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

July 28, 2015

Mr. Steven D. Capps
Site 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 05000369/2015002 AND 05000370/2015002

Dear Mr. Capps:

On June 30, 2015, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your McGuire Nuclear Station Units 1 and 2. On July 9, 2015, the NRC inspectors discussed the results of this inspection with you and other members of your staff. Inspectors documented the results of this inspection in the enclosed inspection report.

NRC inspectors documented one finding of very low safety significance (Green) in this report. The finding involved a violation of NRC requirements. The NRC is treating this violation as a non-cited violation (NCV) consistent with Section 2.3.2.a of the Enforcement Policy. If you contest the violation or the significance of the NCV, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the 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. Also, if you disagree with a cross-cutting aspect assignment in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region II; 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 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,

/RA/

Frank Ehrhardt, 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 05000369/2015002
and 05000370/2015002
w/Attachment - Supplemental Information

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ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

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NAME	J. Zeiler	R. Cureton	W. Loo	J. Rivera	J. Worosilo	F. Ehrhardt	
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Letter to Steven D. Capps from Frank Ehrhardt dated July 28, 2015

SUBJECT: MCGUIRE NUCLEAR STATION - NRC INTEGRATED INSPECTION REPORT 05000369/2015002 AND 05000370/2015002

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U.S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos.:	50-369, 50-370
License Nos.:	NPF-9, NPF-17
Report No.:	05000369/2015002, 05000370/2015002
Licensee:	Duke Energy Carolinas, LLC
Facility:	McGuire Nuclear Station, Units 1 and 2
Location:	Huntersville, NC 28078
Dates:	April 1, 2015, through June 30, 2015
Inspectors:	J. Zeiler, Senior Resident Inspector R. Cureton, Resident Inspector W. Loo, Senior Health Physicist (Sections 2RS7 and 4OA1) J. Rivera, Health Physicist (Sections 2RS6 and 4OA1)
Approved by:	Frank Ehrhardt, Chief Reactor Projects Branch 1 Division of Reactor Projects

.Enclosure

SUMMARY OF FINDINGS

IR05000369/2015002, IR05000370/2015002; 04/01/2015 – 06/30/2015; McGuire Nuclear Station, Units 1 and 2; Fire Protection.

The report covered a three month period of inspection by the resident inspectors and two regional inspectors. One Green finding, which was determined to involve a non-cited violation (NCV) of NRC requirements, was identified. The significance of inspection findings are indicated by their color (i.e., greater than Green, or Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process (SDP)," dated April 29, 2015. Cross-cutting aspects are determined using IMC 0310, "Aspects Within The Cross-Cutting Areas," dated December 4, 2014. All violations of NRC requirements are dispositioned in accordance with the NRC's Enforcement Policy, dated 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," Revision (Rev.) 5.

Cornerstone: Mitigating Systems

- Green: An NRC-identified Green NCV of Technical Specification (TS) 5.4.1.d, "Procedures," was identified for failure to evaluate and establish adequate compensatory measures for an impaired fire protection automatic water sprinkler system. Specifically, a solid deck scaffold platform was erected below a sprinkler system spray nozzle that would have obstructed the nozzle spray pattern protecting safe shutdown equipment involving the 2B2 component cooling water pump/motor. The licensee entered the issue into the corrective action program (CAP) as nuclear condition report (NCR) 01931412 and implemented immediate corrective actions to remove the scaffolding obstructing the sprinkler nozzle.

  The failure to evaluate scaffolding obstruction of a sprinkler system spray nozzle and implement required fire protection compensatory actions was a performance deficiency (PD). The PD was more than minor because it was associated with the mitigating systems cornerstone attribute of protection against external factors (fire) and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the failure to provide adequate compensatory actions for an obstructed sprinkler nozzle would have reduced the licensee's ability to quickly extinguish fires in the area. The finding was screened in accordance with NRC IMC 0609, "Significance Determination Process," Attachment 4, "Initial Characterization of Findings." Using the guidance in IMC 0609, Appendix F, Attachment 1, "Fire Protection SDP Phase 1 Worksheet, the finding was assigned a category of fixed fire protection systems. The inspectors determined the finding to be of very low safety significance (Green), because it was assigned a "low degradation" rating that was based upon meeting the criteria described in IMC 0609, Appendix F, Attachment 2, "Degradation Rating Guidance Specific to Various Fire Protection Program Elements." Specifically, less than ten percent of the sprinkler nozzles were nonfunctional, there were functional nozzles within five feet of the combustibles of concern, and the system was nominally code compliant. The finding had a cross-cutting aspect of procedure adherence in the human performance area, because the licensee failed to follow scaffolding erection procedures which explicitly required not erecting scaffolding that could obstruct sprinkler nozzles unless approved by a fire protection engineer and necessary compensatory actions were implemented (H.8). (Section 1R05)

REPORT DETAILS

Summary of Plant Status

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

Unit 2 operated at approximately 100 percent RTP for the entire inspection period.

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 preparations for upcoming hot weather conditions. This included field walkdown to assess the equipment that might be susceptible to hot weather conditions including the Unit 1 and Unit 2 emergency diesel generator rooms, exterior doghouses, and ventilation cooling to the safety-related battery rooms. The inspectors reviewed the station hot weather alignment procedure and verified actions were completed as required by the procedure. The inspectors discussed specific hot weather preparation measures with operations personnel to determine the scope of the preparations and to determine the effectiveness during hot weather periods. The inspectors reviewed control room alarms and annunciators to verify that if any pertain to hot weather equipment issues, the licensee was taking appropriate actions to address the underlying problems. The inspectors attended plant management meetings and several hot weather management review meetings where the status of preparations for hot weather were discussed along with potential hot weather condition equipment challenges. In addition, the inspectors reviewed selected problem investigation program (PIP) reports in the licensee's CAP related to previous or current hot weather equipment challenges to ensure that adverse conditions were being identified and appropriately addressed in a manner commensurate with their significance. Documents reviewed are listed in the Attachment.

Summer Readiness of Offsite & Alternate AC Power Systems: The inspectors evaluated plant features, procedures for operation, and continued availability of offsite and alternate AC power systems to determine whether they were appropriate for the circumstances. The inspectors reviewed the licensee's procedures affecting these areas and the communications protocols between the transmission system operator and the plant to determine whether the appropriate information was exchanged when issues arise that could impact the offsite power system. The inspectors discussed any outstanding corrective work orders or corrective action documents with the offsite power and alternate AC power systems with system engineers. The inspectors walked down the alternate AC system (standby shutdown facility (SSF)) to determine system readiness for summer conditions.

