UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
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ATLANTA, GEORGIA 30303-1257

October 31, 2012

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

SUBJECT: MCGUIRE NUCLEAR STATION - NRC INTEGRATED INSPECTION REPORT 05000369/2012004 AND 05000370/2012004

Dear Mr. Capps:

On September 30, 2012, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your McGuire Nuclear Station Units 1 and 2. The enclosed inspection report documents the inspection results which were discussed on October 4, 2012, with you and other members of your staff.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your licenses. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel. One NRC-identified finding of very low safety significance (Green) was identified during this inspection which did not involve a violation of NRC requirements.

In accordance with 10 CFR 2.390 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 Public Document Room or from the Publicly Available Records (PARS) component of NRC's Agencywide Document 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,

/Curt Rapp RA for/

Jonathan H. Bartley, Chief
Reactor Projects Branch 1
Division of Reactor Projects

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

Enclosure: NRC Integrated Inspection Report 05000369/2012004 and 05000370/2012004 w/Attachment - Supplemental Information

cc w/encl: (See page 3)

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Letter to Steven D. Capps from Jonathan H. Bartley dated October 31, 2012

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U.S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos.:	50-369, 50-370
License Nos.:	NPF-9, NPF-17
Report Nos.:	05000369/2012004, 05000370/2012004
Licensee:	Duke Energy Carolinas, LLC
Facility:	McGuire Nuclear Station, Units 1 and 2
Location:	Huntersville, NC 28078
Dates:	July 1, 2012, through September 30, 2012
Inspectors:	J. Zeiler, Senior Resident Inspector J. Heath, Resident Inspector L. Pressley, Resident Inspector, Browns Ferry (Section 1R11 and 4OA5) R. Baldwin, Senior Operations Engineer (Section 1R11) M. Meeks, Senior Operations Engineer (Section 1R11)
Approved by:	Jonathan Bartley, Chief Reactor Projects Branch 1 Division of Reactor Projects

Enclosure

SUMMARY OF FINDINGS

IR05000369/2012-004, IR05000370/2012-004; 07/01/2012 – 09/30/2012; McGuire Nuclear Station; Licensed Operator Requalification Program

The report covered a three month period of inspection by three resident inspectors and two region based inspectors. One Green finding was identified that did not involve a violation of NRC requirements. The significance of inspection findings are indicated by their color (Green, White, Yellow, Red) and determined using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (SDP), dated June 2, 2011. Cross-cutting aspects are determined using IMC 0310, "Components Within The Cross-Cutting Areas," dated October 28, 2012. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process."

Cornerstone: Mitigating Systems

- Green: An NRC-identified finding was identified associated with the quality of the simulator scenarios developed by the licensee for the licensed operator requalification annual operating test. The licensee failed to follow the Technical Specification (TS) rules of usage for concurrent inoperability as shown in TS Example 1.3-3. The licensee entered this issue into their corrective action program (CAP) as PIP M-12-4157.

  The performance deficiency (PD) was determined to be more than minor because it was associated with the Human Performance attribute of the Mitigating Systems Cornerstone, and adversely affected the cornerstone objective in that it impacted the licensee's ability to evaluate and ensure operator performance. The significance determination was performed in accordance with Manual Chapter 0609, Appendix I, and determined to be of very low safety significance (Green). The cause of the finding was directly related to the cross-cutting aspect of personnel training and qualifications in the Resources component of the cross-cutting area of Human Performance, in that the licensee failed to ensure the quality of the operating tests used to evaluate the knowledge, skills, abilities, and training provided to operators to assure nuclear safety. [H.2(b)]

REPORT DETAILS

Summary of Plant Status

Unit 1 operated at essentially 100 percent rated thermal power (RTP) for the entire inspection period.

Unit 2 operated at essentially 100 percent RTP until September 15, 2012, when the unit was shut down for a refueling outage.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R01 Adverse Weather Protection

a. Inspection Scope

Flood Protection Measures - External: The inspectors reviewed aspects the licensee's external flood protection features. This included a walkdown of the northern earthen dike extension of the Cowans Ford Dam; rooftops of the Unit 1 and Unit 2 turbine, auxiliary, service, and fuel handling buildings; and, the site exterior storm water drainage system. The inspectors assessed the structural integrity and general condition of the earthen dike which is designed to protect safety-related facilities from flooding by Lake Norman. The inspectors verified that building roof drains and parapets, which protect safety-related buildings from flooding during rain storms, were intact and free of debris to ensure proper drainage functionality, and appropriate rooftop housekeeping was being implemented to prevent potential drain blockage. The inspectors evaluated the condition of the storm water drainage system to ensure the drains were free of potential sources of blockage. The inspectors reviewed the licensee's CAP database to ensure that the licensee was identifying issues and resolving them commensurate with their significance. Documents reviewed are listed in the Attachment.

