



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
245 PEACHTREE CENTER AVENUE N.E., SUITE 1200
ATLANTA, GEORGIA 30303-1200

January 23, 2019

Mr. Thomas D. Ray
Site Vice President
Duke Energy Carolinas, LLC
McGuire Nuclear Station
MG01VP/12700 Hagers Ferry Road
Huntersville, NC 28078

SUBJECT: MCGUIRE NUCLEAR STATION – NUCLEAR REGULATORY COMMISSION
INTEGRATED INSPECTION REPORT 05000369/2018004 AND
05000370/2018004

Dear Mr. Ray:

On December 31, 2018, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your McGuire Nuclear Station Units 1 and 2. On January 15, 2019, the NRC inspectors discussed the results of this inspection with you and other members of your staff. The results of this inspection are documented in the enclosed report. The NRC inspectors did not identify any finding or violation of more than minor significance.

This letter, its enclosure, and your response (if any) will be made available for public inspection and copying at <http://www.nrc.gov/reading-rm/adams.html> and at the NRC Public Document Room in accordance with 10 CFR 2.390, "Public Inspections, Exemptions, Requests for Withholding."

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:
IR 05000369/2018004 and 05000370/2018004

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 INTEGRATED INSPECTION REPORT 05000369/2018004 AND
 05000370/2018004 January 23, 2019

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**U.S. NUCLEAR REGULATORY COMMISSION
Inspection Report**

Docket Numbers: 50-369, 50-370

License Numbers: NPF-9, NPF-17

Report Numbers: 05000369/2018004; and 05000370/2018004

Enterprise Identifier: I-2018-004-0042

Licensee: Duke Energy Carolinas, LLC

Facility: McGuire Nuclear Station, Units 1 and 2

Location: Huntersville, NC

Inspection Dates: October 1, 2018 to December 31, 2018

Inspectors: A. Hutto, Senior Resident Inspector
R. Cureton, Resident Inspector
R. Kellner, Senior Health Physicist
J. Rivera, Health Physicist
C. Dykes, Health Physicist
M. Meeks, Senior Operations Engineer

Approved By: F. Ehrhardt, Chief
Reactor Projects Branch 1
Division of Reactor Projects

Enclosure

SUMMARY

The U.S. Nuclear Regulatory Commission (NRC) continued monitoring licensee's performance by conducting a quarterly baseline inspection at McGuire Nuclear Station Units 1 and 2 in accordance with the Reactor Oversight Process. The Reactor Oversight Process is the NRC's program for overseeing the safe operation of commercial nuclear power reactors. Refer to <https://www.nrc.gov/reactors/operating/oversight.html> for more information. No findings were identified during this inspection period.

PLANT STATUS

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

Unit 2 began the inspection period shutdown for a scheduled refueling outage. The unit was placed on line October 13, 2018 and was returned to 100 percent RTP on October 15, 2018. The unit operated at or near 100 percent RTP for the remainder of the inspection period.

INSPECTION SCOPES

Inspections were conducted using the appropriate portions of the inspection procedures (IPs) in effect at the beginning of the inspection unless otherwise noted. Currently approved IPs with their attached revision histories are located on the public website at <http://www.nrc.gov/reading-rm/doc-collections/insp-manual/inspection-procedure/index.html>. Samples were declared complete when the IP requirements most appropriate to the inspection activity were met consistent with Inspection Manual Chapter (IMC) 2515, "Light-Water Reactor Inspection Program - Operations Phase." The inspectors performed plant status activities described in IMC 2515 Appendix D, "Plant Status" and conducted routine reviews using IP 71152, "Problem Identification and Resolution." The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel to assess licensee performance and compliance with Commission rules and regulations, license conditions, site procedures, and standards.

REACTOR SAFETY

71111.01 - Adverse Weather Protection

Seasonal Extreme Weather (1 Sample)

The inspectors evaluated readiness for seasonal extreme weather conditions prior to the onset of cold temperatures.