The inspectors walked down the offsite power system with the operations switchyard representative to review system deficiencies and their impact on the ability of the system to perform its intended function. Documents reviewed are listed in the Attachment.

Readiness for Impending Adverse Weather Conditions: The inspectors reviewed the effectiveness of the licensee's implementation of severe weather program response actions for a tornado watch issued on April 19, 2015, for Northern Mecklenburg County. This included responding to the control room following announcement of the condition on the plant public address system and observing licensee actions required by emergency procedure RP/0/A/5700/006, "Natural Disasters," Rev. 28. The inspectors independently reviewed the weather conditions and official warnings from the National Weather Service and Duke Energy Meteorological Group. The inspectors verified the licensee implemented appropriate actions to protect personnel and mitigating system equipment from adverse weather effects in accordance with the procedure.

b. Findings

No findings were identified.

1R04 Equipment Alignment

a. Inspection Scope

Partial Walkdowns: The inspectors performed a partial walkdown of the following three systems to assess the operability of redundant or diverse trains and components when safety equipment was inoperable or degraded. 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.

- Train A nuclear service water (RN) system while Train B RN was out of service for planned 5-year preventive maintenance inspection of suction piping
- Train A control room area chill water (YC) system chiller while the Train B YC chiller was out of service for planned cleaning and inspection
- 2A emergency diesel generator (EDG) while the 2B EDG was out of service for a planned down day

Complete System Walkdown: The inspectors conducted a detailed review of the Unit 2 Train B component cooling water (KC) 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) verification of correct valve positions and leak tightness of valve packing; (2) availability of electrical power; (3) correct labeling, cooling, and lubrication of system components; (4) correct installation and functionality of hangers and supports; (5) proper configuration and functionality of essential support systems; (6) adequacy of area housekeeping and control of transient combustibles; and (7) accuracy and appropriateness of component tagging and clearances. To determine the effect of outstanding design issues on the operability of the system, the inspectors reviewed the operator workaround list, the temporary modification list, and system health reports. 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 five 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, 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 they were consistent with the fire protection program and presented an adequate firefighting strategies. Documents reviewed are listed in the Attachment.

- Unit 1 and Unit 2 auxiliary building 695 elevation (Fire Area 1)
- 1A and 1B EDG rooms (Fire Areas 5 and 6)
- Unit 2 KC pumps in auxiliary building 750 elevation (Fire Area 21)
- Unit 1 and Unit 2 auxiliary building 716 elevation (Fire Area 4)
- Unit 1 and Unit 2 spent fuel cooling pump rooms (Fire Area 21)

b. Findings

Impaired Fire Suppression Sprinkler System Associated with 2B2 KC Pump

Introduction: An NRC-identified Green NCV of TS 5.4.1.d, "Procedures," was identified for the licensee's failure to evaluate and establish adequate compensatory measures for an impaired fire protection automatic water sprinkler system. Specifically, a solid deck scaffold platform was erected below a sprinkler system spray nozzle that would have obstructed the nozzle spray pattern protecting safe shutdown equipment involving the 2B2 KC pump/motor.

Description: On June 12, 2015, during a walkdown inspection of the Unit 2 Train B KC system, the inspectors noted scaffolding was erected directly above the 2B2 KC pump/motor. The scaffolding was built with a solid deck working platform (except for a small opening where the motor cooling pipe passed through) that measured approximately 4-1/2 foot wide by 5 foot long and was located 14-15 inches below one of the water sprinkler system spray nozzles designed to protect the 2B2 KC pump/motor from fires. The inspectors determined that the spray pattern of the nozzle would have been substantially obstructed due to the size and location of the scaffold platform. This conditioni would have degraded the fire suppression capability of the sprinkler system. The control tag attached to the scaffolding indicated it had been erected since March 15, 2014, to unclog a drain pipe in the ceiling above the KC pump.

The inspectors reviewed the licensee's scaffolding erection control procedure, "Duke Energy Nuclear Scaffold Manual," Rev. 7. Section 100.5.2 of the procedure stated that scaffolding shall not be erected to obstruct the spray pattern of fire suppression spray nozzles and if the spray pattern is obstructed, contact the fire protection engineer for approval and implement any necessary contingency measures. The procedure provided guidance that the spray pattern is considered obstructed if a solid scaffold deck is within a 4 feet radius and less than 18 inches below the nozzle. The inspector determined that the observed scaffold above the 2B2 KC pump did not meet the requirements of the licensee's scaffold installation procedure. In addition, the inspectors noted that two long term scaffold evaluations had been conducted by the licensee, due to the scaffolding being installed greater than 60 days, and neither of these evaluations had identified the discrepancy.

Nuclear System Directive (NSD) 316, "Fire Protection Impairment and Surveillance," Rev. 16, required compensatory actions to be implemented for impaired fire protection features that are committed to in UFSAR Chapter 16.0, "Selected Licensee Commitments." SLC 16.9.2, "Spray and/or Sprinkler Systems," required that sprinkler systems in Table 16.9.2-1 shall be functional whenever equipment protected by the sprinklers (which included the 2B2 KC pump/motor) is required to be operable. In accordance with SLC 16.9.2, with one or more required spray/sprinkler systems non-functional, a continuous fire watch with backup fire suppression equipment shall be implemented within one hour. The inspectors reviewed the licensee's NSD 316 fire protection impairment logs and found that there had not been any evaluation performed for the obstructed spray nozzle and no compensatory actions had been implemented for the impairment.

The licensee took immediate corrective actions to evaluate the discrepancy and directed the removal of the scaffolding.

Analysis: The licensee's failure to evaluate scaffolding obstruction of a sprinkler system spray nozzle and implement required fire protection compensatory actions was a PD. The PD was more than minor because it was associated with the mitigating systems cornerstone attribute of protection against external factors (fire) and adversely affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the failure to provide adequate compensatory actions for an obstructed sprinkler nozzle would have reduced the licensee's ability to quickly extinguish fires in the area. The finding was screened in accordance with NRC IMC 0609, "Significance Determination Process," dated April 29, 2015, Attachment 4, "Initial Characterization of Findings," dated June 19, 2012. Using the guidance in IMC 0609, Appendix F, Attachment 1, "Fire Protection SDP Phase 1 Worksheet, dated September 20, 2013, the finding was assigned a category of fixed fire protection systems. The inspectors determined the finding to be of very low safety significance (Green), because it was assigned a "low degradation" rating that was based upon meeting the criteria described in IMC 0609, Appendix F, Attachment 2, "Degradation Rating Guidance Specific to Various Fire Protection Program Elements," dated February 28, 2005. Specifically, less than ten percent of the sprinkler nozzles were nonfunctional, there were functional nozzles within five feet of the combustibles of concern, and the system was nominally code compliant. The finding had a cross-cutting aspect of procedure adherence in the human performance area, because the licensee failed to follow scaffolding erection procedures which explicitly required not erecting scaffolding that could obstruct sprinkler nozzles unless approved by a fire protection engineer and necessary compensatory actions were implemented (H.8).