Impending Adverse Weather Condition: The inspectors reviewed the licensee's severe weather actions following a severe thunderstorm warning issued on September 18, 2012, for northern Mecklenburg County. This included a review of actions required by RP/0/A/5700/006, Natural Disasters, to verify the licensee implemented appropriate actions to protect mitigating systems from adverse weather effects. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

1R04 Equipment Alignment

a. Inspection Scope

Partial Walkdowns: The inspectors performed a partial walkdown of the following four systems to assess the operability of redundant or diverse trains and components when safety equipment was inoperable. The inspectors focused on discrepancies that could impact the function of the system and potentially increase risk. The inspectors reviewed applicable operating procedures and walked down control systems components to verify selected breakers, valves, and support equipment were in the correct position to support system operation. Documents reviewed are listed in the Attachment.

- 1A emergency diesel generator (EDG) while the 1B EDG was out-of-service for planned preventive maintenance
- 1A motor driven auxiliary feedwater (MDCA) pump while the 1B MDCA pump was out-of-service for planned preventive maintenance
- 1B centrifugal charging pump (CCP) while the 1A CCP was out-of-service for preventive maintenance
- 1B containment spray (NS) pump while the 1A NS pump was out-of-service for preventive maintenance

b. Findings

No findings were identified.

1R05 Fire Protection

a. Inspection Scope

Fire Protection Walkdowns: The inspectors walked down accessible portions of the following five fire areas to determine if they were consistent with the updated final safety analysis report (UFSAR) and the fire protection program for defense-in-depth features. The features assessed included the licensee's control of transient combustible material and ignition sources, fire detection and suppression capabilities, firefighting equipment, and passive fire features such as fire barriers. The inspectors also reviewed the licensee's compensatory measures for fire deficiencies to determine if they were commensurate with the significance of the deficiency. The inspectors reviewed the fire plans for the areas selected to determine if it was consistent with the fire protection program and presented an adequate fire fighting strategy. Documents reviewed are listed in the Attachment.

- Unit 1 and Unit 2 residual heat removal (ND) pump and NS pump rooms (Fire Area 1)
- 1B EDG room (Fire Area 6)
- 1A and 1B CCP rooms (Fire Area 4)
- 2B EDG room (Fire Area 8)
- Standby Shutdown Facility (SSF) (Fire Area YARD)

b. Findings

No findings were identified.

1R06 Flood Protection Measures

a. Inspection Scope

Annual Review of Electrical Manholes: The inspectors conducted a visual examination of the SSF Cable Trench which contains the electrical cable to the 6.9 kilo-volt / 600 volt load center 1SLXG located in the SSF building. The inspectors assessed the condition of the electrical cables located inside this cable trench by verifying the cables, spices, support structures, and sump pumps were not being adversely impacted by standing water. In addition, the inspectors reviewed the licensee's CAP database to verify that electrical manhole related problems were being identified at the appropriate level, entered into the CAP, and appropriately resolved.

b. Findings

No findings were identified.

1R07 Heat Sink Performance

a. Inspection Scope

Annual Resident Inspection: The inspectors reviewed completed surveillances and heat exchanger performance test results for the 2B component cooling water (KC) heat exchanger. The KC heat exchanger was selected based on its safety-related function and risk significance. The inspectors assessed whether testing, inspection, and monitoring of bio-fouling was adequate to ensure proper heat transfer performance as described in the UFSAR. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

1R11 Licensed Operator Requalification (LOR) Program and Licensed Operator Performance

a. Inspection Scope

LOR Activity Review: On August 22, 2012, the inspectors observed operators in the plant's simulator during licensed operator just-in-time training for the upcoming Unit 2 refueling outage. The training scenario involved a Loss of ND Pump. The inspectors assessed overall crew performance, clarity and formality of communications, use of procedures, alarm response, control board manipulations, group dynamics and supervisory oversight. Documents reviewed are listed in the Attachment.

Licensed Operator Performance Review: The inspectors observed operators in the main control room and assessed their performance during the Unit 2 plant shutdown activities for the refueling outage. Documents reviewed are listed in the Attachment.

Biennial LOR Program Review: The inspectors reviewed documentation, interviewed licensee personnel, and observed the administration of operating tests associated with the licensee's operator requalification program. Furthermore, the inspectors performed in-office reviews of additional material provided by the licensee. The inspectors assessed the effectiveness of the facility licensee in implementing requalification requirements identified in 10 CFR Part 55, "Operators' Licenses." The evaluations were also performed to determine if the licensee effectively implemented operator requalification guidelines established in NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," and Inspection Procedure 71111.11, "Licensed Operator Requalification Program." The inspectors also evaluated the licensee's simulation facility for use in operator licensing requalification examinations using ANSI/ANS-3.5-1985, "American National Standard for Nuclear Power Plant Simulators for use in Operator Training and Examination." The inspectors observed six operating crews during the performance of the operating tests. Documentation reviewed included written examinations, Job Performance Measures, simulator scenarios, licensee procedures, on-shift records, simulator modification request records, simulator performance test records, operator feedback records, licensed operator qualification records, remediation plans, watchstanding records, and medical records. Documents reviewed are listed in the Attachment.

b. Findings

Introduction: An NRC-identified Green finding was identified associated with the quality of the simulator scenarios developed by the licensee for the licensed operator requalification annual operating test. The licensee failed to follow the TS rules of usage for concurrent inoperability as shown in TS Example 1.3-3.

