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

January 20, 2012

Mr. Regis T. Repko
Vice President
Duke Energy Carolinas, LLC
McGuire Nuclear Station
MG01VP/12700 Hagers Ferry Road
Huntersville, NC 28078

SUBJECT: MCGUIRE NUCLEAR STATION - NRC INTEGRATED INSPECTION REPORT 05000369/2011005 AND 05000370/2011005

Dear Mr. Repko:

On December 31, 2011, 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 that were discussed on January 10, 2012, with Mr. Steven D. Capps and other members of your staff.

The inspection examined activities conducted under your licenses 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. Based on the results of the inspection, no findings were identified.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure 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 Website at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

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

Docket Nos.: 50-369, 50-370, 72-38
License Nos.: NPF-9, NPF-17

Enclosure: NRC Integrated Inspection Report 05000369/2011005 and 05000370/2011005
w/Attachment – Supplemental Information

cc w/encl: (See next page)

January 20, 2012

Mr. Regis T. Repko
Vice President
Duke Energy Carolinas, LLC
McGuire Nuclear Station
MG01VP/12700 Hagers Ferry Road
Huntersville, NC 28078

SUBJECT: MCGUIRE NUCLEAR STATION - NRC INTEGRATED INSPECTION REPORT 05000369/2011005 AND 05000370/2011005

Dear Mr. Repko:

On December 31, 2011, 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 that were discussed on January 10, 2012, with Mr. Steven Capps and other members of your staff.

The inspection examined activities conducted under your licenses 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. Based on the results of the inspection, no findings were identified.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure 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 Website at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

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

Docket Nos.: 50-369, 50-370, 72-38
License Nos.: NPF-9, NPF-17

Enclosure: NRC Integrated Inspection Report 05000369/2011005 and 05000370/2011005 w/Attachment - Supplemental Information

cc w/encl: (See next page)

X PUBLICLY AVAILABLE ☐ NON-PUBLICLY AVAILABLE ☐ SENSITIVE X NON-SENSITIVE

ADAMS: **X** Yes ACCESSION NUMBER: ML12020A088 X SUNSI REVIEW COMPLETE

OFFICE	RII:DRP	RII:DRP	RII:DRP	RII:DRP	RII:DRP	RII:DRS
SIGNATURE	/RA By E-mail/	/RA By E-mail/	/RA/	/RA/	/RA by e-mail/	/RA by e-mail/
NAME	JZeiler	JHeath	EStamm	CRapp	JBartley	GLaska
DATE	1/12/12	1/12/12	1/12/12	1/12/12	1/12/12	1/12/12
E-MAIL COPY	**YES** NO	**YES** NO	**YES** NO	**YES** NO	**YES** NO	**YES** NO

OFFICIAL RECORD COPY DOCUMENT NAME:
HTTP://PORTAL.NRC.GOV/EDO/RII/DRP/BRANCH1/DOCUMENTS/REPORTMCGUIRE1105.DOC

cc w/encl:
Beth J. Horsley
Wholesale Customer Relations
Duke Energy Corporation
Electronic Mail Distribution

Charles J. Thomas
Fleet Licensing Manager
Duke Energy Carolinas, LLC
Electronic Mail Distribution

Clark E. Curry
Engineering Manager
McGuire Nuclear Station
Duke Energy Carolinas, LLC
Electronic Mail Distribution

David A. Cummings
Associate General Counsel
Duke Energy Corporation
Electronic Mail Distribution

H. Duncan Brewer
Safety Assurance Manager
Duke Energy Carolinas, LLC
Electronic Mail Distribution

Kay L. Crane
Senior Licensing Specialist
McGuire Nuclear Station
Duke Energy Carolinas, LLC
Electronic Mail Distribution

Luellen B. Jones
Fleet Licensing Engineer
Duke Energy Carolinas, LLC
Electronic Mail Distribution

M. Christopher Nolan
Fleet Safety Assurance Manager
Duke Energy Carolinas, LLC
Electronic Mail Distribution

Steven D. Capps
Station Manager
Duke Energy Carolinas, LLC
Electronic Distribution