Enforcement: TS 5.4.1.d, "Procedures," required, in part, that applicable procedures covered by commitments contained in UFSAR Chapter 16.0, "Selected Licensee Commitments," be established, implemented, and maintained. SLC 16.9.2, "Spray and/or Sprinkler Systems," required that spray/sprinkler systems in Table 16.9.2-1 shall be functional whenever equipment protected by the sprinklers (which included the 2B2 KC pump/motor) is required to be operable. In accordance with SLC 16.9.2, with one or more required spray/sprinkler systems non-functional, a continuous fire watch with backup fire suppression equipment shall be implemented within one hour. Procedure NSD 316, "Fire Protection Impairment and Surveillance," implements the licensee's fire impairment control program and required that compensatory actions be implemented for conditions that impair fire protection features, such as spray/sprinkler systems, as delineated by SLC 16.9.2. Contrary to the above, from March 15, 2014, to June 12, 2015, the licensee failed to adequately implement adequate fire compensatory actions (continuous fire watches) for an impaired sprinkler system nozzle for the 2B2 KC pump that was obstructed by scaffolding. The licensee took immediate corrective actions to remove the scaffolding obstructing the sprinkler nozzle and entered the issue into their CAP as NCR 01931412. This violation is being treated as an NCV consistent with Section 2.3.2 of the NRC Enforcement Policy. (NCV 05000370/2015002-01, Failure to Establish Compensatory Actions for Obstructed Fire Sprinkler Spray Nozzle.)

1R06 Flood Protection Measures

a. Inspection Scope

Internal Flooding Reviews: The inspectors reviewed the UFSAR and the licensee's flooding analysis to determine which plant areas were subject to internal flooding and contained safety-related equipment or important to safety equipment. The inspectors walked down the SSF to determine whether the area configuration and flood protection barriers and equipment were consistent with the descriptions and assumptions described in UFSAR and licensee flooding analysis. The inspectors examined the state of functional readiness of flood protection equipment (i.e., flood barriers, sump pumps, and sump level instrumentation) to confirm that the equipment was being properly maintained in a state of functional readiness. The inspectors examined the condition of floor electrical cable trenches to ensure that there was no standing water or evidence of previous water intrusion into the trenches. The inspectors reviewed operator building rounds sheets to ensure that operators were monitoring the material condition of the flood mitigation equipment on a routine basis. The inspectors reviewed the licensee's CAP database to ensure that any SSF building flood mitigation equipment issues were being identified and resolved commensurate with their safety significance. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

1R07 Heat Sink Performance - Annual Resident Inspection

a. Inspection Scope

The inspectors selected the Train B YC system condenser heat exchanger based on its risk significance and observed the inspections and/or performance tests, or reviewed the results, to determine whether the heat exchanger was ready and available to perform its intended functions as described in the UFSAR. The inspectors evaluated whether the frequency of inspection was sufficient to detect degradation prior to loss of heat removal capabilities below design requirements; that the heat exchanger inspection results were appropriately categorized against pre-established engineering acceptance criteria, including the impact of tubes plugged on the heat exchanger performance; that the licensee had developed adequate acceptance criteria for bio-fouling controls; and that the heat exchanger was properly reassembled with regard to end-bell orientation. 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

Quarterly Resident Inspector LOR Activity Review: On May 27, 2015, the inspectors observed operators in the plant simulator during a licensed operator requalification annual simulator examination. The simulator examination involved two scenarios as follows: 1) failure of the 1C steam generator power operated relief valve (PORV) in the open position; 50 percent turbine load rejection due to loss of Busline 1A; and loss of all AC power, and 2) failure of a pressurizer spray valve in the open position; generator zone lockout resulting in a turbine/generator and reactor trip; and stuck open pressurizer PORV resulting in a loss of coolant accident. 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 if the licensee identified deficiencies and discrepancies that occurred during the simulator examination. Documents reviewed are listed in the Attachment.

Quarterly Resident Inspector Licensed Operator Performance Review: On June 23, 2015, the inspectors observed operators in the Unit 2 main control room during the performance of starting and stopping the 2A centrifugal charging pump for maintenance functional testing. In addition, the pump start needed to be coordinated with a 2A EDG run, which was being run concurrently, due to load concerns on the 2A essential bus. The inspectors assessed the adequacy of overall crew performance, clarity and formality of communications, use of procedures, alarm response, control board manipulations, reactivity management controls, and supervisory oversight. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness

a. Inspection Scope

The inspectors reviewed the two issues 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.

- PIP M-15-00141, Unit 1 RN supply to the Train B KC heat exchanger valve 1RN-187B failed in the open position
- PIP M-15-1522, Bearing fault identified on the Train B control room air handling unit (AHU)

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 risk management actions used to manage risk for the plant configurations associated with the six 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.

- Critical Activity Plan for the five year preventative maintenance on 2EMXG
- Yellow risk on Unit 1 and Unit 2 during complex activity plan for inspection of the suction supply piping of the Train B RN system
- Risk plan for emergent work on the Train B control room AHU after operability could not be established due to high motor vibrations
- Critical Activity Plan for replacement of the EVCD Vital Batteries
- Yellow risk on Unit 2 during unavailability of the 2B EDG during a planned complex activity plan
- Yellow risk on Unit 2 during replacement of circuitry card for 2C steam generator flow control valve 2CF-20AB positioner

b. Findings

No findings were identified.

1R15 Operability Determinations and Functionality Assessments

a. Inspection Scope

The inspectors reviewed the six technical evaluations listed below to determine whether 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.

- PIP M-15-2518, Unfiltered inleakage found during Train B control room ventilation smoke test
- PIP M-15-2535, Operability of vital battery EVCC with test equipment attached to terminals
- PIP M-15-3133, Deficiencies identified in plant scaffolding erections near safety-related equipment
- PIP M-15-3316, Potential issue with the compatibility of greases used in the control room air handling unit motor
- PIP M-15-3586, Excessive 2B centrifugal charging pump (NV) ouboard seal leakage
- PIP M-15-3498, Discrepency between original field wiring and vendor drawings associated with EVCC and EVCD battery replacements

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.

