drywell Vacuum Breakers	0A
CA-01-053	Evaluation of the Pressure Capacity of a Door	7
CA-01-137	Evaluation of Drywell/Wetwell Vacuum Breakers	0
CA-01-155	Maximum Allowable Leak Rate for the RCIC Minimum Flow Valve Air Accumulator System	1
CA-01-174	Minimum Required RHRSW Pressure at RHR Heat Exchanger	3
CA-01-188	RHR Motor Start Time Evaluation	0
CA-02-002	RCIC Min Flow Line Flow Rate Analysis	0
CA-02-145	HPIC and RCIC NPSH Calculations for Use in EOPs	0
CA-02-197	EQ of Dow Corning Silicone RTV Foam	1

CALCULATIONS

Number	Description or Title	Revision
CA-03-039	SRV Low-Low Setpoint	1
CA-03-041	Setpoint Calc SRV Low-Low Set Inhibit Timer	0
CA-03-06	AOV Component Calculation, CV-2104	3
CA-03-097	HPCI/RCIC Suction Head Height Difference	0
CA-03-199	Sensitivity of EOP Calculations to ECCS Pump Curve Data	0
CA-05-019	NPSH Requirements for Operating ECCS Pumps from the CST	0C
CA-05-124	Hydrogen Generation of #13 & #16 Battery Rooms	15
CA-13-055	Core Spray and LPCI Flow Delivered to Reactor Vessel for Safety Analyses	0
CA-80-020	NPSH Requirements for RHR Pumps	0
CA-91-009	250VDC Fault Current	1
CA-92-224	Emergency Diesel Generator Loading	6
CA-94-017	Calculation of Alternate Nitrogen Operability Leakage Criteria	10
CA-95-099	Determine the Minimum RHR Pump Flow Required During Testing	0
CA-95-116	Stem Thrust Assessment of 3” A/D Gate Valves: MO-2075 & MO-2076	1
CA-96-079	High Energy Line RCIC HELB in the RCIC Room	1
CA-96-169	HPCI and RCIC NPSH Evaluation	3B
CA-97-194	LLRT Test Volumes for the RCIC Air Accumulator Check Valve AI-612	0
CA-99-011	Outlier (Seismic) Evaluation of Service Water Pumps	1
EC15368	RX Bldg Envir for EPU HELB, SBA & Post LOCA	1
EC17914	Motor Control Center Thermal Lag Analysis	0
EC25687	Review of TOL Performance for Auto Initiated MOVs During a Degraded Voltage Condition	0
EC25688	Review of Protective Device Performance for Safety Related Continuous Duty 480V Loads During a Degraded Voltage Condition	0
FBS-0503-1	Fuse and Breaker Coordination Study	2
PRA-CALC-II.SMR.02.001	Makeup Requirements After Scram from 1775 MWth	0
PRA-CALC-II.SPA.02.001	RCIC Min Flow Valve	0
EC22209	Evaluation of Agastat Service Life	0
EC24650	Service Life Evaluation for Select GE HFA Century Series Relays	0
EC25254	Engineering Evaluation Supporting 2000 Cycle Test Basis for Limitorque MOVs	0
EC25683	Service Life Evaluation for GE HFA Century Series Relays	0
EC25710	Service Life Evaluation for Select GE HGA Century Series Relays	0
EC25719	Service Life Evaluation for Reasonable Assurance of Agastat Function	0

