UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
245 PEACHTREE CENTER AVENUE NE, SUITE 1200
ATLANTA, GEORGIA 30303-1257

July 23, 2015

Mr. Steven D. Capps
Site Vice President
Duke Energy Carolinas, LLC
McGuire Nuclear Station
MG01VP/12700 Hagers Ferry Rd
Huntersville, NC 28078

SUBJECT: MCGUIRE NUCLEAR STATION – U. S. NUCLEAR REGULATORY COMMISSION COMPONENT DESIGN BASES INSPECTION REPORT 05000369/2015007 AND 05000370/2015007

Dear Mr. Capps:

On June 5, 2015, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your McGuire Nuclear Station Units 1 and 2 and discussed the results of this inspection with yourself and members of your staff. In addition, on July 20, 2015, the inspectors conducted a final exit meeting via telephone with Mr. Capps and other members of your staff. Inspectors documented the results of this inspection in the enclosed inspection report.

NRC inspectors documented two findings of very low safety significance (Green) in this report. These findings involved violations of NRC requirements.

If you contest the violations or significance of these non-cited violations (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 II; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at the McGuire Nuclear Station.

In accordance with Title 10 of the *Code of Federal Regulations* 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/

Jonathan H. Bartley, Chief
Engineering Branch 1
Division of Reactor Safety

Docket Nos.: 50-369, 50-370
License Nos.: NPF-9, NPF-17

Enclosure:
Inspection Report 05000369, 370/2015007
w/Attachment: Supplementary Information

cc: Distribution via Listserv

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NAME	**T. FANELLI**	**G. OTTENBERG**	**R. PATTERSON**	**D. MAS-PANERANDA**	**S. GARDNER**	**FEHRHARDT**	**SHERRICK**
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U.S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket No.:	50-369, 50-370
License No.:	NPF-9, NPF-17
Report Nos.:	05000369/2015007, 05000370/2015007
Licensee:	Duke Energy Carolinas, LLC
Facility:	McGuire Nuclear Station, Units 1, 2
Location:	Huntersville, NC 28078
Dates:	April 27, 2015 – June 5, 2015
Inspectors:	T. Fanelli, Reactor Inspector (Lead) G. Ottenberg, Senior Reactor Inspector D. Mas-Peñaranda, Reactor Inspector R. Patterson, Reactor Inspector S. Herrick, Reactor Inspector S. Gardner, Contractor
Approved by:	Jonathan H. Bartley, Chief Engineering Branch 1 Division of Reactor Safety

Enclosure

SUMMARY

IR 05000369/2015007, 05000370/2015007; 4/27/2015 – 6/5/2015; McGuire Nuclear Station, Units 1, 2; Component Design Bases Inspection.

A team of five Nuclear Regulatory Commission (NRC) inspectors from Region II, and one NRC contractor conducted this inspection. Two Green non-cited violations (NCVs) were identified. The significance of inspection findings is indicated by their color (Green, White, Yellow, or Red) using the NRC Inspection Manual Chapter (IMC) 0609, "Significance Determination Process," dated April 29, 2015. All violations of NRC requirements are dispositioned in accordance with the NRC's Enforcement Policy, dated February 4, 2015. 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.

NRC-Identified and Self-Revealing Findings

Cornerstone: Mitigating Systems

- Green: The team identified a Green non-cited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," consisting of two examples. In one example, the licensee failed to verify the adequacy of GE model TED molded case circuit breaker (MCCB) design. In the second example, the licensee failed to verify the adequacy of Eaton model HFB MCCB design. The licensee initiated Action Request (AR) 01929605 and AR 193674, which determined the systems were operable because upstream protective devices provided protection from a failed HFB and/or TED MCCBs, and that the HFB and TED MCCBs would be replaced with MCCBs that have adequate ratings.