- 1A and 2A RN system functional testing following installation of 30-inch wet tap in suction piping from the standby nuclear service water pond
- 2A EDG starting air solenoid valves 2VG-61 and 2VG-62 functional testing following scheduled preventative maintenance
- Vital battery EVCD functional testing following replacement
- Steam generator 2C level control functional testing following replacement of level controller circuitry card
- 1A motor driven auxiliary feedwater pump following scheduled preventative maintenance

- 1A EDG staring air solenoid valve 1VG-63 functional testing following scheduled preventative maintenance

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. 62
- PT/2/A/4209/001C, Standby Makeup Pump Flow Periodic Test, Rev. 40
- PT/1/A/4208/001A, 1A Containment Spray (NS) Pump Performance Test, Rev. 72
- PT/1/A/4208/010A, NS 1A Heat Exchanger Heat Balance Test, Rev. 52

In-Service Tests
- PT/1/A/4204/001A, 1A Residual Heat Removal (ND) Pump Performance Test, Rev. 84

b. Findings

No findings were identified.

Cornerstone: Emergency Preparedness

1EP6 Drill Evaluation

a. Inspection Scope

Quarterly Site Emergency Preparedness Training Drill: On May 27, 2015, the inspectors reviewed and observed the performance of two simulator-based licensed operator requalification examination that required implementation of emergency preparedness actions for declaration of an Alert Emergency. The two examination scenarios involved a loss of all AC power event and a reactor coolant system loss of coolant accident. The inspectors assessed the licensee's emergency procedure usage, emergency plan classifications, and notifications. 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 CAP. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

2. RADIATION SAFETY (RS)

Cornerstones: Occupational Radiation Safety (OS) and Public Radiation Safety (PS)

2RS6 Radioactive Gaseous and Liquid Effluent Treatment

a. Inspection Scope

Event and Effluent Program Reviews: The inspectors reviewed the 2013 and 2014 annual radiological effluent release report (ARERR) documents for consistency with the requirements in the offsite dose calculation manual (ODCM) and TS details. Routine and abnormal effluent release results and reports, as applicable, were reviewed and discussed with responsible licensee representatives. Status of the radioactive gaseous and liquid effluent processing and monitoring equipment and activities, and changes thereto, as applicable, described in the UFSAR and current ODCM were discussed with responsible staff.

Walk-Downs and Observations: The inspectors walked-down selected components of the gaseous and liquid discharge systems to ascertain material condition, configuration and alignment. Walkdowns included visual inspections of 0 EMF-49 waste liquid radiation monitor, 1 and 2 EMF-35, unit vent particulate radiation monitors, 1 and 2 EMF-36, unit vent gaseous radiation monitors, and 1 and 2 EMF-37, unit vent iodine radiation monitors. To the extent practical, the inspectors observed the material condition of abandoned in place liquid waste processing equipment for indications of degradation or leakage that could constitute a possible release pathway to the environment.

Sampling and Analyses: There were no opportunities to observe the collection and preparation of the samples for counting, administrative processing and implementation for any liquid or gaseous effluent releases. However, the inspectors reviewed the results of the radiation protection count room's inter-laboratory comparison program and discussed with cognizant licensee personnel.

Dose Calculations: The inspectors reviewed changes in reported dose values relative to previous ARERR reporting periods. The inspectors reviewed and evaluated selected waste gas decay tank and liquid effluent releases. The evaluations included review of set point determinations and dose calculation summaries. Updated results for the most recent land use census data were evaluated against assumptions used to calculate offsite dose results. In addition, the inspectors reviewed selected abnormal release data and resultant dose calculations for calendar years (CYs) 2013 and 2014.

Ground Water Protection Implementation: The licensee's implementation of the industry ground water protection initiative was reviewed for changes since the last inspection. Groundwater sampling results obtained since the last inspection were reviewed.

Licensee response, evaluation, and follow-up to spills and leaks since the last inspection were reviewed in detail. In addition, entries made into the 10 CFR 50.75(g) records for identified leakage and spills were reviewed.

Problem Identification and Resolution: The inspectors reviewed selected CAP documents in the areas of effluent processing and groundwater protection. The inspectors evaluated the licensee's ability to identify, characterize, prioritize, and resolve the identified issues in accordance with licensee procedures.

Effluent process and monitoring activities were evaluated against details and requirements documented in the UFSAR Sections 11 and 12; SLC Section 16, TS Sections 5.4.1, "Procedures," 5.5, "Programs and Manuals," and 5.6, "Reporting Requirements;" ODCM; 10 CFR Part 20; 10 CFR, Appendix I to Part 50; and approved licensee procedures. In addition, ODCM and UFSAR changes since the last onsite inspection were reviewed against the guidance in NUREG-1301 and Regulatory Guide (RG) 1.109, RG 1.21, and RG 4.1. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

2RS7 Radiological Environmental Monitoring Program (REMP)

a. Inspection Scope

REMP Status and Results: The inspectors reviewed recent changes applicable to radiological environmental and meteorological monitoring program activities detailed in the UFSAR, and ODCM. Environmental monitoring sample results presented in the annual radiological environmental operating report (AREOR) documents issued for CYs 2013 and 2014 were reviewed. The REMP vendor laboratory cross-check program results, and select procedural guidance for collection, processing and analysis of airborne particulate and iodine, broadleaf vegetation, fish, food products, milk, shoreline sediment, and surface/drinking water were reviewed. Detection level sensitivities as documented within the AREOR for selected environmental media analyzed by the vendor environmental laboratory were reviewed. The AREOR environmental measurement results were reviewed for consistency with licensee ARERR data and evaluated for radionuclide concentration trends.

Site Inspection: The inspectors observed and discussed implementation of selected REMP monitoring and sample collection activities for atmospheric particulates and iodine and drinking and surface water, and observed locations of selected direct radiation measurements, and broadleaf vegetation samples sites as specified in the current ODCM and applicable procedures. The inspectors observed the material conditions for selected airborne equipment and thermoluminescent dosimeters. The inspectors evaluated operability for the weekly airborne particulate filter and iodine cartridge change-outs at seven atmospheric sampling stations. Also, the inspectors observed the collection of five drinking water and three surface water sampling stations and evaluated the operability of the composite water sampling stations. In addition, the

inspectors discussed broadleaf vegetation sampling for selected ODCM locations observed during the inspection. Monitoring and impact of licensee routine releases on offsite doses based on meteorological dispersion parameters and gardens locations identified in the most current land use census were reviewed in detail. Actions for missed environmental samples, including compensatory measures and/or availability of replacement equipment, were reviewed and discussed with knowledgeable staff. In addition, sample pump calibration and maintenance records for selected environmental air monitoring equipment and composite water samplers were reviewed.