CORRECTIVE ACTION DOCUMENTS GENERATED DUE TO THE INSPECTION

Number	Description or Title	Date
01483209	2nd Transmittal did not have All Requested Info	06/17/15
01483311	Calcs for EDG Fuel Oil Mod Needed to be Re-sent	06/22/15
01483808	Material Storage in RCIC Cable Closet	06/23/15
01483828	Bent Rod Hanger on Conduit in RCIC Room	06/23/15
01483833	Typo Corrected on the Receipt Inspection Report from 2012	06/23/15
01484025	No Formal Testing of ECCS Corner Room Sump Capacity	06/24/15
01484043	Inspector Question Response Delay	06/25/15
01484051	Unexpected Absence of Inspector Shadow	06/25/15
01484170	CMTRs not Located- E-SRV & Valve Body & Disc of AO-2382A	06/25/15
01484177	13 Diesel Fuel Cooler Fan Power Cable Potential Damage	06/25/15
01484180	Internal Flood TCOA Scenario Insufficient	06/25/15
01484193	Incorrect Calc Given to NRC	06/25/15
01484193	Calc 02-197 not Taken to Inactive Correctly	06/25/15
01484210	CMTR for Weld Material Q12 not Provided to NRC	06/25/15
01484265	Walkdown Forms not Incorporated into Plant Records	06/26/15
01484265	DOL Walkdown Forms not Incorporated into Plant Records	06/26/15
01484364	Internal Flooding DBD not Consistent with Licensing Basis	06/26/15
01484365	03-006 Apparent Typo Error in Section 6.0	06/26/15
01484534	MOV TOL Calculations at Incorrect Status	06/29/15
01484697	Extraneous Information on NX-8685-4	06/30/15
01484859	Listed Horsepower Wrong on RHRSW Control Drawing	07/01/15
01484919	Procedure 0214 Temperature Controls Needs Enhancement	07/02/15
01485196	RCIC 4120-PM Documentation Enhancement	07/06/15
01485387	8153 Procedure Improvement Opportunities	07/07/15
01485410	Unable to Locate GE SIL 196 Evaluation Supplement 5, 11, 17	07/07/15
01485425	ECCS Corner Room Sump Pump Capacity	07/07/15
01485467	NRC Insp Question Response Delay	07/08/15
01485508	FLEX Charger Mod did not Update Procedure 8153	07/08/15
01485509	ECCS Corner Room Sump Pump Information Differences	07/08/15
01485551	Motor Program Documents not Maintained	07/08/15
01485554	Evaluate Recommendation of GE SIL 196 Supplement 1	07/08/15
01485569	RV-1524 Outlet Pipe Size not in Compliance with B31.1 Code	07/09/15
01485668	Motor Refurb Spec does not Exist for Safety-Related	07/09/15
01485693	Diesel Oil System RV Reaction Loads not In Pipe Analysis	07/09/15
01485697	AR01322841-10 Completed at Incorrect Status	07/09/15
01485786	Delay in Issuing Contract to Support Question Response	07/10/15
01485799	SRV PM Requirements not Transferred to Vendor PM	07/10/15
01486266	Drawing does not Reflect Specific Valves with Shims	07/15/15
01486343	Torus/DW Vacuum Breaker Test Report	07/16/15
01486500	VTMs not Updated to Reflect SLA Results	07/17/15
01486699	Safety Related Relays not Part of the Vendor Contact Program	07/20/15
01486828	16A-K37 Beyond Service Life	07/21/15
01486951	Some Alt N2 Bottles Stored in REC WH not Tagged	07/22/15
01486991	Question on AN2 Bottle Pressure and Gas Quality	07/22/15
01487027	Lack of Procedure Controls for AN2 Bottle Storage	07/22/15
01487139	NRC Question on Qualification of Motor Bearing	07/23/15
01487272	Component Storage in Recv Whse Questioned	07/24/15