External Flooding (1 Sample)

The inspectors evaluated readiness to cope with external flooding on December 27, 2018.

71111.04 - Equipment Alignment

Partial Walkdown (4 Samples)

The inspectors evaluated system configurations during partial walkdowns of the following systems/trains:

- (1) 2B charging and volume control system while the 2A charging pump was out of service (OOS) for preventive maintenance (PM) on October 25, 2018
- (2) 1B containment spray (NS) train while the 1A NS pump was OOS for breaker PMs on November 20, 2018
- (3) A control room cooling (YC) chiller while the A YC chiller was OOS for PMs on December 12, 2018
- (4) 2B NS train while the 2A NS train was OOS for valve PMs on December 20, 2018

Complete Walkdown (1 Sample)

The inspectors evaluated system configurations during a complete walkdown of the B train of the Unit 1 safety injection (NI) system on December 21, 2018.

71111.05 - Fire Protection

Quarterly Inspection (4 Samples)

The inspectors evaluated fire protection program implementation in the following selected areas:

- (1) Auxiliary building 733' elevation (fire area 14) on December 18, 2018
- (2) Unit 2 716' elevation level mechanical penetration room (fire area 4) on December 18, 2018
- (3) Unit 1 733' elevation electrical penetration room and 1ETB room (fire area 11) on December 19, 2018
- (4) Unit 1 750' elevation electrical penetration room and 1ETA room (fire area 15) on December 19, 2018

71111.06 - Flood Protection Measures

Internal Flooding (1 Sample)

The inspectors evaluated internal flooding mitigation protections in the auxiliary building on December 13, 2018.

71111.11 - Licensed Operator Requalification Program and Licensed Operator Performance

Operator Requalification (1 Sample)

The inspectors observed and evaluated a dual unit training exercise on November 15, 2018. The exercise consisted of a Unit 1 power ascension from 15 percent power, syncing to the grid and continuing to raise power to 30 percent. Subsequently, Unit 2 failed to trip when required and Unit 1 incurred a 1ETA blackout, a turbine trip with a failed main steam power operated relief valve, and a steam break inside containment.

Operator Exams (1 Sample)

The inspectors reviewed and evaluated requalification examination results during the week of December 17, 2018.

Operator Performance (1 Sample)

The inspectors observed and evaluated operator approach to criticality and heat up following Unit 2 refueling outage (M2R25) on October 11, 2018.

71111.12 - Maintenance Effectiveness

Routine Maintenance Effectiveness (3 Samples)

The inspectors evaluated the effectiveness of routine maintenance activities associated with the following equipment and/or safety significant functions:

- (1) 2D reactor coolant loop narrow range T-hot instrument failed high, (Nuclear Condition Report (NCR) 2237311)
- (2) Unit 2 pressurizer heater group B loss of one heater bank, (NCR 2237676)
- (3) 1CFSV0260 (solenoid valve for 1D steam generator containment isolation valve 1CF-26AB) leaking air from C port, (NCR 2239268)

71111.13 - Maintenance Risk Assessments and Emergent Work Control (5 Samples)

The inspectors evaluated the risk assessments for the following planned and emergent work activities:

- (1) Unit 2 equipment protection plan for 2A train spent fuel cooling during high decay heat, on November 13, 2018
- (2) Unit 1 equipment protection plan for 1A diesel generator (DG) during planned maintenance, on November 27, 2018
- (3) Unit 1 and 2 equipment protection plan for standby shutdown facility (SSF) diesel during planned maintenance, on November 28, 2018
- (4) Unit 1 and Unit 2 equipment protection plan for B control area chilled water chiller during PM, on December 12, 2018
- (5) Unit 2 equipment protection plan for the turbine driven auxiliary feedwater pump for PM, on December 19, 2018

71111.15 - Operability Determinations and Functionality Assessments (5 Samples)

The inspectors evaluated the following operability determinations and functionality assessments:

- (1) Indications observed on nuclear service water welds during engineering requested exams (NCR 2226544), on October 3, 2018
- (2) Unit 2 turbine driven auxiliary feedwater gearbox oil level at bottom of bullseye in the sight glass (NCR 02240375), on November 1, 2018
- (3) Observed electrolyte seepage from Unit 2 DG battery cell 59 & 60 from a pin hole on the casing (NCR 02242591), on November 12, 2018
- (4) Water intrusion into 1SMCASMTC1-2 (NCR 2245909), on November 28, 2018
- (5) 1A seal injection filter differential pressure gauge has leak of 24 drops per minute (NCR 2248979), on December 17, 2018

71111.18 - Plant Modifications (1 Sample)

The inspectors evaluated the following temporary or permanent modifications:

- (1) Engineering Change (EC) 412897, "McGuire Unit 2 reactor vessel closure head thermal sleeve replacement," on November 19, 2018

71111.19 - Post Maintenance Testing (5 Samples)

The inspectors evaluated the following post maintenance tests:

- (1) PT/2/A/4350/002 A, "Diesel Generator 2A Operability Test," following outage maintenance activities, on October 4, 2018
- (2) PT/2/A/4600/105, "RCCA Drop Timing Using DRPI System," following replacement of control rod drive mechanism H-8 thermal sleeve, on October 11, 2018
- (3) PT/0/A/4150/028, "Initial Criticality and Zero Power Physics Testing," on October 11, 2018
- (4) Work Order (WO) 20241950, 2A NV oil pump and gearbox PM, on November 12, 2018
- (5) PT/2/A/4200/020 A, "Airlock Operability Test," following upper airlock PMs, on November 15, 2018

71111.20 - Refueling and Other Outage Activities (1 Sample)

The inspectors evaluated refueling outage activities from October 1, 2018 to October 15, 2018.

71111.22 - Surveillance Testing

The inspectors evaluated the following surveillance tests:

Routine (3 Samples)

- (1) PT/0/A/4200/032, "Periodic Inspection of Ice Condenser Lower Inlet Doors," on October 11, 2018
- (2) PT/2/A/4350/036 A, "2A Diesel Generator 24 hour Run," on October 24, 2018
- (3) PT/1/A/4350/002 B, "Diesel Generator 1B Operability Test," on December 11, 2018

Containment Isolation Valve (1 Sample)

- (1) PT/2/A/4200/001 C, "Isolation Valve Leak Rate Test," Enclosure 13.41, "Test Sheet for Penetration M-375 (WL)," on October 3, 2018

In-service (1 Sample)

- (1) PT/1/A/4252/00, "Unit 1 Turbine Driven Auxiliary Feedwater Pump Test," on November 2, 2018

71114.06 - Drill Evaluation

Drill/Training Evolution (1 Sample)

The inspectors evaluated an emergency planning drill on October 31, 2018. The drill consisted of a 1D steam generator tube rupture followed by a stuck open safety valve on the 1D steam generator. The drill also consisted of failed fuel on the affected unit.

RADIATION SAFETY

71124.01 - Radiological Hazard Assessment and Exposure Controls

Radiological Hazard Assessment (1 Sample)

The inspectors evaluated radiological hazards assessments and controls.

Instructions to Workers (1 Sample)

The inspectors evaluated worker instructions.

Contamination and Radioactive Material Control (1 Sample)

The inspectors evaluated contamination and radioactive material controls.

Radiological Hazards Control and Work Coverage (1 Sample)

The inspectors evaluated radiological hazards control and work coverage.

High Radiation Area and Very High Radiation Area Controls (1 Sample)

The inspectors evaluated risk-significant high radiation area and very high radiation area controls.

Radiation Worker Performance and Radiation Protection Technician Proficiency (1 Sample)

The inspectors evaluated radiation worker performance and radiation protection technician proficiency.