  The licensee's failure to design the Class 1E electric system MCCBs in accordance with IEEE 308-1971 Sections 4.1 and 5.3.5 was a performance deficiency. The team determined that the performance deficiency was more than minor because it was associated with the Design Control attribute of the Mitigating Systems Cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The finding was determined to be of very low safety significance (Green) because the deficiency affected the design or qualification of a mitigating structure, system, or component (SSC), but the SSC maintained its operability or functionality. No cross-cutting aspect was applicable because the finding was not indicative of current licensee performance.
  (Section 1R21.2.b.1)

- Green: The team identified a Green non-cited violation of 10 CFR Part 50, Appendix B, Criterion XI, "Test Control," consisting of two examples. In one example, the licensee failed to scope some Class 1E molded case circuit breakers (MCCBs) into the Class 1E MCCB testing program. In the second example, the licensee's test procedure pre-conditioned the Class 1E MCCBs before testing their safety function. The licensee initiated Action Request (AR) 1936760 and AR 01934403, which determined the systems were operable because an engineering review of previous TED breaker testing and PM's has not shown a trend of degradation of the breakers ability to perform its function. In addition, the licensee planned develop a more extensive and adequate testing program.

The licensee's failure to perform adequate MCCB testing in accordance with IEEE 308-1971, Section 6.3, "Periodic Equipment Tests," was a performance deficiency. The team determined that the performance deficiency was more than minor because it was associated with the Equipment Performance attribute of the Mitigating Systems Cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The finding was determined to be of very low safety significance (Green) because the deficiency affected the design or qualification of a mitigating structure, system, or component (SSC), but the SSC maintained its operability or functionality. No cross-cutting aspect was applicable because the finding was not indicative of current licensee performance. (Section 1R21.2.b.2)

REPORT DETAILS

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R21 Component Design Bases Inspection (71111.21)

.1 Inspection Sample Selection Process

The team selected risk-significant components and related operator actions for review using information contained in the licensee's probabilistic risk assessment. In general, this included risk significant structures, systems, and components (SSCs) and operator actions that had a risk achievement worth factor greater than 1.3 or Birnbaum value greater than 1E-6. The sample included 16 SSCs, 2 of which were associated with containment large early release frequency (LERF), and 5 operating experience (OE) items.

The team performed a margin assessment and a detailed review of the selected risk-significant components and associated operator actions to verify that the design bases had been correctly implemented and maintained. Where possible, this margin was determined by the review of the design basis and Updated Final Safety Analysis Report (UFSAR). This margin assessment also considered original design issues, margin reductions due to modifications, or margin reductions identified as a result of material condition issues. Equipment reliability issues were also considered in the selection of components for a detailed review. These reliability issues included items related to failed performance test results, significant corrective action, repeated maintenance, maintenance rule status, Inspection Manual Chapter 0326 conditions, NRC resident inspector input regarding problem equipment, system health reports, industry OE, and licensee problem equipment lists. Consideration was also given to the uniqueness and complexity of the design, OE, and the available defense-in-depth margins. An overall summary of the reviews performed and the specific inspection findings identified is included in the following sections of the report.

.2 Component Reviews

a. Inspection Scope

SSCs

- Refueling Water System (FW)
- Diesel Generator Engine Fuel Oil System (FD) and Auxiliary Fuel Oil System (FS)
- SSCs preventing internal flooding and hazardous environmental conditions of these systems: 125VDC Vital I&C (EPL), 125VDC Aux Control Power (EPK), and 250VDC Aux Power (EPJ)
- Nuclear Service Water System (RN) Sources to the Auxiliary Feedwater System (CA)
- Diesel Generator Engine Cooling Water System (KD)
- Emergency Diesel Generator (EDG) Load Sequencer (EQB) and Safe Shutdown Facility (SSF) Diesel Load Sequencer

- RN System Motor Operated Valves (0RN283AC, 0RN284B, and 1RN297B)
- 4.16KVAC Essential (Blackout) Aux Power system (ETA)
- Transformer 4160V/600V 1ELXA
- Residual Heat Removal System (ND) motor-operated valve 1ND58A
- Seal Water Injection Filter 1A
- Safety Injection System (NI) motor operated valve1NI136B
- Component Cooling Water Heat Exchanger 1A (KC)
- Air Operated Valves1RN161B