CORRECTIVE ACTION DOCUMENTS REVIEWED DURING THE INSPECTION

Number	Description or Title	Date
00621181	RIS-2000-12-Resolution of Generic Safety Issue B-5	08/28/00
00630310	Lack of Ventilation to Diesel Pump Room	08/14/02
01044201	Fuel Oil House has Potential for Hazardous Environment	08/14/06
01169547	RSW Pump Flow Ref Value Discrepancy Exists Between Calculation & Procedure	02/16/09
01182779	#13 DG Small Coolant Leak Getting Worse	05/21/09
01192708	Question Basis for Min RHRSW DP per IST Program	08/07/09
01209786	13 RHRSW Pump September Trends	12/08/09
01229823	P-109C IST Reference Value Change	04/28/10
01233820	Basis Change: Add LR Text and Attribute for OCCW PMRQ's	05/21/10
01238600	V-EF-40B Discharge Flow Out of Specification	06/2510
01242365	V-EF-40B Discharge Flow Out of Specification	07/23/10
01249264	Failed PMT on V-EF-40B	10/07/10
01278466	MO-2075 Excessive Thrust on As-Found VIPER Test	04/01/11
01289417	Possible Deficiency in EQ Testing of Limitorque Part 21	06/06/11
01289887	RV-2-71E Elevated Tailpipe Temps	06/09/11
01291640	RCE Leaking SRV RV-2-71E	08/08/11
01291959	Foreign Material Found in Spare SRV (at NWS)	06/24/11
01293850	Allowable Leakage for HPCI/RCIC Minimum Flow Valves	07/08/11
01312421	Untimely Resolution of CAP 1196513	11/09/11
01332373	2012 CDBI Motor TOLs may Trip w/ Degraded Volt	04/05/12
01332567	2012 CDBI TOL Coordination w DVR	04/06/12
01334146	ACE 2012 CDBI TS Degraded Voltage Time Value	04/17/12
01334248	Potential Margin Reduction from Degraded ECCS Pump Head	11/26/13
01338565	MOV Limiting Stroke Time Margin Issue	05/21/12
01338566	RHRSW Reduced Flow/Head Margin Issue	05/21/12
01338567	RHR Reduced Flow/Head & NSPH/Vortex Concerns	07/15/14
01345964	NRC IN 2012-14 Motor-Operated Valve Inoperable due to Stem-Disc Separation	07/25/12
01350679	P-109C, Reference Value Change	09/06/12
01356651	Discrepancy with Sulzer Info and 4214-PM	10/26/12
01375387	SRV LLS TS Allow Values Conflict w/ SRV Mech Allow Setpoint	03/20/13
01375742	OE: NRC IN 2013-05	03/22/13
01378744	MR Evaluation, “E” SRV	06/28/13
01379613	SRV Actuator Testing may be Non-Conservative	04/19/13
01389246	NRC has Question on Alignment Data for HPCI and RCIC	08/05/13
01390472	OE 248697 Both Divs of RHR Inop From Leak	07/18/13
01411214	MR Evaluation, 13 DG, Non 1E	12/30/13
01417977	Failure of Drywell Vacuum Breaker to Close	02/07/14
01418471	AO-2382A Torus-to-DW Vac Brk Closed Indication Anomaly	02/11/14
01420318	Torus Vacuum Breaker Inadequate PMT	02/25/14
01420700	Small Coolant Leak on #13 DG Radiator	02/28/14
01423951	13 RHRSW Pump Exceeds MR Reliability Criteria	03/24/14
01424260	Future Preconditioning of Vacuum Brkrs Found Unacceptable	03/26/14
01426064	TS 3.6.1.7 has no Actions for Closed Vlv Brkr that Failed STP	04/09/14
01431529	Internal Flooding PAB F.P. Break Control of TCOA Inadequate	06/06/15