Peter Schuerger
Training Manager
Duke Energy Carolinas, LLC
Electronic Mail Distribution

Kenneth L. Ashe
Regulatory Compliance Manager
Duke Energy Carolinas, LLC
Electronic Mail Distribution

Lara S. Nichols
Vice President-Legal
Duke Energy Corporation
Electronic Mail Distribution

David A. Repka
Winston Strawn LLP
Electronic Mail Distribution

County Manager of Mecklenburg County
720 East Fourth Street
Charlotte, NC 28202

W. Lee Cox, III
Section Chief
Radiation Protection Section
N.C. Department of Environmental
Commerce & Natural Resources
Electronic Mail Distribution

David A. Baxter
Vice President, Nuclear Engineering
General Office
Duke Energy Carolinas, LLC
Electronic Mail Distribution

Senior Resident Inspector
U.S. Nuclear Regulatory Commission
William B. McGuire Nuclear Station
U.S. NRC
12700 Hagers Ferry Rd
Huntersville, NC 28078

Letter to Regis T. Repko from Jonathan H. Bartley dated January 20, 2012

SUBJECT: MCGUIRE NUCLEAR STATION - NRC INTEGRATED INSPECTION REPORT 05000369/2011005 AND 05000370/2011005

Distribution w/encl:
C. Evans, RII EICS (Part 72 Only)
L. Douglas, RII EICS (Linda Douglas)
OE Mail (email address if applicable)
RIDSNRRDIRS
PUBLIC
RidsNrrPMMcGuire Resource

U.S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos.:	50-369, 50-370, 72-38
License Nos.:	NPF-9, NPF-17
Report Nos.:	05000369/2011005, 05000370/2011005
Licensee:	Duke Energy Carolinas, LLC
Facility:	McGuire Nuclear Station, Units 1 and 2
Location:	Huntersville, NC 28078
Dates:	October 1, 2011, through December 31, 2011
Inspectors:	J. Zeiler, Senior Resident Inspector J. Heath, Resident Inspector G. Laska, Senior Operations Examiner (Section 1R11)
Approved by:	Jonathan Bartley, Chief Reactor Projects Branch 1 Division of Reactor Projects

Enclosure

SUMMARY OF FINDINGS

IR05000369/2011-005, IR05000370/2011-005; 10/1/2011 – 12/31/2011; McGuire Nuclear Station, Units 1 and 2; Routine Integrated Report

The report covered a three-month period of inspection by two resident inspectors and a senior operations examiner. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, “Reactor Oversight Process.”

REPORT DETAILS

Summary of Plant Status

Unit 1 began the inspection period in a refueling outage. The unit restarted October 14, 2011, and reached 100 percent rated thermal power (RTP) on October 18. The unit operated at essentially full RTP for the rest of the inspection period.

Unit 2 began the inspection period at approximately 100 percent RTP and operated at essentially full RTP for the entire inspection period except for two brief power reductions to conduct scheduled turbine control valve testing.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R01 Adverse Weather Protection

a. Inspection Scope

Readiness for Seasonal Extreme Weather Conditions: The inspectors reviewed the effectiveness of the licensee's cold weather protection program pertaining to their preparations for seasonal cold weather conditions experienced during the inspection period. The inspectors discussed the licensee's cold weather program with the assigned plant system engineer and verified that the licensee had implemented their cold weather preparation procedures. The inspectors walked down freeze protection equipment associated with the Standby Shutdown Facility (SSF) and each unit's refueling water storage tank, condensate storage tank, and exterior doghouses. This equipment was selected because their important to safety related functions could be affected by adverse weather (freezing conditions). The inspectors observed plant conditions and evaluated those conditions against the criteria in the monthly equipment freeze protection checkout procedure. 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 two 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 and 2A nuclear service water (RN) systems with 1B and 2B RN systems out-of-service for strainer modification activities
- 1A diesel generator (DG) with 1B DG out-of-service for planned preventive maintenance