71124.02 - Occupational As Low As Reasonably Achievable (ALARA) Planning and Controls

Radiological Work Planning (1 Sample)

The inspectors evaluated the licensee's radiological work planning by reviewing the following activities:

- (1) ALARA Plan #: M2R25-18-03, RWP No. 2170, Rev. 1, Job Title: EC112317: Replace RVCH insulation (including bare metal inspection)
- (2) ALARA Plan #: M2R25-18-12, RWP No. 2060, Rev. 4, Job Title: M2R25 AHA UT's, metrology, & H-8 repair
- (3) ALARA Plan #: M2R25-18-07, RWP No. 2375, Rev. 1, Job Title: EC113987 Replace DRPI detectors & cabling
- (4) ALARA Plan # M2R25-18-09, RWP No. 2110, Rev. 4, Job Title. M2R25 FWST coatings, NDE, and RTD repair

Verification of Dose Estimates and Exposure Tracking Systems (1 Sample)

The inspectors evaluated dose estimates and exposure tracking.

Implementation of ALARA and Radiological Work Controls (1 Sample)

The inspectors reviewed ALARA practices and radiological work controls by reviewing the following activities:

- (1) Replacement of Thermal Sleeve H-8, RWP No. 2060, Rev. 4, U-2 Outage: Auxiliary Head Adapter Inspection & Repair, Hotel 8 nozzle repair
- (2) Replace Rx Head Mirror Insulation, RWP No. 2170, Rev. 1, U2 RX BLDG: EC112317 - Replace RVCH insulation (including bare metal inspection & shroud 'half-moon' repairs by RHT)
- (3) CRDM DRPI detector & cabling replacement, RWP No. 2375, Rev. 1, Unit-2 Rx Outage: CRDM Connector / Cable Replacement

Radiation Worker Performance (1 Sample)

The inspectors evaluated radiation worker and radiation protection technician performance.

71124.03 - In-Plant Airborne Radioactivity Control and Mitigation

Engineering Controls (1 Sample)

The inspectors evaluated airborne controls and monitoring.

Use of Respiratory Protection Devices (1 Sample)

The inspectors evaluated respiratory protection.

Self-Contained Breathing Apparatus for Emergency Use (1 Sample)

The inspectors evaluated the licensee's self-contained breathing apparatus program.

71124.04 - Occupational Dose Assessment

Source Term Characterization (1 Sample)

The inspectors evaluated the licensee's source term characterization.

External Dosimetry (1 Sample)

The inspectors evaluated the licensee's external dosimetry program.

Internal Dosimetry (1 Sample)

The inspectors evaluated the licensee's internal dosimetry program.

Special Dosimetric Situations (1 Sample)

The inspectors evaluated the licensee's performance for special dosimetric situations.

71124.05 - Radiation Monitoring Instrumentation

Walk Downs and Observations (1 Sample)

The inspectors evaluated radiation monitoring instrumentation during plant walkdowns.

Calibration and Testing Program (1 Sample)

The inspectors evaluated the licensee's calibration and testing program.

OTHER ACTIVITIES – BASELINE

71151 - Performance Indicator Verification

The inspectors verified licensee performance indicators submittals listed below for the period from May 1, 2017 through August 31, 2018. (2 Samples)

- (1) occupational exposure control effectiveness
- (2) radiological effluent technical specifications/offsite dose calculation manual radiological effluent occurrences (RETS/ODCM) radiological effluent occurrences

The inspectors verified licensee performance indicators submittals listed below for the period from October 1, 2017 through September 30, 2018. (4 Samples)

- (1) Unit 1 and 2 reactor coolant system activity
- (2) Unit 1 and 2 reactor coolant system leakage

71152 - Problem Identification and Resolution

Semiannual Trend Review (1 Sample)

The inspectors reviewed the licensee's corrective action program for trends that might be indicative of a more significant safety issue.

Annual Follow-up of Selected Issues (2 Samples)

The inspectors reviewed the licensee's implementation of its corrective action program related to the following issues:

- (1) NCR 2249474, Inadequately erected scaffold
- (2) NCR 2236247, Containment air release flow path restriction

OTHER ACTIVITIES – TEMPORARY INSTRUCTIONS, INFREQUENT AND ABNORMAL

60855.1 - Operation of an Independent Spent Fuel Storage Installation (ISFSI)

The inspectors walked down the licensee's ISFSI area and reviewed the annual ISFSI inventory completion on December 26, 2018.