Components with LERF Implications

- Steam Generator Power-Operated Relief Valves (PORVs) – [SV-11,7, 13, 19]
- Auxiliary Feedwater (CA) to Turbine Driven Auxiliary Feedwater Pump Start Circuits

For the 16 components listed above, the team reviewed the plant technical specifications (TS), UFSAR, design bases documents, and drawings to establish an overall understanding of the design bases of the components. Design calculations and procedures were reviewed to verify that the design and licensing bases had been appropriately translated into these documents. Test procedures and recent test results were reviewed against design bases documents to verify that acceptance criteria for tested parameters were supported by calculations or other engineering documents, and that individual tests and analyses served to validate component operation under accident conditions. Maintenance procedures were reviewed to ensure components were appropriately included in the licensee's preventive maintenance program. System modifications, vendor documentation, system health reports, preventive and corrective maintenance history, and corrective action program documents were reviewed (as applicable) in order to verify that the performance capability of the component was not negatively impacted, and that potential degradation was monitored or prevented. Maintenance Rule information was reviewed to verify that the component was properly scoped, and that appropriate preventive maintenance was being performed to justify current Maintenance Rule status. Component walkdowns and interviews were conducted to verify that the installed configurations would support their design and licensing bases functions under accident conditions, and had been maintained to be consistent with design assumptions.

Additionally, the team performed the following specific reviews:

- The team reviewed operator actions associated with the transfer of the emergency core cooling systems to cold leg recirculation mode during a postulated design basis large break loss of coolant accident. This review included verification of operator actions required due to the effects of a safe shutdown earthquake, including a loss of instrument air supply to air powered equipment. The team performed interviews with engineering and operations staff to discuss operations staffing and response during the event as well as the effect of recent modifications to the initiation of containment spray cooling.

b. Findings

b.1 Failure to Verify Protection System DC Molded Case Circuit Breaker Ratings:

Introduction: The team identified a Green non-cited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," consisting of two examples. In one example,

the licensee failed to verify the adequacy of GE model TED molded case circuit breaker (MCCB) design. In the second example, the licensee failed to verify the adequacy of Eaton model HFB MCCB design.

Description: The team identified two examples of a performance deficiency related to the licensee's design of Class 1E power circuits using molded case circuit breakers (MCCBs) since installation in approximately 1981. McGuire's UFSAR Section 8.1.4, "Design Criteria," for the Electric Power Systems, stated, in part, "In the design of all Essential Auxiliary Power Systems the criteria set forth in …, IEEE 308-1971…, have been followed. Standard IEEE 308-1971 Section 4.1 "General." stated, in part, "the Class IE electric systems shall be designed to assure that any design basis events [such as single equipment malfunctions, …, component failure, or circuit fault that can cause multiple equipment malfunctions] listed in Table 1 will not cause: (1) A loss of electric power to a number of engineered safety features (ESF), surveillance devices, or protection system devices…" In addition, Section 5.3.5 "Protective Devices." stated, in part, "protective devices shall be provided to isolate failed equipment automatically."

Example 1: The team noted that calculation MCC-1381.05-00-0214, "Unit 1 and 2, 125VDC Vital I&C Power System (EPL) Short Circuit Analysis," Rev. 7, identified that the Class 1E 125VDC distribution panel MCCBs, GE model TED MCCBs in the EVDA power distribution panel, were Underwriters Laboratories (UL) rated for a 10,000-ampere interrupt rating. Further, the calculation identified the available fault current at the TED MCCBs as high as 12,539 amperes. With this available fault current, these MCCBs have the potential to fail catastrophically when subjected to the calculated fault current. The design of the TED MCCBs would not isolated failed equipment, and thus could cause upstream protective devices to actuate resulting in the loss of a train of ESF components.