Description: The inspectors reviewed Active Simulator Exam (ASE) 05, Rev 06 which included a lockout failure of safeguards bus 1ETA. This failure of 1ETA resulted in a concurrent inoperability of a required offsite circuit, of the EDG associated with the 1ETA bus, and of the 1ETA AC electrical power distribution system. All three items were structures, systems, or components (SSCs) required to be operable by TS Limiting Condition for Operation (LCO) 3.8.1, "AC Sources-Operating." Similarly, ASE 109, Rev 00, included a lockout failure of safeguards bus 1ETB. This failure of 1ETB resulted in a concurrent inoperability of a required offsite circuit, of the EDG associated with the 1ETB bus, and of the 1ETB AC electrical power distribution system. As with ASE 05, these components were SSCs required to be operable by TS LCO 3.8.1, "AC Sources-Operating." The inspectors then reviewed four additional simulator scenarios as required by IP 71111.11 and no other instances of incorrect TS application were identified.

The TS rules of usage for these concurrent inoperabilities within a single LCO involve application of TS LCO 3.0.2. The correct rules of usage for concurrent inoperabilities was demonstrated by TS Example 1.3-3. Applying the TS rules of usage to ASE 05 and

ASE 109 for TS LCO 3.8.1 would result in operators entering: (1) LCO 3.8.1 condition 'A' and associated required actions for one offsite circuit inoperable; (2) LCO 3.8.1 condition 'B' and associated required actions for one DG inoperable; and (3) LCO 3.8.1 condition 'D' and associated required actions for one offsite circuit inoperable and one DG inoperable.

During post scenario discussions following administration of ASE 109, the inspectors questioned licensee training and operations personnel on the correct implementation of TS LCO 3.8.1. These personnel stated that LCO 3.8.1 condition 'D' was the only condition required to be entered. However, after reviewing TS Example 1.3-3, the licensee agreed that condition 'A' and 'B' should also be entered and the simulator guides were incorrect. The inspectors determined that the licensee incorrectly determined the applicable TS for these events due to a misunderstanding of how to implement TS rules of usage for multiple concurrent inoperabilities within a single LCO.

Analysis: The inspectors determined that the licensee's failure to ensure correct application of TS and LCO action statements in simulator guides for ASEs 05 and 109 was a PD. The PD was determined to be more than minor because it was associated with the Human Performance attribute of the Mitigating Systems Cornerstone, and adversely affected the cornerstone objective in that it impacted the licensee's ability to evaluate and ensure operator performance to assess and maintain the availability, reliability, and capability of mitigating systems in that the operators were not correctly evaluated on how to apply TS for concurrent inoperabilities. The significance determination was performed in accordance with Manual Chapter 0609, Appendix I, "Licensed Operator Requalification Significance Determination Process." Appendix I, Question 6, asked if the finding was related to annual requalification operating test quality. The answer to this question was "YES" because greater than 20% of the simulator scenarios initially sampled were flawed in that two out of six scenarios incorrectly applied TS. Appendix I, Question 8, asked if greater than 40% of the reviewed simulator scenarios were flawed. The answer was "NO" because the inspectors identified only two flawed scenarios out of the 10 scenarios reviewed in detail. Accordingly, this finding was determined to be of very low safety significance (Green). The cause of the finding was directly related to the cross-cutting aspect of personnel training and qualifications in the Resources component of the cross-cutting area of Human Performance, in that the licensee failed to ensure the quality of the operating tests used to evaluate the knowledge, skills, abilities, and training provided to operators to assure nuclear safety. [H.2(b)]

Enforcement: Enforcement action does not apply because the performance deficiency did not involve a violation of a regulatory requirement. The licensee entered this issue into their CAP as Problem Investigation Program (PIP) M-12-4157. Because this finding has very low safety significance (Green), it is identified as FIN 50-369, 370/2012004-01, Failure to Correctly Implement Technical Specifications Adversely Affects Requalification Operating Test Quality.

1R12 Maintenance Effectiveness

a. Inspection Scope

The inspectors reviewed the three activities listed below for items such as: (1) appropriate work practices; (2) identifying and addressing common cause failures; (3) scoping in accordance with 10 CFR 50.65(b) of the Maintenance Rule; (4) characterizing reliability issues for performance; (5) charging unavailability for performance; (6) balancing reliability and unavailability; (7) trending key parameters for condition monitoring; (8) classification and reclassification in accordance with 10 CFR 50.65(a)(1) or (a)(2); and (9) appropriateness of performance criteria for SSCs/functions classified as (a)(2) and/or appropriateness and adequacy of goals and corrective actions for SSCs/functions classified as (a)(1). The inspectors performed a detailed review of the problem history and surrounding circumstances, evaluated the extent of condition reviews as required, and reviewed the generic implications of the equipment and/or work practice problem. Documents reviewed are listed in the Attachment.