EXIT MEETINGS AND DEBRIEFS

The inspectors verified no proprietary information was retained or documented in this report.

The inspectors confirmed that proprietary information was controlled to protect from public disclosure.

- On January 15, 2019, the inspector presented the inspection results to Mr. Thomas Ray, and other members of the licensee staff.

DOCUMENTS REVIEWED

71111.01: Adverse Weather Protection

AD-WC-ALL-0230, "Seasonal Readiness"
NSD 317, "Freeze Protection Program"
PT/0/B/4700/038, "Cold Weather Protection"
PT/0/B/4700/070, "On Demand Freeze Protection Verification Checklist"
UFSAR Section 2.4, Hydrology
MCS-1465.00-00-0012, Design Basis Specification for Flooding from External Sources
MCC-1100.00-00-0002, McGuire Probable Maximum Precipitation Flood Analysis
Drawing No. MC-1022-01.00, Grading Plan, Plant Area
AP/0/A/5500/044, Plant Flooding

71111.04: Equipment Alignment

OP/1/A6200/006, "Safety Injection System"
MCFD-15620-03, "Safety Injection System Flow Diagram"
MCFD-1563-01.00, "Flow Diagram of Containment Spray System (Unit 1)"
MCFD-2563-01.00, "Flow Diagram of Containment Spray System (Unit 2)"
MCFD- 1618-01.00, "Flow Diagram of Control Room Chilled Water System"

71111.05: Fire Protection

MCS-1465.00-00-0008, "Design Basis Specification for Fire Protection"
MCS-1465.00-00-0022, "Appendix R Safe Shutdown Analysis"
MCC-1435.00-00-0059, "NFPA 805 – Appendix R Safe Shutdown Deterministic Analysis"
AD-EG-ALL-1520, "Transient Combustible Control"
CSD-MNS-PFP-AB-733-001
CSD-MNS-PFP-AB-750-001
MFSD-004, "Aux 716"
MFSD-0014, "Aux 733"

71111.06: Internal Flood Protection

AP/0/A/5500/044, Plant Flooding
MCC-1206.47-69-100, Auxiliary Building Flooding Analysis
MCS-1154.00-0004, Design Basis Specification for Auxiliary Building Structures

71111.11: Licensed Operator Requalification Program and Licensed Operator Performance

AD-OP-ALL-1000, "Conduct of Operations"
OMP 4.3, "Use of Emergency and Abnormal Procedures and FLEX Support Guidelines"
SOMP 01-07, "Control Room Oversight"
OP/A/2/6100/SD-20, "Draining the NC System"
OP/A/2/6100/SO-1, "Maintaining NC System Level"
OP/A/2/6100/SD-16, "Preparing for NC System Drain"

71111.12: Maintenance Effectiveness

AD-EG-ALL-1204, "Single Point Vulnerability Identification, Elimination and Mitigation"
AD-EG-ALL-1206, "Equipment Reliability Classification"
AD-EG-ALL-1209, "System, Component, and Program Health Reports and Notebooks"
AD-EG-ALL-1210, "Maintenance Rule Program"
AD-EG-ALL-1211, "System Performance Monitoring and Trending"

Duke Equipment Reliability Maintenance Rule Database

71111.13: Maintenance Risk Assessments and Emergent Work Control

NSD-213, "Risk Management Process"

NSD-415, "Operational Risk Management (Modes 1–3) per 10 CFR 50.65(a)(4)"

SOMP 02-02, "Operations Roles in the Risk Management Process"

OMP 13-7, "Operational Control of Protected Equipment"

AD-OP-ALL-0201, "Protected Equipment"

71111.15: Operability Determinations and Functionality Assessments

AD-OP-ALL-0102, "Operability Decision Making"

AD-OP-ALL-0105, "Operability Determinations and Functionality Assessment"