Example 2: Calculation MCC-1381.05-00-0214 identified that the main power feeder Eaton model HFB MCCBs that provide power to the TED MCCBs have available fault currents higher than 12,539 amperes because they are closer to the power source. The team noted that the original technical data sheets from Westinghouse and later data sheets from Eaton, who purchased the Westinghouse product line, both commercially UL rated these MCCBs at 10,000-amperes. The licensee could not demonstrate that the HFB MCCBs were qualified for fault currents greater than 10,000-amperes. With the documented UL rating, these MCCBs could catastrophically fail when subjected to the available fault currents. The design of the HFB MCCBs may not isolated failed equipment, and thus could cause upstream protective devices to actuate resulting in the irreparable loss of a train of ESF components.

Analysis: The licensee's failure to design the Class 1E electric system MCCBs in accordance with IEEE 308-1971 Sections 4.1 and 5.3.5 was a performance deficiency. The performance deficiency was determined to be more than minor because it was associated with the Design Control attribute of the Mitigating Systems Cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, inadequate design and verification of MCCBs in the Class 1E electric system failed to ensure the availability, reliability, and capability of the ESF components. The team used IMC 0609, Att. 4, "Initial Characterization of Findings," issued June 19, 2012, for Mitigating Systems, and IMC 0612, App. A, "The Significance Determination Process (SDP) for Findings At-Power," issued June 19, 2012, and

determined the finding to be of very low safety significance (Green) because the finding was a deficiency affecting the design or qualification of a mitigating structure, system, or component (SSC), and the SSC maintained its operability or functionality. This finding was not assigned a cross-cutting aspect because the issue did not reflect current licensee performance.

Enforcement: Title 10 CFR Part 50, Appendix B, Criterion III, "Design Control," required, in part, that "design control measures shall provide for verifying or checking the adequacy of design." Contrary to the above, since 1981, the licensee failed to establish design control measures to provide for verifying or checking the adequacy of design. Specifically, the licensee's design control measures failed to verify the adequacy of GE model TED and Eaton model HFB molded case circuit breakers in the Class 1E electric system. The licensee determined the systems were operable because upstream protective devices provided protection from a failed HFB and/or TED MCCBs, and the HFB and TED MCCBs would be replaced with MCCBs that have adequate ratings. Because this violation was of very low safety significance (Green), and the examples were entered into the licensee's corrective action program as Action Request (AR) 01929605 and AR 1936741, this violation is being treated as an NCV, consistent with Section 2.3.2 of the NRC Enforcement Policy. (NCV 05000369/2015007-01, 05000370/2015007-01, Failure to Verify Protection System DC Molded Case Circuit Breaker Ratings.)

b.2 Failure to Perform Adequate Periodic Testing of Molded Case Circuit Breakers

Introduction: The team identified a Green non-cited violation of 10 CFR Part 50, Appendix B, Criterion XI, "Test Control," consisting of two examples. In one example, the licensee failed to scope some Class 1E molded case circuit breakers (MCCBs) into the Class 1E MCCB testing program. In the second example, the licensee test procedure pre-conditioned the Class 1E MCCBs before testing their safety function.

Description: The team identified two examples of a performance deficiency related to the licensee's test program for safety related MCCBs that was established in 1991. McGuire's UFSAR Section 8.1.4, "Design Criteria," for the Electric Power Systems, stated, in part, "In the design of all Essential Auxiliary Power Systems, the criteria set forth in …, IEEE 308-1971…, have been followed." Section 1 "Scope" of IEEE 308-1971, stated, in part, "this standard applies to those parts of the electric systems …that provide electric power to the Class IE electric equipment. These systems consist of …distribution equipment and components (e.g., transformers, switchgear …), and instrumentation and controls (e.g., relays, meters, switches, control devices)." Standard IEEE 308-1971 Section 6.3 "Periodic Equipment Tests," specified, in part, "tests shall be performed at scheduled intervals to:

(1) Detect the deterioration of the system toward an unacceptable condition.
(2) Demonstrate that standby power equipment and other components that are not exercised during normal operation of the station are operable."