The current status and completeness of the licensee's 10 CFR 50.75(g) decommissioning files were reviewed and discussed with cognizant licensee representatives. Structures, systems, and components that could potentially leak material into the groundwater were also reviewed and discussed with cognizant licensee representatives.

The inspectors toured the primary meteorological tower and observed the weekly channel verification on the meteorological instrumentation. The inspectors observed the physical condition of the tower and associated instruments and discussed equipment operability and maintenance history with cognizant licensee representatives. For the meteorological measurements of wind speed, wind direction, and temperature, the inspectors reviewed applicable meteorological tower instrumentation semi-annual calibration records and evaluated meteorological measurement data recovery for CYs 2013 and 2014.

Problem Identification and Resolution: The inspectors reviewed selected CAP documents in the area of radiological environmental monitoring. The inspectors evaluated the licensee's ability to identify, characterize, prioritize, and resolve the identified issues in accordance with licensee procedures.

Procedural guidance, program implementation, quantitative analysis sensitivities, and environmental monitoring results were reviewed against 10 CFR Part 20; 10 CFR Part 50; TS Sections 5.4.1, "Procedures," 5.5, "Programs and Manuals," and 5.6, "Reporting Requirements;" ODCM, Rev. 54; RG 4.15, "Quality Assurance for Radiological Monitoring Programs (Normal Operation) - Effluent Streams and the Environment;" SLC 16.11.3, "Radiological Environmental Monitoring Program;" and the Branch Technical Position, "An Acceptable Radiological Environmental Monitoring Program - 1979." Licensee procedures and activities related to meteorological monitoring were evaluated against ODCM; Safety Guide 1.23, "Onsite Meteorological Programs;" and SLC 16.7.3, "Meteorological Instrumentation." Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator (PI) Verification

a. Inspection Scope

The inspectors sampled licensee data to confirm the accuracy of reported PI data for the following eight indicators. To determine the accuracy of the PI data reported for the period reviewed, 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. 7, as well as licensee procedural guidance for collecting and documenting PI information. Documents reviewed are listed in the Attachment.

Mitigating Systems Cornerstone

- Safety System Functional Failures (Unit 1 and 2)
- Mitigating Systems Performance Index (MSPI) – Emergency Power (Units 1 and 2)
- MSPI – High Pressure Injection (Units 1 and 2)

The inspectors reviewed the PI results for the Mitigating Systems Cornerstone from April 2014 through March 2015. For the assessment period, the inspectors independently screened TS Action Item logs, selected control room logs, the CAP database, and maintenance rule database, to confirm if equipment unavailability/unreliability hours and failure data were properly reported.

Occupational Radiation Safety Cornerstone

- Occupational Exposure Control Effectiveness

The inspectors reviewed the PI results for the Occupational Radiation Safety Cornerstone from October 2014 through March 2015. For the assessment period, the inspectors reviewed electronic dosimeter alarm logs and selected CAP documents related to controls for exposure significant areas.

Public Radiation Safety Cornerstone

- Radiological Control Effluent Release Occurrences

The inspectors reviewed the PI results for the Public Radiation Safety Cornerstone from October 2014 through March 2015. For the assessment period, the inspectors reviewed cumulative and projected doses to the public and CAP documents related to Radiological Effluent TSs/ODCM issues including abnormal effluent releases.

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 IP 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.

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 January 2015 - June 2015 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 issue listed below in detail to evaluate the effectiveness of the licensee's corrective actions for important safety issues.

- PIP M-14-10857, 1NI-60 exhibiting excessive leakage during Mode 4 pressure isolation valve testing

The inspectors assessed whether 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

Independent Spent Fuel Storage Installation (IP 60855.1)

a. Inspection Scope

The inspectors reviewed the licensee's procedures and observed operations associated with storing spent fuel in the independent spent fuel storage installation in accordance with Inspection Procedure 60855.1. The inspectors observed selected licensee activities related to the loading of cask number 27 to verify that they were performed in a safe manner and in compliance with approved procedures. The inspectors observed the cask loading to verify that the alpha-numeric identification numbers stamped on the loaded fuel assemblies and burnable poison assemblies matched the identification numbers designated in the associated documentation packages. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

4OA6 Meetings, Including Exits

On July 9, 2015, the resident inspectors presented the inspection results to Mr. Steven Capps and other members of his staff. The inspectors confirmed that proprietary information was not provided or examined during the inspection.

ATTACHMENT: SUPPLEMENTARY INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee
B. Anderson, Superintendent of Operations
D. Black, Security Manager
D. Brenton, Maintenance Superintendent
S. Capps, Vice President, McGuire Nuclear
K. Crane, Senior Licensing Specialist
J. Gabbert, Chemistry Manager
J. Glenn, Organizational Effectiveness Manager
M. Kelly, Outage and Scheduling Manager
S. Mooneyhan, Radiation Protection Manager
C. Morris, Station Manager
J. Robertson, Regulatory Affairs Manager
P. Schuerger, Training Manager
T. Sigmon, Supervising Scientist, EnRad Laboratories
S. Snider, Engineering Manager
C. Whitener, Supervising Scientist

LIST OF REPORT ITEMS

Opened and Closed

05000370/2015002-01	NCV	Failure to Establish Compensatory Actions for Obstructed Fire Sprinkler Spray Nozzle (Section 1R05)

DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection

Readiness for Seasonal Extreme Weather Conditions
PT/0/B/4700/039, Warm Weather Equipment Checkout, Rev. 20
Action Register Update Reports associated with summer readiness actions
Selected hot weather equipment corrective and preventive work orders

Summer Readiness of Offsite & Alternate AC Power Systems
Nuclear Switchyard Interface Agreement, Rev. 5
Nuclear Switchyard Operating Guidelines, Rev. 9
NSD 417, Generation Risk Management Process, Rev. 17
OMP 13-02, Control of Switchyard Activities, Rev. 7
AP/1/A/5500/05, Generator Voltage and Electrical Grid Disturbances, Rev. 13
MCC-1381.06-00-0068, MNS Degraded Grid Voltage Alarm Setpoints for Real Time Contingency, Rev. 22

Section 1R04: Equipment Alignment

Partial System Walkdown

OP/1/A/6400/006, Nuclear Service Water System, Rev. 243
OP/2/A/6400/006, Nuclear Service Water System, Rev. 184
OP/1/A/6400/006A, Nuclear Service Water System Valve Checklists, Rev. 72
OP/2/A/6400/006A, Nuclear Service Water System Valve Checklists, Rev. 58
OP/2/A/6350/002, Diesel Generator, Rev. 107