CORRECTIVE ACTION DOCUMENTS REVIEWED DURING THE INSPECTION

Number	Description or Title	Date
01434290	Coolant Leak Observed on #13 DG	06/12/14
01438672	Oil Leak Detected on 13 Diesel Generator	07/17/14
01439686	Undefined Term Used in the USAR with Regard to RCIC	11/05/14
01443013	Replacement Alternate N2 System Found Empty	08/14/14
01443073	13 Diesel Generator has a Minor Leak from Header	08/15/14
01443510	OE: 312166 Question Concerning RCIC Cooling Test	08/19/14
01448769	C&D Tech Identifies Issue with Battery Separator Plates	10/01/14
01453481	OE: NRC Part 21 C&D Technologies Batteries	10/29/14
01459466	13 Diesel (G-90) Engine Coolant Leak	12/15/14
01459539	OE: NRC PEN 50675 LaSalle RCIC Unanalyzed Condition	12/15/14
01471379	T-44 Level with 2 Pump Operation after Mod Implementation	03/24/15
01474704	Design Issue Discovered in DOL Separation Modification	04/15/15
01475109	Design Input not Considered for DOL Hydraulic Model	04/17/15
01475179	MO-2075 Exceeded App J Admin Limit	04/18/15
01475653	Leakage Found on RV-2-71E Actuator	04/22/15
01476203	Air Leaks on SRV Bellows Leak Alarm Pressure Switches	04/24/15
01476257	P-160A/B Pipe Unions Found Hand Tight	04/25/15
01477101	MOV Transient Analysis did not Consider TOL Size	04/30/15
01477714	No Formal Calc to Support MOV TOLs	05/05/15
01477916	Invalid AO-2382A Full Open Torque	05/06/15
01477935	CAs for 2012 Violation Inadequate	05/06/15
01478212	Interference on AO-2382A Vacuum Breaker Actuator	05/08/15
01479704	Circuit Protective Device Operation-Sustained Degraded Volt	05/18/15

DRAWINGS

Number	Description or Title	Revision
ES1506100	Fuel Transfer Pump Assembly	A
M-288	Reactor BLDG.-Plan at EL. 896’3”	C
NE-36347-10	#142-480V MCC B42	81
NE-36394-10B	RHRSW Pump P109-C ACB No. 152-507	76
NE-36399-9	Essential Bus Transfer Circuits-Division I	77
NE-36404-4B	RHR Pump P-202C ACB 152-503 Control	76
NE-36438-9	11EDG Diesel Oil Pumps A and C, P-160A and C Control	82
NE-36640-5	250VDC MCC Schedule D311	76
NE-93503-3	HVAC Controls & Interlocks Scheme V201	F
NE-93504-20	EFT System HVAC Annunciator	C
NE-93545	Loop Diagram Exhaust Fans V-EF-40B	4
NF-119034-2-C	#12 Diesel Generator Fuel Oil System	0
NF-36298-1	Electrical Load Flow One Line Diagram	111
NF-36298-2	DC Electrical Load Distribution One Line Diagram	90
NF-36672	Standby Diesel Generators Arrangement & Piping	78
NF-95915-3	Blowdown Control System Division I Elem Diagram	76
NH-170037	Main Control Room CRV/EFT System	81
NH-36049-10	Alternate Nitrogen Supply System	78
NH-36051	Diesel Oil System	84
NH-36241-1	Reactor Pressure Relief	78
NH-36246	Residual Heat Removal System	84

DRAWINGS

Number	Description or Title	Revision
NH-36247	Residual Heat Removal System	85
NH-36251	RCIC (Steam Side)	80
NH-36252	RCIC (Water Side)	79
NH-36664	RHR Service Water & Emergency Service Water Systems	87
NH-36665	Service Water System & Make-up Intake Structure	97
NH-91177	Disc and Post for Vacuum Breaker Valve	C
NQ-74976	Three Hour Fire Barrier 11 EDG Room, EDG Trench	0
NX-15111-1	MNGP Main Steam Safety/Relief Valve, Target Rock Model 7467F, 6”X10”, Outline	E
NX-17496-3	MNGP Protective Relay Cards-4kV	11
NX-7822-22-5A	RCIC Steam Supply Isolation MO-2075 Scheme	A
NX-7831-439	Main Steam Safety/Relief Valves, Target Rock Model 7367F, 6”X10”, Parts List	77
NX-7831-539	SRV Air Actuator Model 7467F	77
NX-7905-77	600 HP RHR Pump Motor	76
NX-8685-4	Funbore Vacuum Breaker Valves	E
NX-9068-37	Outline Induction Motor	F
NX-9235-32	3” 600# Globe Valve Motor Operated	A
NX-9235-43	3” 900# Gate Valve MO-2075 & MO-2076 Carbon Steel Bolted Bonnet	L
NX-9285-5	Fuel Transfer Pump Assembly	0
NX-9525-1	RHRSW Pump Assembly	76
NX-9525-8	RHRSW Pump Open Flange Column Details	76