Example 1: The team determined that the MCCB test program excluded safety related DC panel board MCCBs. Section 401.7 of Nuclear System Directive 401, "Maintenance and Testing of Class QA1 and QA5 AC and DC Molded Cases Circuit Breakers," dated February 8, 2011, excluded certain Class 1E MCCBs from the periodic test program that were included in the scope of IEEE 308-1971. The team determined that the excluded

MCCBs were required to be periodically tested to detect deterioration toward an unacceptable condition.

Example 2: The team identified that the licensee's test procedure, IP/0/A/3190/030, "Molded Case Circuit Breaker Inspection and Functional Test," Rev. 44, established steps that cleaned, cycled, and megger tested MCCBs prior to testing the trip function. The team determined that the procedure cycled the MCCBs a number of times prior to testing the trip function. NRC Information Notice (IN) 96-24, "Preconditioning of Molded Case Circuit Breakers before Surveillance," specified, in part, "when needed, they [MCCBs] must rapidly isolate a faulted or overloaded circuit to prevent equipment damage. Therefore, for the safe operation of the electrical distribution system equipment of a nuclear power plant, it is important to periodically verify their continued reliability" and "the practice of preconditioning (e.g. by manually cycling the breaker) before testing defeats the purpose of the periodic test. Such preconditioning does not confirm continued operability between tests nor does it provide information on the condition of the circuit breaker for trending purposes." The team determined that the test procedure failed to test the as-found safety function, and thus masked from detection MCCB deterioration toward an unacceptable condition, which does not meet the intent of IEEE 308-1971, Section 6.3.

Analysis: The licensee's failure to perform adequate MCCB testing in accordance with IEEE 308-1971, Section 6.3 was a performance deficiency. The performance deficiency was determined to be more than minor because it was associated with the Equipment Performance attribute of the Mitigating Systems Cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, with inadequate periodic testing to detect deterioration and to demonstrate continued operability, the likelihood that these MCCBs will unpredictably fail when called upon increases with time in service. The team used IMC 0609, Att. 4, "Initial Characterization of Findings," issued June 19, 2012, for Mitigating Systems, and IMC 0612, App. A, "The Significance Determination Process (SDP) for Findings At-Power," issued June 19, 2012, and determined the finding to be of very low safety significance (Green) because the finding was a deficiency affecting the design or qualification of a SSC, and the SSC maintained its operability or functionality. This finding was not assigned a cross-cutting aspect because the issue did not reflect current licensee performance.

Enforcement: Title 10 CFR 50, Appendix B, Criterion XI, "Test Control," stated, in part, "a test program shall assure that all testing required to demonstrate that structures, systems, and components will perform satisfactorily in service is identified and performed in accordance with written test procedures which incorporate the requirements and acceptance limits contained in applicable design documents." Contrary to the above, since 1991, the licensee failed to assure that all testing required to demonstrate that SSCs would perform satisfactorily in service was identified and performed in accordance with written test procedures that incorporated the requirements and acceptance limits contained in applicable design documents. Specifically, the licensee failed to assure that all testing required to demonstrate that the safety related MCCBs would perform satisfactorily in service was accomplished in accordance with the acceptance limits contained in IEEE 308-1971. The licensee's determined the systems were operable because an engineering review of previous TED breaker testing and PM's has not shown a trend of degradation of the breakers ability to perform its function. In addition, the licensee would develop a more extensive and adequate testing program.

Because this violation was of very low safety significance (Green) and the examples were entered into the licensee's corrective action program as AR 1936760 and AR 01934403, this violation is being treated as an NCV consistent with Section 2.3.2 of the NRC Enforcement Policy. (NCV 05000369/2015007-02, 05000370/2015007-02, Failure to Perform Adequate Periodic Testing of Molded Case Circuit Breakers.)