Complete System Walkdown

OP/2/A/6400/005, Component Cooling Water System, Rev. 75
OP/2/A/6400/005A, Component Cooling Water System Valve and Power Supply Checklists, Rev. 20
MCFD-2573-01.00, Flow Diagram of Component Cooling System, Rev. 5
MCFD-2573-01.01, Flow Diagram of Component Cooling System, Rev. 8
MCFD-2573-02.00, Flow Diagram of Component Cooling System, Rev. 2
MCFD-2573-02.01, Flow Diagram of Component Cooling System, Rev. 0
MCFD-2573-03.00, Flow Diagram of Component Cooling System, Rev. 8
MCFD-2573-03.01, Flow Diagram of Component Cooling System, Rev. 4
MCS-1573.KC-00-0001, Design Basis Specification for the KC System, Rev. 22
MCTC-1573-KC.0001-01, McGuire Unit 1 and 2 Test Acceptance Criteria, Rev. 1
System Health Reports (for KC system from January 2014 – March 2015)
Plant Health Committee Meeting Minutes (from January 2015 – May 2015)

Section 1R05: Fire Protection

MCS-1465.00-00-0008, Design Basis Specification for Fire Protection, Rev. 19
MCS-1465.00-00-0022, Appendix R Safe Shutdown Analysis, Rev. 14
MCC-1435.00-00-0059, NFPA 805 – Appendix R Safe Shutdown Deterministic Analysis, Rev. 2
AD-EG-ALL-1520, Transient Combustible Control, Rev. 3
NSD-104, Material Condition/Housekeeping, Foreign Material Exclusion and Seismic Concerns, Rev. 37
NSD-316, Fire Protection Impairment and Surveillance, Rev. 16
FS/0/B/9000/001, (Aux 695) Fire Strategy #1, Rev. 0
MFSD-001, Aux 695, Rev. 0
FS/0/B/9000/005, 1A D/G Fire Strategy #5, Rev. 0
FS/0/B/9000/005, 1A D/G Fire Strategy #6, Rev. 0
MFSD-005.006, Unit 1 D/G Rooms, Rev. 1
FS/0/B/9000/004, (Aux 716) Fire Strategy #4, Rev. 0
FS/0/B/9000/021, (Aux 750) Fire Strategy #21, Rev. 0
MFSD-021, Aux 750, Rev. 0

Section 1R06: Flood Protection Measures

MCS-1154.00-0004, Design Basis Specification for the Standby Shutdown Facility, Rev. 35
AP/0/A/5500/044, Plant Flooding, Rev.16

Section 1R07: Heat Sink Performance
MCC 1211.00-17.0025, YC Control Area Chiller Performance Analysis, Rev. 7
MCC 1223.24-00-0070, VC/YC Chiller Condenser Operability Evaluation, Rev. 7
PT/0/A/4457/004, VC/YC Condenser B Delta Performance Test, Rev. 30

Section 1R11: Licensed Operator Requalification Program and Licensed Operator Performance
Quarterly Resident Inspector LOR Activity Review
NSD-509, Site Standards in Support of Operational Focus, Rev. 6
SOMP 01-07, Control Room Oversight, Rev. 2
Active Simulator Examination Packages (for described scenarios)
AP/1/A/5500/01, Steam Leak, Rev. 18
AP/1/A/5500/03, Load Rejection, Rev. 30
AP/1/A/5500/11, Pressurizer Pressure Anomalies, Rev. 11
EP/1/A/5000/ECA-0.0, Loss of All AC Power, Rev. 35
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/ES-1.2, Post LOCA Cooldown and Depressurization, Rev. 17
EP/1/A/5000/F-0, Critical Safety Function Status Trees, Rev. 6

Quarterly Resident Inspector Licensed Operator Performance Review
AD-OP-ALL-1000, Conduct of Operations, Rev. 4
NSD-509, Site Standards in Support of Operational Focus, Rev. 6
OP/2/A/6200/001B, Chemical and Volume Control System Chargin, Rev. 69
PT/2/A/4350/002A, Diesel Generator Operability Test, Rev. 95

Section 1R12: Maintenance Effectiveness
AD-EG-ALL-1210, Maintenance Rule Program, Rev. 0
EDM-210, Engineering Responsibilities for the Maintenance Rule, Rev. 29
AD-EG-ALL-1204, Single Point Vulnerability Identification, Elimination and Mitigation, Rev. 1
AD-EG-ALL-1206, Equipment Reliability Classification, Rev. 2
AD-EG-ALL-1209, System, Component, and Program Health Reports and Notebooks, Rev. 3
AD-EG-ALL-1211, System Performance Monitoring and Trending, Rev. 3
SSC Function Scoping Database

Section1R13: Maintenance Risk Assessments and Emergent Work Control
AD-WC-ALL-0410, Work Activity Integrated Risk Management, Rev. 1
NSD-415, Operational Risk Management (Modes 1–3) per 10 CFR 50.65(a)(4), Rev. 8
SOMP 02-02, Operations Roles in the Risk Management Process, Rev. 17
OMP 13-7, Operational Control of Protected Equipment, Rev. 7
AD-OP-ALL-0201, Protected Equipment, Rev. 1
Complex Activity Plan (1B EDG Down Day)
Critical Activity Plan (Replace DCS Card for 2CF-20AB Alternate Positioner)

Section1R15: Operability Determinations and Functionality Assessments
NSD-203, Operability/Functionality, Rev. 26
AD-OP-ALL-0102, Operational Decision Making, Rev. 0

Section1R18: Plant Modifications
NSD-301, Engineering Change Program, Rev. 45
EDM-601, Engineering Change Manual, Rev. 27
OMP 10-2, Temporary Engineering Changes, Rev. 14
SOMP 02-04, Engineering Change Implementation Process, Rev. 0

Section 1R19: Post-Maintenance Testing
NSD-408, Testing, Rev. 18
AD-EG-ALL-1155, Post Modification Testing, Rev. 1
TT/0/A/9100/654, Modification Test Plan for EC-113050, Rev. 1
Work Order 02158404, A-train Post Modification Performance Test for EC-113050
PT/2/A/4350/056A, Diesel Generator 2A Starting Air Solenoid Test, Rev. 5
PT/0/A/4350/040E, 125 VDC I and C Battery Modified Performance Test Using BCT-2000, Rev. 15
Work Order 20000038, Replace Module 2EIA CA 9050
PT/1/A/4252/001A, 1A CA Pump Performance Test, Rev. 103
PT/1/A/4350/056A, Diesel Generator 1A Starting Air Solenoid Test, Rev. 4