- Unit 2 upper containment reactor building airlock doors failed to meet leakage acceptance criteria of surveillance procedure (PIP M-12-498)
- 2A ND pump discharge valve 2ND-24 failure to re-open following closure (PIP M-12-749)
- Detector 2EMF-73 (N16 Leakage) failure upon receipt of trouble alarm (PIP M-12-5100 and PIP M-12-5132)

b. Findings

No findings were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control

a. Inspection Scope

The inspectors reviewed the licensee's risk assessments and the risk management actions used to manage risk for the plant configurations associated with the five activities listed below. The inspectors assessed whether the licensee performed adequate risk assessments, and implemented appropriate risk management actions when required by 10 CFR 50.65(a)(4). For emergent work, the inspectors verified that any increase in risk was promptly assessed, that appropriate risk management actions were promptly implemented, and that work activities did not place the plant in unacceptable configurations. Documents reviewed are listed in the Attachment.

- Yellow risk for planned 1A EDG and 1A MDCA complex plan preventive maintenance work activities
- Yellow risk for planned instrument air compressor preventive maintenance and switchyard jersey barrier movement, planned Unit 1 turbine driven auxiliary feedwater (TDCA) pump preventive maintenance, and planned 1A EDG fuel oil booster pump (FD) motor replacement critical plan activities

- Yellow risk for planned 2B EDG complex work activity plan
- Yellow risk for planned SNSWP macro-fouling elimination
- Orange risk for planned 2B nuclear service water system (RN) pump suction strainer replacement

b. Findings

No findings were identified.

1R15 Operability Determinations and Functionality Assessments

a. Inspection Scope

The inspectors reviewed the seven technical evaluations listed below to determine if TS operability was properly justified and the subject component or system remained available such that no unrecognized increase in risk occurred. The inspectors reviewed any compensatory measures taken for degraded SSCs to determine if the measures were in-place and adequately compensated for the degradation. For the degraded SSCs, or those credited as part of compensatory measures, the inspectors reviewed the UFSAR to determine if the measures resulted in changes to the licensing basis functions, as described in the UFSAR, and if a license amendment was required per 10 CFR 50.59. Documents reviewed are listed in the Attachment.

- PIP M-12-5320, Excessive 2B RN pump suction strainer packing leakage
- PIP M-12-5384, Pinhole leak in RN piping at inlet of “B” train control room area ventilation and chill water (VC/YC) chiller
- PIP M-12-5813, Suspect Unit 1 pressurizer safety valve seat leakage
- PIPs M-12-5851 and M-12-5857, 2A EDG loaded to only 4200 Kilowatt during testing
- PIP M-12-6023, “A” train VC/YC chiller condenser outlet nozzle has corrosion indicative of RN cooling water leakage
- PIP M-12-6688, 2B KC heat exchanger cooling water differential pressure increasing at high rate
- PIP M-12-3380, Current “as-left” flow balance conditions for the RN trains does not meet acceptance criteria

b. Findings

No findings were identified.

1R18 Plant Modifications

a. Inspection Scope

The inspectors reviewed the following permanent modification to verify the adequacy of the modification package and 10 CFR 50.59 screening. The modification was evaluated against the TS, UFSAR, and licensee design bases documents for the systems affected to ensure the modification did not adversely affect the availability, reliability, and

functional capability of important SSCs. Documents reviewed are listed in the Attachment.

- EC 107049, Replace 1A EDG fuel oil booster pump motor

b. Findings

No findings were identified.

1R19 Post-Maintenance Testing

a. Inspection Scope

The inspectors reviewed the six post-maintenance tests listed below to determine if procedures and test activities ensured system operability and functional capability. The inspectors reviewed the licensee's test procedures to determine if the procedures adequately tested the safety functions that may have been affected by the maintenance activities, that the acceptance criteria in the procedures were consistent with information in the applicable licensing basis and/or design basis documents, and that the procedures had been properly reviewed and approved. The inspectors also witnessed the tests and/or reviewed the test data to determine if test results adequately demonstrated restoration of the affected safety functions. Documents reviewed are listed in the Attachment.

- 1B EDG slow start testing following planned complex plan work activities
- 1A CCP functional testing following planned work activities
- 2B EDG slow start testing following planned complex plan work activities
- 1KC-228B and 1KC-18B, "B" train reactor building non-essential KC return isolation valve retest following planned work activities
- 2A EDG overload testing following emergent governor linkage adjustment
- 1A MDCA pump following planned Engineering Change (EC106279) and valve work

b. Findings

No findings were identified.

1R20 Refueling and Other Outage Activities

a. Inspection Scope

Unit 2 began a refueling outage on September 15, 2012. Prior to the refueling outage, the inspectors reviewed the licensee's outage risk control plan to determine if the licensee had adequately considered risk in developing the outage schedule. The inspectors reviewed the licensee procedures listed in the Attachment to determine if they contained mitigation/response strategies for losses of decay heat removal, inventory control, power availability, and containment. During the refueling outage, the inspectors performed the following activities. Documents reviewed are listed in the Attachment.