MISCELLANEOUS

Number	Description or Title	Date or Revision
—	Plant Health Report – RHRSW System	06/10/15
—	Plant Health Report – Emergency Filtration Train	06/18/15
—	Plant Health Report – Reactor Core Isolation Cooling System	06/10/15
—	System Walkdown Observation- EDG Fuel Oil	11/26/13
—	System Walkdown Observation- EDG Fuel Oil	08/28/14
—	System Walkdown Observation- EDG Fuel Oil	12/18/14
—	System Walkdown Observation- EDG Fuel Oil	03/30/15
—	Safety Relief Valve Data Sheets–RV 1523, 1524, 1525, 1526	12/11/14
—	System Health Report - Auto Pressure Relief	06/10/15
—	System Health Report - Diesel Oil System	06/10/15
—	System Health Report - Primary Containment	06/10/15
10040.D5.7	Design Criteria Document – Heating, Ventilation, and Air Conditioning System for the Main Control Room, Emergency Filter Train and Technical Support Center at Monticello Nuclear Generating Plant, Northern States Power	5
2015-01-030	Component Design Basis Inspection (CDBI) Readiness	0
22A1121	Design Specification – Drywell to Suppression Chamber Vacuum Breakers	0
79M070	Design Change to Torus to Drywell Vacuum Breaker	0
98-018	EQ, General Electric Motors (50.49)	1

MISCELLANEOUS

Number	Description or Title	Date or Revision
98-026	Limitorque Motor Operators (50.49)	0
A.3-15-E	Fire Zone 15-E Strategy	7
Contract 940015040	COC- 4(1") Gate CS 800#	01/16/15
DBD T.08	Design Basis for Internal Flooding	3
DBD-B.02.03	Reactor Core Isolation Cooling System	77
DBD-B.03.04	Residual Heat Removal System	7
DBD-B.08.01.03	Residual Heat Removal Service Water System	6
DBD-B.08.13	Control Room Heating, Ventilation and Emergency Filtration System	3
DRF T23-00789-00	GE Letter - Monticello Nuclear Power Station – Response to NMC Question Regarding Impact of Power Rerate on Drywell-to-Suppression Chamber Steam Bypass Leakage	03/25/01
EM7114T	Baldor 1//.75,1760//1460RPM,3PH,60//50Hz	08/08/14
EQ 98-022	General Electric MCCs	0
FBS-0507-1	Fuse/Breaker Coordination Study, P-109C	1
FBS-4030-02-1	Fuse/Breaker Coordination Study, P-160B	0
FBS-4080-51-1	Fuse/Breaker Coordination Study, P-160-D	0
GE-NE-0000-0060-9229-TR-R3	Nuclear Management Company, LLC Monticello Nuclear Generating Plant Extended Power Uprate Task T0400 Containment System Response	3
Heat 001M64068	COC- 1 (21'7") 2" A106 Schedule 80 SMLS Pipe	03/02/15
Heat 00A132529	COC- 2 (45'10") 1"A106 Schedule 80 SMLS Pipe	01/02/15
LOT 59464	CMTR- 100- A105 Nuclear 90 Elbow	07/22/14
MPS-0522	Vacuum Breaker Valves	01/14/86
MPS-0567	Specification Hollow Metal Doors, Frames, Hardware	0
MPS-1010	Piping Materials, Classification and Standards for the MNGP	30
MPS-1100	Specification for the Analysis Piping and Piping Support Systems	11
MPS-2172	Specification for the Procurement of Emergency Diesel System Diesel Oil Transfer Pumps	3
NEDC-32514P	SAFER/GESTR-LOCA Loss of Coolant Accident Analysis	1
NFPA70	National Electric Code	2011
NSP-43-103	Specification for Vacuum Breaker Replacement Parts	0
NSP-53-103	Wetwell to Drywell Vacuum Breaker Replacement Parts	1
OE Eval	Part 21 on C&D Technologies Battery Cells – Misaligned Separators	01/15/15
P.O.49546	Schulz Certificate of Conformance, RHR Motor Overhaul	04/13/15
P.O. 205-AB841	COC- Main Steam Safety Relief Valve	11/02/74
P.O. 56112	COC-Pressure Relief Valve	02/27/15
SCR 02-0324	USAR 5.2.1.2.3, "Vent and Vacuum Relief System, Rev. 19"	0
SCR 14-0541	EC 23085 EDG Fuel Oil Train Separation Screening	4
SRI 96-003	Locked Valve Program Improvements and Associated USAR Changes	0
TC-15991	RHRSW 13 Motor/Pump Curves	12/08/11
TP-ESI506100	Functional Test Procedure Fuel Transfer Pump/Motor Asm	1