Section 1EP6: Drill Evaluation
RP/0/A/5700/000, Classification of Emergency, Rev. 23
RP/0/A/5800/010, NRC Immediate Notification Requirements, Rev. 26
RP/0/B/5700/029, Notification to Offsite Agencies from the Control Room, Rev. 16

Section 2RS6: Radioactive Gases and Liquid Effluent Treatment
Procedures, Guidance Documents, and Manuals
AD-CP-ALL-0017, Radiological Groundwater Protection, Rev. 0
AD-PI-ALL-0100, Corrective Action Program, Rev. 2
AD-RP-ALL-2003, Investigation of Unusual Radiological Occurrences, Rev. 0
HP/0/B/1003/001, Unit Vent Calculations, Rev. 9
HP/0/B/1003/008, Determination of Radiation Monitor Setpoints (EMFs), Rev. 42
HP/0/B/1003/036, Unit Vent, Rev. 27
HP/0/B/1003/039Q, VQ Release Procedure, Rev. No. 23
HP/0/B/1003/041, Auxiliary Building Ventilation (EMF41), Rev. 6
HP/0/B/1003/042, Spent Fuel Building Ventilation (EMF42), Rev. 5
HP/0/B/1003/044, Containment Ventilation Unit Condensate Drain Tank (CVUCDT) Release to the RC System, Rev.15
HP/0/B/1003/049, WMT Release, Rev.14
HP/0/B/1003/050, Waste Gas Decay Tank Sampling and Release, Rev. 16
RPMP 9-1, McGuire Groundwater Protection Program Guidelines and Sampling Protocol, Rev. 1
SH/0/B/2007/003, Determination of Cumulative and Projected Offsite Dose from Effluents, Rev. 0

Records and Data Reviewed

10 CFR Part 61 DAW Waste Stream Analysis, 03/21/15
2013 Annual Radioactive Effluent Release Report, 04/29/14
2014 Annual Radioactive Effluent Release Report, 04/28/15
AD-RP-ALL-2003, Attachment 5, Record for Decommissioning Pursuant to 10CFR50.75(g), 03/08/15
Duke Power Company, Interlaboratory Cross Check Program, Sample Analysis Forms from July 2013 – March 2015
HP/0/B/1003/036, Unit 1 and Unit 2 Vent Weekly Samples, 06/20/15
HP/0/B/1003/039Q, VQ Release Procedure, 11/03/14
HP/0/B/1003/044, Containment Ventilation Unit Condensate Drain Tank (CVUCDT) Release to the RC System, 10/12/14
HP/0/B/1003/049, WMT Release, 11/01/14
HP/0/B/1003/050, Waste Gas Decay Tank Sampling and Release, 08/19/14
McGuire Ground Water Monitoring Results, 3rd Quarter 2013 – 2nd Quarter 2015
McGuire Nuclear Station, Units 1 and 2, Offsite Dose Calculation Manual (ODCM), Rev. 55, Dated 04/30/14, and Rev. 56, Dated 03/27/15
McGuire Site Five Year Hydrogeology Review, March 2015
PT/1/A/4450/001 A, OAPFT-1 HEPA and Carbon Adsorber Filters In-Place Leak Test (Control Room), 05/23/13 and 01/28/15
PT/1/A/4450/001 B, VA HEPA/Damper and Carbon Adsorber Filters In-Place Leak Test (Auxiliary Building), 10/01/13
PT/1/A/4450/001 D, VF HEPA/Damper and Carbon Adsorber Filters In-Place Leak Test (Fuel Handling), 12/12/13
PT/1/A/4450/012 B, Auxiliary Building Filter Train Air Flow Measurement, 09/13/13 and 12/02/14
PT/2/A/4450/001 A, OAPFT-2 HEPA and Carbon Adsorber Filters In-Place Leak Test (Control Room), 05/21/13 and 03/16/14
PT/2/A/4450/001 B, VA HEPA/Damper and Carbon Adsorber Filters In-Place Leak Test (Auxiliary Building), 06/10/14
PT/2/A/4450/001 D, VF HEPA/Damper and Carbon Adsorber Filters In-Place Leak Test (Fuel Handling), 05/27/14 and 07/18/14
PT/2/A/4450/012 B, Auxiliary Building Filter Train Air Flow Measurement, 05/28/14 and 06/10/14
SSC Risk Matrix, 06/25/15
System IQ, U1 and U2 EMF Walkdowns (Quarterly), 10/30/13 – 04/28/15

Corrective Action Program (CAP) Documents

Nuclear Oversight – Audit, McGuire Radiation Protection Audit, 2014-MNS-RP-01, 12/08/14
PIP S/N M-13-00314
PIP S/N M-13-01150
PIP S/N M-13-01568
PIP S/N M-13-05659
PIP S/N M-13-07959
PIP S/N M-13-09041
PIP S/N M-13-11319
PIP S/N M-14-05598
PIP S/N M-15-03009

Section 2RS7: Radiological Environmental Monitoring Program (REMP)