- Observed portions of the cooldown process to determine if TS cooldown restrictions were followed
- Walked down containment shortly after the shutdown to determine if there was indication of previously unidentified leakage from components containing reactor coolant
- Reviewed the licensee's responses to emergent work and unexpected conditions to determine if configuration changes were controlled in accordance with the outage risk control plan
- Observed outage activities to determine if the licensee maintained defense-in-depth commensurate with the outage risk control plan for the key safety functions and applicable TS
- Assessed outage activities that were conducted during short time-to-boil periods
- During lowered reactor coolant system inventory conditions, the inspectors reviewed the licensee's commitments to NRC Generic Letter 88-17 to determine if they were still in place and adequate
- Observed fuel handling operations (offload) and other ongoing fuel handling activities to determine if those operations and activities were being performed in accordance with TS and licensee procedures.
- Prior to mode changes, the inspectors reviewed selected system lineups and/or control board indications to determine if TS, license conditions, and other requirements, commitments, and administrative procedure prerequisites for mode changes were met prior to changing modes or plant configurations
- Reviewed reactor coolant system boundary leakage data and observed/reviewed controls for establishing containment closure to determine whether the reactor coolant system and containment boundaries were in place when necessary.
- Reviewed items that had been entered into the licensee's CAP to determine if the licensee had identified problems related to outage activities at an appropriate threshold and had entered them into the CAP.

b. Findings

No findings were identified.

1R22 Surveillance Testing

a. Inspection Scope

For the six surveillance tests identified below, the inspectors witnessed testing and reviewed the test data, to determine if the SSCs involved in these tests satisfied the requirements described in the TS, UFSAR, and applicable licensee procedures. In addition, the inspectors verified that the tests demonstrated that the SSCs were capable of performing their intended safety functions.

Surveillance Tests

- PT/0/A/4350/040E, 125 VDC Vital I and C Battery Modified Performance Test Using BCT-2000, Rev. 8
- PT/2/A/4350/036B, D/G 2B 24 Hour Run, Rev. 42

- PT/2/A/4150/060, Spent Fuel Pool Leak Chase System Test, Rev. 0
- PT/0/A/4150/046, Containment Walkdown, Rev. 4
- PT/2/A/4350/002A, Diesel Generator 2A Operability Test, Rev. 89

In-Service Tests
- PT/1/A/4204/002B, ND Train B Valve Stroke Timing - Quarterly, Rev. 15

b. Findings

No findings were identified.

4OA1 Performance Indicator (PI) Verification

a. Inspection Scope

The inspectors sampled licensee data to confirm the accuracy of reported PI data for the following six indicators. To determine the accuracy of the PI data reported for the specified review period, the inspectors compared the licensee's basis in reporting each data element to the PI definitions and guidance contained in Nuclear Energy Institute (NEI) 99-02, "Regulatory Assessment Indicator Guideline," Rev. 6, as well as the licensee's procedural guidance for reporting PI information. Documents reviewed are listed in the Attachment.

Mitigating Systems Cornerstone
- Mitigating Systems Performance Index (MSPI) - Secondary Heat Removal (Units 1 and 2
- MSPI - Residual Heat Removal (Units 1 and 2)
- MSPI - Cooling Water (Units 1 and 2)

The inspectors reviewed the PI data for the period July 2011 through June 2012 to verify the MSPI was properly calculated. The inspectors independently screened TS Action Item Logs, selected control room logs, and maintenance rule failure data, to determine if unavailability/unreliability hours were properly reported.

b. Findings

No findings were identified.

4OA2 Problem Identification and Resolution

a. Inspection Scope

Review of Items Entered into the CAP: As required by Inspection Procedure 71152, "Problem Identification and Resolution," and in order to help identify repetitive equipment failures or specific human performance issues for follow-up, the inspectors performed screening of items entered into the licensee's CAP. This was accomplished by

reviewing copies of condition reports, attending some daily screening meetings, and accessing the licensee's computerized CAP database.

Annual Sample Reviews: The inspectors reviewed PIP M-11-6715, Loss of charging and letdown during Unit 1 refueling shutdown, in detail to evaluate the effectiveness of the licensee's corrective actions for important safety issues. The inspectors assessed if the issue was properly identified; documented accurately and completely; properly classified and prioritized; adequately considered extent of condition, generic implications, common cause, and previous occurrences; adequately identified root causes/apparent causes; and identified appropriate and timely corrective actions. The inspectors evaluated the licensee documents against the requirements of the licensee's CAP and implementing procedures, and 10 CFR 50, Appendix B. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

4OA5 Other Activities

.1 Quarterly Resident Inspector Observations of Security Personnel and Activities

a. Inspection Scope

During the inspection period, the inspectors conducted observations of security force personnel and activities to ensure that the activities were consistent with licensee security procedures and regulatory requirements relating to nuclear plant security. These observations took place during both normal and off-normal plant working hours. These quarterly resident inspector observations of security force personnel and activities did not constitute any additional inspection samples. Rather, they were considered an integral part of the inspectors' normal plant status review and inspection activities.

b. Findings

No findings were identified.