MODIFICATIONS

Number	Description or Title	Date or Revision
DC79M070	Modify Drywell to Torus Vacuum Breakers, Add 1 and Add 2	0
EC11690	Column Gaskets not Required on RHRSW Pumps	0
EC17503	RHRSW Pump Impeller Material Change	0
EC19903	Restoration of Motor Overload Margins in MCC-134/144	0
EC22104	EDG Fuel Oil Transfer System Modification Support	7/10/14
EC23085	EDG Fuel Oil Train	0
EC23805	EDG Fuel Oil Train Separation	0
EC25684	Drywell to Torus Vacuum Breakers- Remove Upper Portion of Test Actuator Piston Rod	0
EC25733	Alternate Nitrogen Bottle Change-out Check Valves	0
ECN25569	EDG Fuel Oil Train Separation	0

OPERABILITY EVALUATIONS

Number	Description or Title	Date
01430505-01	No Analysis Found for HELB at MO-2078 “RCIC Steam Supply” and its Effect on MCC-311	05/29/14
01431915-01	Do the ESW and DGN (FSW & RSW also) Systems Remain Operable While Bypassing the Basket Strainers for Periodic Cleaning	06/14/14
01442471-01	RCIC High Steam Flow dp Switch Found Out of Tolerance	08/15/14
01478212	Past Operability AO-2382A Vacuum Breaker	06/25/15

PROCEDURES

Number	Description or Title	Revision
0036-01	ECCS Emergency Bus Undervoltage Test and ECCS Loss of Normal Auxiliary Power Test	30
0137-A	LLRT-LRM-Makeup Flow Method	6
0197-01	# 13 250 Vdc Battery Capacity Test	24
0255-08-ID-03	RCIC CV-2104 Air Accumulator Check Valve (AI-612) Leak Rate Test	20
0294	SRV Position Indication and Low Set System Instrumentation Checks	29
1136	RHR Heat Exchanger Efficiency Test	33
1374	Monthly Operability Test of No.13 Diesel Generator	19
1388	13 DG Auto Start/Loading Test	13
1401-01	Locked Valve Alignment	23
1444	Pre and Post Severe Weather Inspection Checklist	10
4050-PM	Torus to Drywell Vacuum Breaker Seal Replacement	8
4280-03-PM	SRV Refurbishment and As-Left Steam Testing	40
4525-PM	NO. 13 & 16 Battery Charger Preventive Maintenance	12
8153	Powering Div. II 250VDC Battery Chargers from #13 Diesel	5
A.6	Acts of Nature	52
B.02.03-01	Reactor Core Isolation Cooling	5
B.03.04-01	Residual Heat Removal System	12