Complete System Walkdown: The inspectors conducted a detailed review of the Unit 1 residual heat removal (ND) system. To determine the correct system alignment, the inspectors reviewed operating procedures, drawings, and the Updated Final Safety Analysis Report (UFSAR). Items reviewed during the inspection included: (1) valves were correctly positioned, do not exhibit leakage, and were locked as required; (2) electrical power was available; (3) system components were correctly labeled, cooled, lubricated, ventilated, etc.; (4) hanger and supports were correctly installed and functional; (5) essential support systems were functional; (6) system performance was not hindered by debris; and (7) tagging clearances were appropriate. To determine the effect of outstanding design issues on the operability of the systems, the inspectors reviewed the operator workaround list, the temporary modification list, system health reports, and other outstanding items tracked by the engineering department. In addition, the inspectors reviewed outstanding maintenance work requests/work orders and deficiencies that could affect the ability of the system to perform its function. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

1R05 Fire Protection

a. Inspection Scope

Fire Protection Walkdowns: The inspectors walked down accessible portions of the following four plant areas to determine if they were consistent with the 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, fire fighting 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 they were consistent with the fire protection program and presented an adequate fire fighting strategy. Documents reviewed are listed in the Attachment.

- Unit 1 Standby Make-up Pump (Fire Area RB1)
- Unit 1 ETB (Fire Area 9)
- Unit 1 Electrical Penetration Room (Fire Area 11)
- Unit 1 and Unit 2 Vital Battery Rooms (Fire Area 13)

Annual Fire Drill Observation: The inspectors observed the performance of two licensee fire drills on November 3, 2011, and November 25, 2011, to evaluate the readiness of the plant fire brigade to effectively fight fires. These fire drills, one of which was conducted during backshift, involved a Unit 2 turbine generator seal oil (LG) system fire

on the LG pump skid. The inspectors verified that the licensee drill evaluation members identified performance weaknesses in a self-critical manner at the drill critique and entered the issues into the corrective action program (CAP). Specific attributes evaluated by the inspectors included: (1) proper wearing of turnout gear and self-contained breathing apparatus; (2) proper use and layout of fire hoses; (3) employment of appropriate fire fighting techniques; (4) sufficient fire fighting equipment brought to the scene; (5) effectiveness of fire brigade leader communications, command, and control; (6) search for victims and propagation of the fire into other plant areas; (7) smoke removal operations; (8) utilization of pre-planned strategies; (9) adherence to the pre-planned drill scenario; and (10) drill objectives. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

1R06 Flood Protection Measures

a. Inspection Scope

Annual Review of Electrical Manholes: On December 12, 2011, the inspectors conducted a visual examination of the majority of the Protected Area plant underground electrical cable manholes, including; CMPH-1, CMPH-1A, CMPH-2, CMPH-3, CMPH-19, CMPH-20, CMPH-22, CMPH-27, CMPH-28, CMPH-T1, CMPH-T2, TR-2, TR-3, TR-5, TR-11, TR-12, and TR-21. The inspectors assessed the condition of the electrical cables located inside these manholes by verifying the cables, splices, 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. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

1R11 Licensed Operator Requalification Program

a. Inspection Scope

Quarterly Resident Inspector Activity Review: On November 9, 2011, the inspectors observed operators in the plant's simulator during licensed operator requalification training. The evaluated training scenario involved a reactor coolant system flow channel failure followed by a steam break outside containment, an Anticipated Transient Without Scram, and a main steam isolation valve failure to automatically isolate. The inspectors assessed overall crew performance, clarity and formality of communications, use of procedures, alarm response, control board manipulations, group dynamics, and supervisory oversight. The inspectors observed the post-exercise critique to determine whether the licensee identified deficiencies and discrepancies that occurred during the simulator training. Documents reviewed are listed in the Attachment.

Biennial Review of Licensee Requalification Examination Results: On August 4, 2011, the licensee completed the annual requalification operating tests required to be administered to all licensed operators in accordance with 10 CFR 55.59(a)(2). The inspectors performed an in-office review of the overall pass/fail results of the individual operating tests and the crew simulator operating tests. These results were compared to the thresholds established in Inspection Manual Chapter (IMC) 0609, Significance Determination Process, Appendix I, Operator Requalification Human Performance Significance Determination Process.