.2 (Discussed) NRC Temporary Instruction (TI) 2515/187, Inspection of Near-Term Task Force Recommendation 2.3 Flooding Walkdowns
(Discussed) NRC TI 2515/188, Inspection of Near-Term Task Force Recommendation 2.3 Seismic Walkdowns

a. Inspection Scope

The inspectors accompanied the licensee on a sampling basis, during their flooding and seismic walkdowns, to verify that the licensee's walkdown activities were conducted using the methodology endorsed by the NRC. These walkdowns are being performed at all sites in response to a letter from the NRC to licensees, entitled "Request for Information Pursuant to Title 10 of the *Code of Federal Regulations* 50.54(f) Regarding

Recommendations 2.1, 2.3, and 9.3, of the Near-Term Task Force Review of Insights from the Fukushima Dai-Ichi Accident," dated March 12, 2012 (ADAMS Accession No. ML12053A340).

Enclosure 3 of letter requested licensees to perform seismic walkdowns using an NRC-endorsed walkdown methodology. Electric Power Research Institute (EPRI) document 1025286 titled, "Seismic Walkdown Guidance," (ADAMS Accession No. ML12188A031) provided the NRC-endorsed methodology for performing seismic walkdowns to verify that plant features, credited in the current licensing basis (CLB) for seismic events, are available, functional, and properly maintained.

Enclosure 4 of the letter requested licensees to perform external flooding walkdowns using an NRC-endorsed walkdown methodology (ADAMS Accession No. ML12056A050). NEI document 12-07 titled, "Guidelines for Performing Verification Walkdowns of Plant Protection Features," (ADAMS Accession No. ML12173A215) provided the NRC-endorsed methodology for assessing external flood protection and mitigation capabilities to verify that plant features; credited in the CLB for protection and mitigation from external flood events; were available, functional, and properly maintained.

b. Findings

Findings or violations associated with the flooding and seismic walkdowns, if any, will be documented in future reports.

4OA6 Meetings, Including Exits

On October 4, 2012, the resident inspectors presented the inspection results to Mr. Steven Capps and other members of his staff. The inspectors confirmed that any proprietary information provided or examined during the inspection period had been returned.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee
K. Ashe, Regulatory Compliance Manager
D. Brenton, Superintendent of Operations
D. Brewer, Organizational Effectiveness Manager
S. Capps, Vice President, McGuire Nuclear
K. Crane, Senior Licensing Specialist
J. Gabbert, Chemistry Manager
J. Hicks, Maintenance Superintendent
N. Kunkel, Work Control Superintendent
S. Mooneyhan, Radiation Protection Manager
C. Morris, Station Manager
J. Nolin, Design Engineering Manager
S. Russ, Security Manager
P. Schuerger, Training Manager
S. Snider, Engineering Manager

LIST OF REPORT ITEMS

Opened and Closed		
05000369, 370/2012004-01	FIN	Failure to Correctly Implement Technical Specifications Adversely Affects Requalification Operating Test Quality (Section 1R11)
Discussed		
2515/187	TI	Inspection of Near-Term Task Force Recommendation 2.3 Flooding Walkdowns (Section 4OA5.2)
2515/188	TI	Inspection of Near-Term Task Force Recommendation 2.3 Seismic Walkdowns (Section 4OA5.2)

DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection

Flood Protection Measures - External

FSAR Section 2.4, Hydrology
MCS-1465.00-00-0012, Design Basis Specification for Flooding from External Sources, Rev. 1
MCC-1100.00-00-0002, McGuire Probable Maximum Precipitation Flood Analysis, Rev. 0
Drawing No. MC-1022-2, Grading Plan, Discharge Canal & Intake Channel, Rev. 17
Drawing No. MC-1040-7, General Arrangement Roof Plan, Rev. 12
PIP M-12-4054, NRC identified storm water drainage system blocked by debris

Impeding Adverse Weather Condition
RP/0/A/5700/006, Natural Disasters, Rev. 25
PIP M-12-7064, RP-06 entry due to severe thunderstorm
PIP M-12-7066, Unplanned Unit 2 Yellow defense-in-depth risk due to severe thunderstorm

Section 1R04: Equipment Alignment
OP/1/A/6350/002, Diesel Generator, Rev. 113
OP/1/A/6250/002, Auxiliary Feedwater System, Rev. 117
OP/1/A/6200/001E, Chemical and Volume Control System, Rev. 27
OP/1/A/6200/007, Containment Spray System, Rev. 37

Section 1R05: Fire Protection
MCS-1465.00-00-0008, Design Basis Specification for Fire Protection, Rev. 12
NSD 104, Material Condition/Housekeeping, Foreign Material Exclusion and Seismic Concerns, Rev. 33
NSD 313, Control of Transient Fire Loads, Rev. 12
FS/0/B/9000/001, (Aux 695) Fire Strategy #1, Rev. 0
FS/0/B/9000/004, (Aux 716) Fire Strategy #4, Rev. 0
Drawing No. MFSD-001, Aux 695, Rev. 0
Drawing No. MFSD-005.006, Unit 1 D/G Rooms, Rev. 0
Drawing No. MFSD-007.008, Unit 2 D/G Rooms, Rev. 0
Drawing No. MFSD-004, Aux 716, Rev. 0