Procedures and Guidance Documents

AD-PI-ALL-0100, Corrective Action Program, Rev. 2
ENRAD-PROC-106, Calculation and Determination of Lower Limit of Detection for Radiological Laboratory Instrumentation, Rev. No 006
ENRAD-PROC-207, Configuration and Set Up of the ISCO 3710 Water Sampler, Rev. No. 004
ENRAD-PROC-325, Operation of the ISCO 3710 Sampler, Rev. No. 002
ENRAD-PROC-512, Documentation of Radiological Environmental Monitoring Program REMP Deviations, Rev. No. 001
ENRAD-PROC-717, Annual Land Use Census for McGuire Nuclear Station, Rev. No. 003
ENRAD-PROC-729, Milk Sampling at McGuire Nuclear Station, Rev. No. 002
ENRAD-PROC-730, Airborne Radioiodine and Airborne Particulate Sampling at McGuire Nuclear Station, Rev. No. 006
ENRAD-PROC-731, Water Sampling at McGuire Nuclear Station, Rev. No. 005
ENRAD-PROC-732, Broadleaf Vegetation Sampling at McGuire Nuclear Station, Rev. No. 005
ENRAD-PROC-733, Food Products Sampling at McGuire Nuclear Station, Rev. No. 002
ENRAD-PROC-734, Shoreline Sediment Sampling at McGuire Nuclear Station, Rev. No. 003
ENRAD-PROC-735, Fish Sampling at McGuire Nuclear Station, Rev. No. 1
ENRAD-PROC-736, Direct Radiation Measurement (TLDs) at McGuire Nuclear Station, Rev. No. 009
ENRAD-PROC-740, Preparation of McGuire Nuclear Station Environmental Sampling Supply Kits, Rev. No. 003
ENRAD-PROC-850, Calibration of REMP Air Sampling Equipment, Rev. No. 000
IP/0/B/3260/023, Meteorological Monitoring (EEB) System Weekly Channel Verification, Rev. No. 032
ENRAD-PROC-111, Routine QC Using the Countroom Analysis System (CAS), Rev. 4
ENRAD-PROC-112, Routine Quality Control on Tennelec Series 5 Low Background Counting Instruments Using Eclipse Software, Rev. 6
ENRAD-PROC-506, Calculation and Set-up of Control Charts Using the Countroom Analysis System, Rev. 2
ENRAD-PROC-508, Cross-Check Management in the Enrad Laboratory, Rev. 1
IP/0/B/3260/001, Met One Series 21 Wind Direction Module Channel Calibration, Rev. 20
IP/0/B/3260/003, Met One Series 21 Wind Speed Module Channel Calibration, Rev. 20
IP/0/B/3260/019, Met One Platinum RTD Model 21.32 Temperature and Delta Temperature Calibrations, Rev. 22

Records and Data Reviewed

Air Sample Collection Form for McGuire, ENRAD-PROC-740, Preparation of McGuire Nuclear Station Environmental Sampling Supply Kits, Rev. No. 003, 06/22/15
Annual Radiological Environmental Operating Report, Duke Energy Corporation, McGuire Nuclear Station, Units 1 and 2, 2013 and 2014
10CFR61 General Station Data Review Record, January to December 2014
Duke Energy, Interlaboratory Comparison Program, 2013 and 2014
EnRad Laboratories, Central Calibration Facility, Certificate of Calibration, ISCO Model 3710 Portable Sampler (EnRad ID and Dates): 00276 - 09/16/13, 08/19/14; 00281 – 01/06/14, 12/08/14; 01682 – 05/28/13, 05/27/14; 01708 – 03/03/14, 03/02/15; 01709 – 11/11/13, 10/13/14; 01710 – 04/28/14, 08/08/14; 01711 – 06/24/13, 06/23/14; 01712 – 03/31/14, 03/30/15; 02761 - 03/05/14, 03/02/15

EnRad Laboratories, Central Calibration Facility, Certificate of Calibration, REMP Air Sampler F and J Model LV-1D (EnRad ID and Dates): 09086 – 09/24/14; 09070 – 12/12/13, 04/17/15; 09071 – 09/24/14; 09076 – 07/23/14; 09084 – 08/28/14; 09087 – 09/24/14; 09092 – 12/26/13, 02/09/15; 09097 – 12/26/13, 04/07/15
IP/0/B/3260/023, Meteorological Monitoring (EEB) System Weekly Channel Verification, Rev. No. 032, Work Order/Task No. 20002112-01, 06/23/15
McGuire Nuclear Station, Units 1 and 2, Offsite Dose Calculation Manual (ODCM), Rev. 56
McGuire Nuclear Station Decommissioning File, NSD-0192.02, 06/23/15
McGuire Nuclear Station Meteorological Data Recovery Report, January 2014 to March 2015
McGuire Nuclear Station SSC Matrix, 05/08/15
McGuire Water Sampler Field Checklist, Enclosure 9.4, Page 1 of 1, ENRAD-PROC-731, Water Sampling at McGuire Nuclear Station, Rev. No. 005, 06/22/15
PT 1EEBLP9110, Replace/Calibrate Transmitter, Met One Series 21 Wind Speed Module Channel Calibration, Work Orders (WO) 02128454 01, 05/05/14; and 02153979 01, 12/08/14
PT 1EEBLP9110, Replace/Calibrate Transmitter, Met One Series 21 Wind Speed Module Channel Calibration, WOs 02128455 01, 05/05/14; and 02153989 01, 12/08/14
PT 1EEBLP9120, Replace/Calibrate Transmitter, Met One Series 21 Wind Direction Module Channel Calibration, WOs 02128456 01, 05/05/14; and 02153981 01, 12/08/14
PT 1EEBLP9130, Replace Transmitter, Met One Series 21 Wind Direction Module Channel Calibration, Lower Wind Direction Loop, WOs 02128457 01, 05/05/14; and 02153082 01, 12/08/14
PT 1EEBLP9140, Calibrate Loop (Air Temp), Met One Platinum RTD Model 21.32 Temperature and Delta Temperature Calibration, WOs 02128458 01, 05/06/14; and 02153983 01, 12/10/14
Quick Hitter Assessment Results: McGuire Site Five Year Hydrogeology Review, March 2015
Tower Inspection Report for Duke Energy at McGuire-Huntersville, NC, September 2014
Transmittal of Environmental Samples, McGuire Nuclear Station, ENRAD-PROC-740,
Preparation of McGuire Nuclear Station Environmental Sampling Supply Kits, Rev. 0 No. 003, 06/22/15

CAP Documents
PIP S/N G-13-00403
PIP S/N G-14-00107
PIP S/N G-14-02678
PIP S/N G-15-00648
Quick Hitter Self-Assessment Report, Radiological Environmental Monitoring Program (REMP) at McGuire Nuclear Station: Air Particulate and Air Radioiodine/Drinking Water/Surface Water, 12/03/14, AD-PI-ALL-0300, Self-Assessment and Benchmark Programs, Attachment 7, Rev. 0

Section 4OA1: Performance Indicator (PI) Verification
Procedures, Guidance Documents and Manuals
NSD-225, NRC Performance Indicators, Rev. 8
SRPMP 10-1, NRC Performance Indicator Data Collection, Validation, Review and Approval, Rev. 6

Records and Data Reviewed
Cumulative and Projected Offsite Doses from Effluents from October 2014 – March 2015
ED Alarm Logs, October 2014 – March 2015
NRC Performance Indicator Reviews from October 2014 – March 2015

Section 4OA2: Problem Identification and Resolution
AD-PI-ALL-0100, Corrective Action Program, Rev. 2 and Rev. 3
AD-PI-ALL-0101, Root Cause Evaluation, Rev. 1
AD-PI-ALL-0102, Apparent Cause Evaluation, Rev. 1
AD-PI-ALL-0103, Quick Cause Evaluation, Rev. 1
AD-PI-ALL-0104, Prompt Investigation Response Team, Rev. 1
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