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness

a. Inspection Scope

The inspectors reviewed the two 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 structures, systems, and components (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.

- Inadequate RN net positive suction head for certain loss of instrument air events, Action Plan S-2996 (PIP M-09-2341)
- 1B DG lube oil heater breaker failure (PIP M-11-8467)

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 three 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.

- Planned Orange risk for 1B RN out-of-service for Phase 3 strainer modifications
- Planned Yellow risk for 1B DG out-of-service for electrical and mechanical preventive maintenance activities
- Planned Yellow risk for 1A and 2A RN inoperable for visual inspections of suction piping from the standby nuclear service water pond (SNSWP)

b. Findings

No findings were identified.

1R15 Operability Evaluations

a. Inspection Scope

The inspectors reviewed the four technical evaluations listed below to determine whether Technical Specification (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 whether 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 whether the measures resulted in changes to the licensing basis functions, as described in the UFSAR, and whether a license amendment was required per 10 CFR 50.59. Documents reviewed are listed in the Attachment.

- Unit 1 end-of-cycle ice basket weights discovered below safety analysis
- Evaluation of Containment Purge system operability following Solid State Protection System (SSPS) jumper configuration control issue
- Immediate Determination of Operability (IDO) for restoring operability of 1B RN system following 1B RN strainer backwash discharge pump modification
- Unit 1 turbine driven auxiliary feedwater pump (TDCAP) turbine stop valve spurious trip

b. Findings

No findings were identified.

1R18 Plant Modifications

a. Inspection Scope

The inspectors reviewed the following three temporary plant modifications to verify the adequacy of the modification package and 10 CFR 50.59 screenings. Each 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.

- Engineering Change (EC) 105821, Leak injection downstream of 'C' RCS letdown to regenerative heat exchanger high point vent valve 2NV-869 and pipe cap
- EC 107305, Modify operation of cooling water supply valve 1RV-434 to 1B lower containment ventilation cooling system to account for incorrectly installed valve actuator
- EC 107341, Install temperature compensation for erratic 1D reactor coolant pump #1 seal outlet temperature sensor

b. Findings

No findings were identified.

1R19 Post Maintenance Testing

a. Inspection Scope

The inspectors reviewed the eight 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 function(s) 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 function(s). Documents reviewed are listed in the Attachment.

- Containment hydrogen purge outside isolation valve (1VE-6B) leak rate testing following leakage repair
- 1A DG load sequencer testing following transformer 1ATC replacement
- 1B DG testing following electrical and mechanical preventive maintenance
- SSF testing following preventive maintenance
- RN pump testing following installation of new debris SNSWP screens
- 1B1 component cooling water (KC) pump following preventive maintenance
- No. 3 1B DG room sump test following sump pump repairs
- Manual operation (stroke test) of 'D' Main Steam PORV Isolation valve 1SV-25 following actuator replacement

b. Findings

No findings were identified.

1R20 Refueling and Other Outage Activities

a. Inspection Scope

The inspectors evaluated licensee outage activities associated with the Unit 1 refueling outage that began September 17, 2011, and completed October 14, 2011. The inspectors conducted portions of the following activities associated with the refueling outage. Documents reviewed are listed in the Attachment.

- Observed activities to verify that the licensee maintained defense-in-depth commensurate with the outage risk control plan for key safety functions and applicable TS when taking equipment out of service
- Reviewed the licensee's responses to emergent work and unexpected conditions to verify that resulting configuration changes were controlled in accordance with the outage risk control plan
- Periodically reviewed the setting and maintenance of containment integrity, to establish that the reactor coolant system and containment boundaries were in place and had integrity when necessary
- Observed fuel handling operations during reactor core reload including review of the videotape core loading verification and alignment to verify that those operations and activities were being performed in accordance with TS and procedural guidance
- Observed the reinstallation of the reactor vessel head and upper internals to ensure the lifts were conducted in accordance the station procedures and heavy lift guidance
- Reviewed system lineups and/or control board indications to substantiate that TS, license conditions, and other requirements, commitments, and administrative procedure prerequisites for mode changes were met prior to changing modes or plant configurations
- Conducted containment walkdowns to inspect for overall cleanliness and material condition of plant equipment after the licensee completed their closeout inspection prior to restart
- Observed the approach to criticality, placing the main generator on-line which completed the refueling outage and portions of the power ascension activities
- Reviewed the items that had been entered into the CAP to verify that the licensee had identified outage related problems at an appropriate threshold

b. Findings

No findings were identified.