Section 1R07: Heat Sink Performance
OP/2/A/6400/006, Nuclear Service Water System, Rev. 176
PT/2/A/4401/001B, KC Train 2B Performance Test, Rev. 59
2012 Nuclear Service Water Fouling Updates
PIP M-12-6688, 2B KC heat exchanger differential pressure increasing at high rate

Section 1R11: Licensed Operator Requalification Program and Licensed Operator Performance
Quarterly Resident Inspector Reviews
AP/2/A/5500/019, Loss of ND or ND System Leakage, Rev. 22
SRT-103, Loss of ND

Biennial Review of LOR Program
Records
License Reactivation Packages (Four packages reviewed)
Medical Files (Twenty Medical Records Reviewed)
Remedial Training Records (Two Records Reviewed)
Remedial Training Examinations (Two Records Reviewed)

Written Examinations:
LOR 2012 “A” Shift RO Annual Exam
LOR 2012 “A” Shift SRO Annual Exam
LOR 2012 “A” Shift Annual Exam Closed Reference Section

LOR 2012 “C” Shift RO Annual Exam
LOR 2012 “C” Shift SRO Annual Exam
LOR 2012 “C” Shift Annual Exam Closed Reference Section

Procedures
ETQS 5100.0, Remediation and Reevaluation, Revision 1
MTP 2701.0, Simulator Configuration Management and Operating Limits, Revision 4
MTP 4116.1, Licensed Requalification Program, Revision 25
MTP 5405.0, Operations Examination Development, Validation, and Security, Revision 13
NSD 805, Nuclear Station Unit Specific Training Simulators, Revision 3
OMOP 4-3, Use of Abnormal and Emergency Procedures, Revision 34
SOPM 01-07, Control Room Oversight, Revision 1

PIPs
M-10-04873, M-11-00078, M-11-00389, M-11-00713, M-11-02354, M-11-02532, M-11-07991, M-11-08413, M-11-08726, M-12-01866, M-12-03318, M-12-04157, M-12-04188

Simulator Steady State Tests
Steady State Power Drift Test (Last two Tests Reviewed).
Steady State Power, Heat Balance Check (Last two Tests Reviewed).
Steady State Power, Critical and Noncritical Parameters Check (Last two Tests Reviewed).

Simulator Transient Tests
Test 10, PZR PORV Failure [Causing Slow Primary System Depressurization], (Last two Tests Reviewed).
Test 17, Simultaneous Closure of all MSIVs, (Last two Tests Reviewed).

ASE/Dynamic Simulator Scenario Packages
ASE-08 Rev 06, ASE-17 Rev 19, ASE-19 Rev 19, ASE-35 Rev 05, ASE-42 Rev 03, ASE-44 Rev 02, ASE-50 Rev 02, ASE-110 Rev 00

JPM Packages:
OP-MC-CF-CF:132A, Locally Trip Both Unit 2 Feedwater Pump Turbines, Revision 07,
OP-MC-CA-SA:217, Manually Fail Open 2SA-48ABC and 2SA-49AB, Revision 05
OP-MC-JPM-SS-VI:109A, Supplying D, E, and F VI Compressor with Control Air from VB, Revision 12.
OP-MC-PSS-KC:029A, Place Standby Component Cooling Train in Operation, Revision 15
OP-MC-PS-NV:120A, Establish Excess Letdown, Revision 15
OP-MC-EL-EPL:010, Shutdown Charger EVCA, Revision 18
OP-MC-JPM-CF-CF:079A, Locally Trip Unit 1 Main Turbine and Both Unit 1 FWPTs, Rev 13
OP-MC-IC-IRE:193-1A, Respond to a Rod Control System Malfunction, Rev 05
OP-MC-ECC-NI:309A, Align the ND System to Cold Leg Recirculation, Rev 01
OP-MC-ADM-ADM:273T, Determine an Emergency Classification per RP/000, Rev 01

Other Documents
TRN-12-04A, McGuire 71111.11 Readiness Assessment/Focused Training Assessment Report (Associated with PIP M-12-03138), 04/26/2012.

Draft Root Cause Analysis Report, PIP M-12-4157 McGuire 2012 LOR Active Simulator Exam Deficiency, Revision 0

Section 1R12: Maintenance Effectiveness

NSD 310, Requirements for the Maintenance Rule, Rev. 11
EDM 201, Risk Category Scoping, Health Grouping and ER Strategy, Rev. 15
EDM 210, Engineering Responsibilities for the Maintenance Rule, Rev. 25
SSC Function Scoping Database

Section1R13: Maintenance Risk Assessments and Emergent Work Control

NSD 213, Risk Management Process, Rev. 11
NSD 415, Operational Risk Management (Modes 1–3) per 10 CFR 50.65(a)(4), Rev. 7
SOMP 02-02, Operations Roles in the Risk Management Process, Rev. 11
Complex Activity Plan for 1A and 1A MDCA unavailability work
Critical Activity Plan for 1A EDG fuel oil booster pump motor replacement
Critical Activity Plan for SNSWP macro-fouling elimination
Critical Activity Plan for 2B RN suction strainer replacement