.3 Operating Experience

a. Inspection Scope

The team reviewed five operating experience issues for applicability at the McGuire Nuclear Station. The team performed an independent review of these issues and, where applicable, assessed the licensee's evaluation and dispositioning of each item. The issues that received a detailed review by the team included:

- Westinghouse NSD-TB-91-07-R1, "Over pressurization of RCP 11 Seal Leak off Line"
- Operating experience on Complex Programmable Logic Device (CPLD) Based Solid State Protection System (SSPS) Cards (EGM 14-002, "Dispositioning Westinghouse Pressurized Water Reactor Licensee Noncompliance with 10 CFR 50.59, "Changes, Tests, and Experiments," for the Installation of Complex Programmable Logic Device (CPLD) Based Solid State Protection System (SSPS) Cards")
- NRC Information Notice No. 90-25, "Loss of Vital AC Power With Subsequent Reactor Coolant System Heat-up"
- NRC IE Circular No. 79-22, "Stroke Times for Power Operated Relief Valves"
- NRC Information Notice No. 96-27, "Potential Clogging of High Pressure Safety Injection Throttle Valves During Recirculation"

b. Findings

No findings were identified.

4OA6 Meetings, Including Exit

On June 5, 2015, the team presented the inspection results to Mr. Capps and other members of the licensee's staff. In addition, on July 20, 2015, the inspectors conducted a final exit meeting via telephone with Mr. Capps and other members of your staff. The inspectors verified that no proprietary information was retained by the inspectors or documented in this report.

4OA7 Licensee-Identified Findings

The following violation of very low safety significance (Green) was identified by the licensee and is a violation of NRC requirements, which meets the criteria of the NRC Enforcement Policy for being dispositioned as a Non-Cited Violation.

Title 10 CFR 50, Appendix B, Criterion III, “Design Control,” required, in part, that “design control measures shall provide for verifying or checking the adequacy of design, such as by the performance of a suitable testing program.” The McGuire Updated Final Safety Analysis Report, Table 1-4, “Regulatory Guides” stated, in part, “Reg. Guide 1.53 - Application of the Single-Failure Criterion to Nuclear Power Plant Protection System (Rev. 0) [was] Adopted.” Regulatory Guide (RG) 1.53 specified that, subject to it’s regulatory positions, “IEEE 379-1972 (IEEE Trial Use Guide for the Application of the Single-Failure Criterion to Nuclear Power Generating Station Safety Systems) provides an adequate interim basis for complying with Section 4.2 of IEEE 279-1971.” Standard IEEE 379-1972 Section 3 “Philosophy” specified, in part:
“(2) Detectability. All potential single failures are detectable failures - detectable by periodic tests, anomalous indications, or by alarms.
(3) Nondetectability. For the purpose of analysis, all potential nondetectable failures will be identified and all system potential single failures will be considered to be coincident with any and all combinations of nondetectable failures.”
Standard IEEE 379-1972 Section 5.2 “Undetectable Failures” specified, in part, “In the single-failure analysis all potential undetectable failures should be identified… When undetectable failures are identified, the following courses of action are available:
(1) The preferred course is to redesign the protection system or the test scheme to eliminate potential undetectable failures, or
(2) In the analysis of the effect of each single failure, all potential undetectable failures must be assumed to be in their failed mode”

Contrary to the above, since original startup, the interlocks for the McGuire ND system piggyback motor operated valves and NI miniflow motor operated valves were not included in the periodic test program, nor did the analysis identify undetectable failures assumed to be in their failed mode. The inspectors determined that the licensee’s failure to account for undetectable failures in a single failure analysis as specified by IEEE 379-1972, was a performance deficiency. The performance deficiency was determined to be more than minor because it was associated with the Equipment Performance attribute of the Mitigating Systems Cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. In accordance with IMC 0609, Appendix A, the issue was determined to be of very low safety significance (Green) because the SSC maintained its operability or functionality. This issue was documented in the licensee’s corrective action program as AR 01906228.