1R22 Surveillance Testing

a. Inspection Scope

For the five 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, the 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/4200/002, Standby Shutdown Facility Operability Test, Rev. 57

In-Service Tests
- PT/2/A/4208/002, NS Train B Valve Stroke Timing – Quarterly, Rev. 24

Reactor Coolant System Leakage Testing
- PT/1/A/4150/001B, Reactor Coolant System Leakage Calculation, Rev. 71

Containment Isolation Valve Testing

- PT/1/A/4200/001C, Isolation Valve Leak Rate Test, Rev. 114 (Enclosure 13.31)

Ice Condenser Systems Testing

- PT/0/A/4200/018, Unit 1 Ice Bed Analysis, Rev. 18

b. Findings

No findings were identified.

Cornerstone: Emergency Preparedness

1EP6 Drill Evaluation

a. Inspection Scope

Licensed Operator Simulator Emergency Preparedness Training: On November 9, 2011, the inspectors observed the performance of a simulator-based licensed operator requalification exam (ASE-106) that required implementation of emergency preparedness actions for the declaration of a Site Area Emergency. The simulator exam scenario involved a steam break outside containment, an anticipated transient without scram, and a main steam isolation valve failure to automatically isolate. The inspectors assessed emergency procedure usage, emergency plan classifications, notifications, and protective action recommendation development. The inspectors evaluated the adequacy of the licensee's conduct of the simulator examination and critique performance and verified that, as appropriate, performance weaknesses were captured in the licensee's operator training program or corrective action program.

Quarterly Site Emergency Preparedness Training Drill: On November 30, 2011, the inspectors reviewed and observed the performance of a quarterly licensee emergency preparedness training drill involving a main turbine manual trip due to high vibration, followed by a failure of the reactor to automatically trip and a subsequent steam generator tube rupture event. The inspectors assessed the licensee emergency procedure usage, emergency plan classifications, notifications, and protective action recommendation development. The inspectors evaluated the adequacy of the licensee's conduct of the drill and post-drill critique performance. The inspectors verified that the drill critique identified drill performance weaknesses and entered these items into the licensee's CAP.

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 last quarter of 2010 and first three quarters of 2011. To determine the accuracy of the PI data reported during that period, the inspectors compared the licensee's basis in

reporting each data element to the PI definitions and guidance contained in NEI 99-02, Regulatory Assessment Indicator Guideline, Rev. 6.

Barrier Integrity Cornerstone

- Reactor Coolant System (RCS) Specific Activity (Units 1 and 2)
- RCS Leak Rate Performance Indicator (Units 1 and 2)

The inspectors compared the licensee-reported performance indicator data with records developed by the licensee while analyzing previous samples. The inspectors observed a chemistry technician take and analyze an RCS sample. The inspectors reviewed surveillance test records of measured RCS identified leakage and compared these calculations with TS limiting values. The inspectors also reviewed the corrective action documents associated with these areas to determine whether the licensee identified and implemented appropriate corrective actions. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

4OA2 Problem Identification and Resolution

a. Inspection Scope

Review of Items Entered into the Corrective Action Program: As required by Inspection Procedure 71152, Identification and Resolution of Problems, 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 corrective action program. This was accomplished by reviewing copies of condition reports, attending some daily screening meetings, and accessing the licensee's computerized CAP database.