Section1R15: Operability Determinations and Functionality Assessments

Operating Experience Smart Sample (OpESS) 2012/02, Technical Specification Interpretation and Operability Determination, Rev. 1
NSD 203, Operability/Functionality, Rev. 24
PT/2/A/4350/002A Diesel Generator Operability Test, Rev. 89
PIP M-12-5857, 2A EDG local kW meter uncertainty

Section1R18: Plant Modifications

NSD 301, Engineering Change Program, Rev. 40
EDM 601, Engineering Change Manual, Rev. 15
EC 107049 package, 1A DG FD motor replacement
WO 1838096, 1A DG FD motor replacement
PIP M-12-4858, Issues with 1B DG FD motor replacement

Section 1R19: Post-Maintenance Testing

NSD 408, Testing, Rev. 15
WO 02033662, 1KC-18B Gate valve testing
WO 02017972, 1KC-228 Gate valve testing
1B KC/ND 12W32 Complex Activity Plan dated 8/7/12

PT/1/A/4401/002B, KC Train B Valve Stroke Timing – Quarterly, Rev. 28
OP/1/A/6250/002, Auxiliary Feedwater System, Rev. 117

Section1R20: Refueling and Other Outage Activities

McGuire 2EOC21 Refueling Outage Schedule, update 9/11/12
McGuire 2EOC21 Independent Review Team Assessment (PIPs M-12-5439 and M-12-5855)
NSD 403, Shutdown Risk Management (Modes 4, 5, 6, and No-Mode) Per 10CFR50.65 (a)(4), Rev. 26
AP/2/A/5500/007, Loss of Electrical Power, Rev. 29
AP/2/A/5500/019, Loss of ND or ND System Leakage, Rev. 22

AP/2/A/5500/025, Spent Fuel Damage, Rev. 8
AP/2/A/5500/041, Loss of Spent Fuel Cooling or Level, Rev. 10
OP/2/A/6100/002, Controlling Procedure for Unit Shutdown, Rev. 121
OP/2/A/6100/003, Controlling Procedure for Unit Operation, Rev. 144
OP/2/A/6100/SD-1, Prepare for Cooldown, Rev. 38
OP/2/A/6100/SD-2, Cooldown to 400 degrees F, Rev. 45
OP/2/A/6100/SD-4, Cooldown to 240 degrees F, Rev. 56
OP/2/A/6100/SD-5, Recirc ND, Rev. 17
OP/2/A/6100/SD-6A, Placing Train A ND in Service, Rev. 39
OP/2/A/6100/SD-6B, Placing Train B ND in Service, Rev. 39
OP/2/A/6100/SD-7, Cooldown to 200 Degrees F, Rev. 33
OP/2/A/6100/SD-8, Water Solid Operations, Rev. 22
OP/2/A/6100/SD-11, Mode 5 Checklist, Rev. 16
OP/2/A/6100/SD-12, Cooldown to 100 Degrees F, Rev. 52
OP/2/A/6100/SD-16, Preparing for NC System Drain, Rev. 18
OP/2/A/6100/SD-20, Draining the NC System, Rev. 52
OP/2/A/6100/SD-21, Mode 6 Checklist, Rev. 17
OP/2/A/6100/SD-22, Removal of Reactor Vessel Head, Rev. 19
OP/2/A/6100/SD-25, Core Alterations Checklist, Rev. 15
PT/0/A/4150/037, Total Core Unloading, Rev. 44
PT/2/A/4200/002C, Containment Closure, Rev. 75
MP/0/A/7650/141, Fuel Transfer System Operation, Rev. 21
MP/0/A/7650/146, Operation of Rx Building Manipulator Crane, Rev. 27
MP/0/A/7650/148, Operation of Fuel Building Manipulator Crane, Rev. 43
MP/0/A/7650/161, Fuel Handling and Core Alterations Prerequisites Procedure, Rev. 14
MSD-585, Reactor Building Personnel Access and Material Control, Rev. 15
MCC-1201.30-00-0030, McGuire Spent Fuel Pool Decay Heat for Cycle Specific Reloads - Unit 2, Rev. 3

Section 1R22: Surveillance Testing

McGuire Nuclear Station ASME Inservice Testing Program, Rev. 27
WO 02027232, EVCC modified performance tests
MCC-1381.05-00-0200, 125 VDC Vital I&C Power System (EPL) Battery Sizing & Battery Charger Sizing, Rev. 10
WO 0202723201 (EVCC)

Section 4OA1: Performance Indicator (PI) Verification

NSD 225, NRC Performance Indicators, Rev. 5
NSD 324, Mitigating Systems Performance Index (MSPI), Rev. 2
NEI 99-02, Regulatory Assessment Performance Indicator Guideline, Rev. 6
SRPMP 10-1, “NRC Performance Indicator Data Collection, Validation, Review and Approval”, Rev. 4
PIPs screened for Maintenance Rule applicability in licensee CAP database from March 2012 to June 2012
Control room and TS logs of equipment status conditions from July 2011 to June 2012

Section 4OA2: Problem Identification and Resolution

NSD 202, Reportability, Rev. 23
NSD 208, Problem Investigation Process (PIP), Rev. 36
NSD 212, Cause Analysis, Rev. 25