PROCEDURES

Number	Description or Title	Revision
B.07.01-02	Operations Manual	21
B.08.01.03-01	RHR Service Water System	10
B.08.01.03-05	RHR Service Water System - System Operation	46
B.08.07-05	Extreme Cold Weather Procedure	45
B.08.08-01	Plant Communications System	6
B.08.08-02	Plant Communications System	4
B.08.11-05	Diesel Oil System	37
B.08.13-05	Control Room H&V and EFT – System Operation	29
B.09.15-01	Non-Essential Diesel Generator	5
B.09.15-05	Non-Essential Diesel Generator	15
C.4-B.08.07.A	Ventilation System Failure – Abnormal Procedures	28
C.4-B.09.02.A	Abnormal Procedure, Station Blackout	46
C.4-I	Plant Flooding	14
EWI-08.13.02	Motor Program	10
FP-E-MOD-02	Engineering Change Control	16
FP-E-MOD-08	Engineering Change Notices	8
FP-E-MOD-10	Modification Turnover and Closeout	13
FP-E-RTC-02	Equipment Classification	11
FP-E-SE-05	System Engineering Walkdowns	0
FP-PA-OE-01	Operating Experience Program	21
MPS-1124	Common Motor Repair and Refurbishment Specification	1
MWI-3-M-2.01	AC Electrical Load Study	14
NWS-R-26	NWS Technologies Repair of Target Rock 3 Stage Main Steam Safety Relief Valves	1
NWS-T-15	NWS Safety Valve Test Procedure for Monticello Nuclear Plant Target Rock 67F Main Steam Safety Relief Valves	7
OSP-AN2-0567	Monitor ADS Pneumatic Supply	7
OWI-02.03	Operator Rounds	63
OWI-03.07	Time Critical Operator Actions	10

WORK DOCUMENTS

Number	Description or Title	Date
00049081	0114 RCIC System Test RX Press <165 psig Cycle	05/29/15
00061207	V-EF-40B, Clean, Repair or Replace Flow Element	11/09/10
00106906	Preoperational Testing Drywell to Torus Vacuum Breakers	04/01/01
00106908	Preoperational Testing Drywell to Torus Vacuum Breakers	04/01/01
00113519	SRV Pilot and 2nd Stage Pilot Valve Assembly Inspections, Refurbishment, and Steam Testing	03/15/02
00123486	PM 4280-1, RV-2-71E	05/21/03
00123487	PM 4280-2, RV-2-71E	05/21/03
00143657	SRV Pilot Valve Assembly (Pilot & 2nd Stage) Change Out	05/25/00
00143658	SRV Main Stage Valve Assembly	02/24/00
00387708	Test Data Evaluation for AOV CV-2104 Rising Stem Valve	04/10/13
00390096	PI-1982, Install Remaining 3 Anchor Bolts in Stanchion	09/09/09
00394602	MO-2075 Disassembly/Inspection	04/12/11