Semi-Annual Review to Identify Trends: As required by IP 71152, Problem Identification and Resolution, the inspectors performed a review of the licensee's CAP and associated documents to identify trends that could indicate the existence of a more significant safety issue. The inspectors review was focused on repetitive equipment issues, but also considered the results of daily inspector CAP item screenings, licensee trending efforts, and licensee human performance results. This review nominally considered the six month period of July 2011 through December 2011 although some examples expanded beyond those dates when the scope of the trend warranted. The review also included issues documented outside the normal CAP in major equipment problem lists, focus area reports, system health reports, self-assessment reports, and department PIP trending reports. The inspectors compared and contrasted their results with the results contained in the licensee's latest quarterly trend reports. Documents reviewed are listed in the Attachment.

Annual Sample Reviews: The inspectors reviewed the two issues listed below in detail to evaluate the effectiveness of the licensee's corrective actions for important safety issues.

- PIP M-11-7542, Poor configuration control of SSPS jumpers results in adverse impact on containment purge system
- PIP M-11-9185, Documentation of engineering self-assessment M-ENG-SA-11-19 of engineering change/UFSAR accuracy

The inspectors assessed whether the issues were 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

a. Inspection Scope

Quarterly Resident Inspector Observations of Security Personnel and Activities: 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.

Independent Spent Fuel Storage Installation (ISFSI): The inspectors reviewed revisions to the NAC-TN-32 and NAC-UMS FSARs made since the last inspection period to assess their impact on the licensee's ISFSI program. The inspectors also reviewed the corrective action documents issued concerning the ISFSI since September 20, 2010. The inspectors verified that no changes were made to the 10 CFR 72.212(b) evaluations for the McGuire ISFSI since the last inspection. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

4OA6 Meetings, Including Exit

On January 10, 2012, the resident inspectors presented the inspection results to Mr. Steven D. Capps and other members of the staff. The inspectors confirmed that proprietary information was not provided or examined during the inspection.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee
D. Brenton, Plant Operations Superintendent
D. Brewer, Safety Assurance Manager
S. Capps, Station Manager
J. Hicks, Maintenance Superintendent
G. Johnson, Corporate Health Physics
N. Kunkel, Work Control Superintendent
S. Mooneyhan, Radiation Protection Manager
J. Nolin, Mechanical and Civil Engineering Manager
R. Repko, Vice President - McGuire Nuclear Station
S. Russ, Security Manager
P. Schuerger, Training Manager
W. Scott, Chemistry Manager
S. Snider, Engineering Manager (Acting)

DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection

Readiness for Seasonal Extreme Weather Conditions
NSD 317, Freeze Protection Program, Rev. 3
PT/0/B/4700/038, Verification of Freeze Protection Equipment and Systems, Rev. 23
PT/0/B/4700/070, On Demand Freeze Protection Verification Checklist, Rev. 20
IP/1/B/3250/059B, Monthly Check of Freeze Protection, Rev. 6
IP/2/B/3250/059B, Monthly Check of Freeze Protection, Rev. 6
IP/0/B/3250/059F, Preventive Maintenance and Operational Check of Freeze Protection for SSF, Doghouses, CF Huts, Oil House, Turbine Building, Aux Roof, and Service Building Roof, Rev. 4

Section 1R04: Equipment Alignment

Partial System Walkdown
OP/1/A/6400/006A, Nuclear Service Water System Valve Checklists, Rev. 54
OP/1/A/6350/002, Diesel Generator, Rev. 110

Complete System Walkdown
UFSAR Section 5.5.7, Residual Heat Removal System
UFSAR Section 6.3, Emergency Core Cooling System
UFSAR Section 7.4.1.5, Systems Required for Safe Shutdown
McGuire Unit 1 RHR System Heath Reports (Q3-2011)
OP/1/A/6200/004, Residual Heat Removal System, Rev. 125
OP/1/A/6100/SU-14, Removing ND from Service, Rev. 27
OP/1/A/6100/SU-9, Mode 4 Checklist, Rev. 56
Drawing # MCFD-1561-01.00, Flow Diagram of Residual Heat Removal System, Rev. 17
PIP M-11-6811, 2B ND motor upper bearing high temperature
PIP M-11-3227, 2B ND motor lower bearing oil level
PIP M-10-7593, 2ND-32 actuator drive bushing damaged
PIP M-10-3872, Mission time guidance needed for acceptable pump motor oil leakage