ATTACHMENT: SUPPLEMENTARY INFORMATION

SUPPLEMENTARY INFORMATION

KEY POINTS OF CONTACT

Licensee personnel:
A. Dewhurst, Civil Design Contractor
B. Meyer, Principal Nuclear Engineer
B. Richards, Sr. Nuclear Engineer
C. Lee, Mgr. Nuclear Engineer
C. Riddle, Lead Nuclear Eng. Technologist
D. Painter, Principal Nuclear Engineer
G. Cutri, Lead Nuclear Engineer
J. Brady, Nuclear Licensing Consultant
J. Herrick, Lead Nuclear Engineer
J. Policke, Principal Nuclear Engineer
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K. Norris, Lead Nuclear Eng. Technologist
M. Hunt, Mgr. Nuclear Engineering
M. Weiner, Principal Nuclear Engineer
N. Kunkel, Director Nuclear Engineering
S. Andrews, Sr. Nuclear Engineer
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J. Worosilo, Senior Project Engineer, Projects Branch 1, Division of Reactor Projects

LIST OF ITEMS OPENED, CLOSED, DISCUSSED, AND UPDATED

Opened and Closed

05000369, 370/2015007-01	NCV	Failure to Verify Protection System DC Molded Case Circuit Breaker Ratings [Section 1R21.2.b.1]
05000369, 370/2015007-02	NCV	Failure to Perform Adequate Periodic Testing of Molded Case Circuit Breakers [Section 1R21.2.b.2]

LIST OF DOCUMENTS REVIEWED

Procedures

AP/1/A/5500/20, Loss of RN, Rev. 33
AP/2/A/5500/22, Loss of VI, Rev.31
EP/1/A/5000/E-0, Reactor Trip or Safety Injection, Rev. 34
EP/1/A/5000/E-1, Loss of Reactor or Secondary Coolant, Rev. 16
EP/1/A/5000/F-0, Critical Safety Function Status Trees, Rev. 6
IP/0/A/3066/013C, Rotork Actuator Testing Using Kalsi Engineering Test Bench With VIPER, Rev. 16
NSD-408, Testing, Rev. 18
OP/1/A/6500/001, Liquid Waste System, Rev. 94, completed 4/4/15
OP-MC-STM-BB, McGuire Operations Training, Rev. 36
PT/0/A/4250/004, Fire Barrier Inspection, Rev. 35
PT/2/A/4403/008, RN Train 2B Flow Balance, Rev. 65
RP/0/A/5700/007, Earthquake, Rev. 24
TT/0/A/9100/607, RN Pump Characteristic Test, Rev. 0
AP/1/A/5500/07, Loss of Electrical Power, Rev. 35
AP/1/A/5500/20, Loss of RN, Rev. 33
AP/2/A/5500/22, Loss of VI, Rev.31
CP/0/A/8120/044, Particulate Containment in Fuel Oil, dated 4/40/2015
CP/0/A/8600/027, Sampling Diesel Fuel Oil Tank Trucks, dated 3/10/2015
CP/0/A/8600/027, Sampling Diesel Fuel Oil Tank Trucks, Rev. 14
CP/1/A/8600/041, Unit 1 Diesel Fuel Oil Sampling, dated 4/20/2015
CP/2/A/8600/041, Unit 2 Diesel Fuel Oil Sampling, dated 4/20/2015
EDM – 102, Instrument Setpoint/Uncertainty Calculations, Rev.4
EP/1/A/5000/E-0, Reactor Trip or Safety Injection, Rev. 34
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AR 01572235	M-12-01342	M-13-07003	M-14-10396
AR-01901517	M-12-01400	M-13-08761	M-14-10593
(formerly PIP M-	M-12-01525	M-13-09665	M-14-11246
14-1114)	M-12-01895	M-13-09909	M-14-11456
G-14-2368	M-12-02158	M-13-09987	M-14-11779
G-96-0028	M-12-02503	M-13-10088	M-14-11964
G-97-00040	M-12-03380	M-13-10739	M-15-00885
M-06-00689	M-12-03599	M-14-00114	M-15-00903
M-06-04364	M-12-03910	M-14-01043	M-15-00907
M-06-0857	M-12-03955	M-14-01452	M-15-01677
M-08-00353	M-12-04649	M-14-01694	M-15-01746
M-08-00959	M-12-04650	M-14-01694	M-15-02038
M-08-01109	M-12-05240	M-14-02524	M-15-02133
M-08-07134	M-12-05360	M-14-03245	M-15-02351
M-09-02341	M-12-08240	M-14-03272	M-15-02403
M-09-02844	M-12-08268	M-14-05327	M-15-03513
M-09-03122	M-12-10304	M-14-05789	M-15-03552
M-09-0627	M-13-00439	M-14-06052	M-15-03647
M-09-6278	M-13-00693	M-14-07180	M-15-0907
M-10-06504	M-13-01925	M-14-07700	M-96-00530
M-11-07075	M-13-02838	M-14-08235	O-02-02819
M-11-07336	M-13-03040	M-14-08652	O-10-00494
M-11-07537	M-13-03882	M-14-08688	
M-11-07705	M-13-04222	M-14-08720	
M-12-00437	M-13-06807	M-14-09443	