WORK DOCUMENTS

Number	Description or Title	Date
00402785	P-109C, Rebuild Spare per 4214-PM	02/16/11
00406241	V-EF-40B Discharge Flow Out of Specification	09/10/10
00414155	TD-152-503, Perform Relay PM	07/15/11
00414333	FI-9195 has Low Flow for V-EF-40B	02/02/11
00415157	TD-4KVB-21, Perform Breaker PM	12/21/12
00416774	Replace 13RHR Pump Cables	06/28/13
00422669	PMT Failure for EF-40B	07/20/11
00423219	V-EF-40B Discharge Flow is Below Spec.	06/04/11
00430036	Replace Vacuum Breaker Air Lines per EC 20501	05/31/13
00440830	MECH - Rd 1 4120-PM on S-200 (Terry Turbine) - All Steps	05/24/15
00441556	TD-Bus 15 Relays, Perform 4850-915 PM	05/21/13
00441564	TD-4KV Bus-15, Perform PM 4858-15	05/15/13
00458886	0255-08-111-1 RCIC Comprehensive PMP & VLV Tests	11/11/13
00462919	ELEC-D-52 Charger, Perform Charger 4525-PM	06/29/15
00463771	Re-Build P-202C	05/12/14
00476238	Comprehensive 13 RHR PMP & VLV Tests	12/09/14
00490342	0255-05-III-3A Comp 13 RHRSW Pump & Valve Test	09/10/14
00490607	Check Stroke Capabilities of Actuators	05/24/15
00490645	OSP-APR-0568 SRV Functional Tests	05/23/15
00490709	0255-07-IB-4 MS SRV Pilot Valve Assembly As-Found Check	05/05/15
00490762	Reactor Coolant Pressure Boundary Leak Test	05/24/15
00490806	0255-08-ID-3 RCIC CV-2104 Air Accum Check Valve LRT	05/11/15
00490905	0214 Drywell to Torus Vacuum Breaker Cycle Leakage Check	05/27/15
00490910	0127 Drywell to Torus Vacuum Breaker	05/06/15
00490910	Drywell-Torus Vacuum Breaker Inspection, Functional Tests, & Calibration Maintenance of Position Indication & Alarm System	05/14/15
00490947	0137-07-A RX STM SUP VLV LLRT W/RX Press By Air	04/23/15
00490969	PM 4900-1 for MO-2075	02/08/04
0491182	SRV Position Indication and Low Set System Instrumentation Checks	05/11/15
00491185	0255-07-IB-1 Main Steam AM SRV Bench Checks & Inspection	05/05/15
00491186	0131 Safety Relief Valve Bellows Monitor Check	04/27/15
00491211	# 13 250 Vdc Battery Capacity Test	04/14/15
00491333	0255-03-IA-2B Core Spray Valve Position Indication Test	05/24/15
00497230	Investigate Repair as Required AO-2382A	05/13/15
00504345	0255-08-IA-1 RCIC Quarterly Pump and Valve Tests	02/14/15
00504629	0269 Fire Protection System Valve Check	06/17/15
00505386	EC 23085 EDG Fuel Oil Train Separation and Pre-Op Testing	05/09/15
00505603	RHR Loop A Quarterly Pump and Valve Tests	03/02/15
00505605	02551-05-IA-1-1“A” RHRSW QRTLY PMP & Valve Test	06/06/15
00508701	Inspect and Rebuild DW to Torus Vacuum Bkr Air Actuators	05/14/15
00509926	0465-01 DIV 1 and 2 EFT Monthly Operation	05/24/15

WORK DOCUMENTS

Number	Description or Title	Date
00510950	0143 Drywell to Torus Monthly Vacuum Breaker Check	06/12/15
00510958	0255-04-IA-1-1 RHR Loop A Quarterly Pump and Valve Tests	06/08/15
00511299	1374 Monthly Oper Test of No.13 Diesel	06/15/15
00511829	0465-01 Div 1 and 2 EFT Monthly Operation	06/24/15
00513283	Operations TRB Side CK List Weekly Procedure	07/16/15

LIST OF ACRONYMS USED

ADAMS	Agencywide Document Access Management System
AN2	Alternate Nitrogen
AOV	Air-Operated Valve
ANSI	American National Standards Institute
AR	Action Request
CAP	Corrective Action Program
CDBI	Component Design Bases Inspection
CFR	*Code of Federal Regulations*
EDG	Emergency Diesel Generator
EFT	Emergency Filtration Train
EQ	Environmental Qualifications
GE	General Electric
HELB	High Energy Line Break
IEEE	Institute of Electrical & Electronics Engineers
IMC	Inspection Manual Chapter
IN	Information Notice
IST	Inservice Testing
LERF	Large Early Release Frequency
LOCA	Loss of Coolant Accident
MOV	Motor-Operated Valve
NCV	Non-Cited Violation
NPSH	Net Positive Suction Head
NRC	U.S. Nuclear Regulatory Commission
PARS	Publicly Available Records System
PRA	Probabilistic Risk Assessment
psig	Pounds Per Square Inch Gauge
RCIC	Reactor Core Isolation Cooling
RHR	Residual Heat Removal
RIS	Regulatory Issue Summary
SBO	Station Blackout
SDP	Significance Determination Process
SIL	Service Information Letter
SRV	Safety Relief Valve
SSC	Systems, Structures, and Components
TIA	Task Interface Agreement
TOL	Thermal Overload
TS	Technical Specification
USAR	Updated Safety Analysis Report
URI	Unresolved Item
Vac	Volts Alternating Current
Vdc	Volts Direct Current

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Sincerely,

/RA/

Christine A. Lipa, Chief
Engineering Branch 2
Division of Reactor Safety

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