Section 1R05: Fire Protection

MCS-1465.00-00-0008, Design Basis Specification for Fire Protection
AP/0/A/5500/045, Plant Fire, Rev. 13
FS/2/B/9000/046, Unit 2 Turbine Building Mezzanine (Fire Strategy #46), Rev. 0
PT/0/B/4600/121, Fire Drill, Rev. 4
RP/0/A/5700/025, Fire Brigade Response, Rev. 18
PIP M-11-8256, Poor housekeeping and excessive transient combustible material found in Unit 1 auxiliary building elevation 716, room 602
PIP M-11-8638, Fire drill weaknesses observed and fire drill critique weaknesses identified
PIP M-11-8781, Security related equipment may not be included in equipment database to ensure security awareness when degraded or impacted
PIP M-11-9505, Weaknesses in actions taken to address transient combustible materials found in Unit 1 auxiliary building room 602

Section 1R06: Flood Protection Measures

Drawings
MC-1768-01.01, Miscellaneous Sump Pump System Controls, Rev. 6
MC-1948-01.00, Electrical Equipment Layout Outdoor Area, Rev. 70

Other Documents
UFSAR Chapter 18.2.15, Inaccessible Non-EQ Medium Voltage Cables Aging Management
PIP M-11-9334, Minor issues identified during inspection of electrical manholes

Section 1R11: Licensed Operator Requalification

AP/1/A/5500/01, Steam Leak, Rev. 18
EP/1/A/5000/E-0, Reactor Trip or Safety Injection, Rev. 32
EP/1/A/5000/ES-1.1, Safety Injection Termination, Rev. 24
EP/1/A/5000/E-2, Faulted Steam Generator Isolation, Rev. 10
SOMP 01-07, Control Room Oversight, Rev. 0

Section 1R12: Maintenance Effectiveness

EDM-210, Engineering Responsibilities for the Maintenance Rule
SSC Function Scoping Database
RN System Health Report Action Plan
Cooling Pipe Blockage Detection, Document No.: PE2010-S30062-003, Rev. B
Drawing No.RN-102 &103, RN Suction Pipe Cleaning project Proposed Manway Locations
DG System Health Report 3Q 2011
Maintenance Rule SSC Summary Report, DG System
PIPs: M-11-7026, M-11-7170, M-11-7215, and M-11-7412

Section 1R13: Maintenance Risk Assessments and Emergent Work Evaluation

NSD 213, Risk Management Process, Rev. 10
Week 43 1B RN Unavailability Critical Plan
WO 1943571, RN Strainer Backwash Pump and piping between 1B RN strainer and B RN Return header
WO 1942568 IAE task for RN Strainer Backwash Pump power and controls and removal of 1RN26B limit switches, solenoid valves and instrument air supply.

Section 1R15: Operability Evaluations

NSD 203, Operability/Functionality, Rev. 23
PT/0/A/4200/018, Ice Bed Analysis, Rev. 18

MP/0/A/7150/076, Ice basket Weight Determination, Rev. 18
PIP M-11-7485, Basket weights discovered below safety analysis
PIP M-11-7542, Configuration control of jumpers not installed on SSPS A/B trains
PIP M-11-8441, Contingency action for critical plan utilized to restore operability of 1B RN System
PIP M-11-8839, Weaknesses in initial evaluation of #1 TDCA pump stop valve tripped on pump startup
PIP M-11-9423, Scaffolding irregularities identified in 2A ND and NS rooms
Week 43 1B RN Unavailability Critical Activity Plan
Work orders 01956691, 1942571, and 1942568

Section 1R18: Plant Modifications

NSD 301, Engineering Change Program, Rev. 38
NSD 601, Engineering Change Manual, Rev. 14
OMP 10-2, Temporary Engineering Changes, Rev. 13
Work Orders 1976283, 2008875, and 2014241
MCS-1554.NV-00.0001, Design Basis Specification for the NV System
MCS-1576.VU-00-0001, Design Basis Specification for VL/VR/VT/VU Systems
MCS-1604.RV-00-0001, Design Basis Specification for the Containment Ventilation Cooling (RV) System