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01757931	02151272	02027556	01728853
00390319	00581206	0207628601	01107286
01956570	01712809	02047011	0173656
01984484	01712809	02048799	00411433
01988509	01833506	02058396	01738654
02080918	01858794	02063618	201493302
02086853	02080022	02096548	203076702
02104214	01957921	02192240	204558402
02142044	01968228	01728576	212453201
0058932701	0058932701	0058939706	0058928001
0174319803	0175074101	0178437901	0178718501
0184038701	0058927901	0183242801	0186242901
0186202701	0186229902	0195700601	0195720101
0187281601	0187288901	0198259301	0204430501
0197899201	0198259201	0204614001	0204614101
0204529401	0204529501	0204640403	0204640601
0204638301	0204638401	0206361801	0210017501
0204701105	0204879901	0210836601	0211523101
0210017601	0210195201	0213073601	0213073701

0213047701	0213058202	0213129201	0213132601
0213078001	0213078101	0201592001	0217976901
0213132701	0213134301		

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EC107049, Spare Motor for D/G Fuel Oil Booster Pump Motor, Rev. 3
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ST2072 WO Task Complete Comment Report (WO 02014933), Last Refreshed On: 5/14/2015 9:39:51 AM
ST2072 WO Task Complete Comment Report (WO 02151085), Last Refreshed On: 5/14/2015 8:59:15 AM
ST2072 WO Task Complete Comment Report (WO 02152108), Last Refreshed On: 5/14/2015 9:34:33 AM
ST2072 WO Task Complete Comment Report (WO 1972570), Last Refreshed On: 5/14/2015 9:08:37 AM
ST2160 Work Order Task Completion Comments (WO 00469978), Report Executed: 5/20/2015 9:22:09 AM
ST2160 Work Order Task Completion Comments (WO 01972571), Report Executed: 5/20/2015 9:37:12 AM
ST2160 Work Order Task Completion Comments (WO 00459520), Report Executed: 5/20/2015 9:26:27 AM
ST2160 Work Order Task Completion Comments (WO 02030767), as of: 7/2/2012 14:55
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AR – 01906228 (formerly M-15-03552)
AR 01929605, 2015 CDBI Inspection Questioned 125VDC Breaker AIC rating, dated 6/1/2016
M-15-03568, SG PORV Time Critical Action to Include Ladder Prep
NCR 01929491, Perform Review of MCM-1151.00-0040.001, “Fragility Analysis”
NCR 01929505, 2015 NRC CDBI
NCR 01929994, 2015 NRC CDBI- Enhance Battery Room HELB Discussion
NCR 01930048, 2015 NRC CDBI Inspection – Provide Enhancements to TSC Guide
PIP M-15-03190, Items Identified during 2015 NRC CDBI in Room 602 (Midget Hole)
PIP M-15-03315, NRC CDBI question 164. Validate pipe breaks in curbed area of vital battery room area higher than 6” curbs.
PIP M-15-03479, 2015 NRC CDBI Inspection- Questions on current PDO in PIP M-09-2341
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