Section 1R19: Post-Maintenance Testing

PT/1/A/4200/001P, Penetration Leak Rate Test, Rev. 26
PT/1/A/4350/004A, 1A D/G Periodic and Load Sequencer Test, Rev. 27
OP/A/6350/002, Diesel Generator, Rev. 111
PT/1/A/4350/002B, Diesel Generator 1B Operability Test, Rev. 91
PT/0/A/4200/002, Standby Shutdown Facility Operability Test, Rev. 57
TT/0/A/9100/637, SNSWP Foulant Barrier-Wire Test After Completion of EC-105553, Rev. 1
PT/1/A/4401/001B, KC Train 1B Performance Test, Rev. 67
PT/1/A/4355/001D, 1B3 Diesel Generator Room Sump Pump Performance Test, Rev. 13
PT/1/A/4250/033, SM PORV and PORV Isolation Valve Movement Test, Rev. 12

Section 1R20: Refueling and Other Outage Activities

NSD 403, Shutdown Risk Management, Rev. 23
OP/1/A/6100/SD-25, Core Alterations Checklist, Rev. 13
OP/1/A/6100/SU-1, Mode 6 and Core Alterations Checklist, Rev. 42
OP/1/A/6100/SU-3, Mode 5 Checklist, Rev. 28
OP/1/A/6100/SU-5, Filling the NC System, Rev. 44
OP/1/A/6100/SU-6, Venting the NC System, Rev. 27
OP/1/A/6100/SU-8, Heatup to 200 Degrees F, Rev. 43
OP/1/A/6100/SU-9, Mode 4 Checklist, Rev. 56
OP/1/A/6100/SU-10, Heatup Checklist, Rev. 13
OP/1/A/6100/SU-15, Mode 3 Checklist, Rev. 42
OP/1A/6100/SU-20, Modes 1 and 2 Checklist, Rev. 34
OP/1/A/6300/001, Turbine Generator Startup/Shutdown, Rev. 91
OP/1/A/6300/003, Controlling Procedure for Unit Operation, Rev. 173
PT/1/A/4150/021, Post Refueling Controlling Procedure for Criticality, Zero Power Physics, & Power Escalation Testing, Rev. 111
PT/0/A/4150/028, Initial Criticality and Zero Power Physics Testing, Rev. 60
PT/0/A/4150/033, Total Core Reloading, Rev. 62
PT/0/A/4150/046, Containment Walkdown, Rev. 4

PT/1/A/4200/002C, Containment Closure, Rev. 78
MP/0/A/7650/141, Fuel Transfer System Operation, Rev. 17
MP/0/A/7650/146, Operation of Rx Building Manipulator Crane, Rev. 26
MP/0/A/7650/148, Operation of Fuel Building Manipulator Crane, Rev. 39
MP/0/A/7650/161, Fuel Handling and Core Alterations Prerequisites Procedure, Rev. 13
MP/1/A/7150/124, Unit 1 Containment Vessel Equipment Hatch Opening and Closure, Rev. 17
MP/0/A/7700/101, Reactor Building Coating Inspection, Rev. 2
MSD 585, Reactor Building Personnel Access and Material Control, Rev. 15
PIP M-11-7863, Debris identified in Unit 1 containment during closeout walkdown

Section 4OA2: Identification and Resolution of Problems

NSD 208, Problem Investigation Process (PIP), Rev. 33
NSD 220, UFSAR Revision Process, Rev. 12
NSD 607, Self-Assessments, Benchmarking, and Observations, Rev. 15
EDM-601, Engineering Change, Rev. 14
PIPs: M-10-4842, M-10-5718, M-11-4909, M-11-5463, M-11-5787, M-11-3717, M-11-3939, M-11-5515, M-11-5931, M-11-7581, M-11-9615, M-11-4608, M-11-5438, M-11-6950, M-11-9277, M-11-5912, M-11-6592, M-11-8030, M-11-8777, and M-11-6732

Section 4OA5: Other Activities

PIPs: M-10-6860, M-11-7331, M-11-7508, M-11-7339, M-11-3741, and M-11-3863