71111.18: Plant Modifications

EC 412897, "McGuire Unit 2 reactor vessel closure head thermal sleeve replacement"

PWROG-16003-P, "Evaluation of Thermal Sleeve Flange Wear"

Framatome Metrology Services Information Record 142-9289931-00, "McGuire Unit 2 CRDM Thermal Sleeve As-Found Dimensional Report"

71111.19: Post-Maintenance Testing

NSD-408, "Testing"

AD-EG-ALL-1155, "Post Modification Testing"

71111.22: Surveillance Testing

AD-EG-ALL-1202, "Preventive Maintenance and Surveillance Testing Administration"

AD-WC-ALL-0250, "Work Implementation and Completion"

AD-EG-ALL-1720, "In-service Testing (IST) Program Implementation"

71124.01: Radiological Hazard Assessment and Exposure Controls

Procedures, Guidance Documents, and Manuals

AD-PI-ALL-0100, Corrective Action Program, Rev. 18

AD-RP-ALL-0002, Radiation and Contamination Surveys, Rev. 1

AD-RP-ALL-0004, Radiological Posting and Labeling, Rev. 3

AD-RP-ALL-0005, Access Controls for High and Locked High Radiation Areas, Rev. 0

AD-RP-ALL-0006, Personnel Contamination Monitoring, Rev. 0

AD-RP-ALL-0007, Control of Radioactive Material Rev. 0

AD-RP-ALL-2000, Preparation and Management of Radiation Work Permits (RWP), Rev. 3

AD-RP-ALL-2001, Radiation Protection Briefings, Rev. 4

AD-RP-ALL-2002, SRD Alarms, Rev. 3

AD-RP-ALL-2014, Work in Alpha Environments, Rev. 7

AD-RP-ALL-2017, Access Controls for High, Locked High, and Very High Radiation Areas, Rev. 5

AD-RP-ALL-3002, Unconditional Release of Material, Rev. 1

HP/0/B/1003/063, Routine Surveillance, Rev. 043

Records and Data

NSTS 2018 Annual Inventory Reconciliation, 1/15/18

Gamma Spectrum Analysis, Sample ID MN17082000001, Tc-99 #357, 8/20/17

Gamma Spectrum Analysis, Sample ID MN18092500017, U2 RX U/C O/S RX Head, 9/25/18

Gamma Spectrum Analysis, Sample ID MN18092500038, U2 U/C Rx Head Stand I/S, 9/25/18

Gamma Spectrum Analysis, Sample ID MN18100300028, Shallow End Initial Survey Post Drain Down Work Zone, 10/3/18
HP/0/B/1003/063, Routine Surveillance, ISFSI Quarterly, 6/28/18 and 7/16/18
HP/0/B/1004/034, Radioactive Sources, Source Inventory, 12/20/17 and 6/25/18
RWP 2060, U-2 Outage; Auxiliary Head Adaptor Inspection & Repair, Hotel 8 Nozzle Repair, Rev. 04
RWP 2110, U2 FWST Inside Coating Inspection & Repairs & NDE, Rev. 06
RWP 2876, U-2 Outage; I&E Team; I&E Work on the Reactor Head in Support of Rx Head R&R (Cables, Thermocouples, RVLIS etc.), Rev. 13
Survey MNS-M-20170829-4, Room 954 Radiation Protection Shift Lab, 8/20/17
Survey MNS-M-20180517-1, Room 642 WEFT/WDT Hallway Quarterly Routine, 5/17/18
Survey MNS-M-20180703-36, Room 786 ND/NS Hx Room B, 7/3/18
Survey MNS-M-20180714-7, Room 642 WEFT/WDT Hallway Quarterly Routine, 7/14/18
Survey MNS-M-20180715-19, Room 506 ND Pump 2A, 7/5/18
Survey MNS-M-20180727-1, 733 Elevation Hallways, 7/27/18
Survey MNS-M-20180902-3, 733 Elevation Hallways, 9/2/18
Survey MNS-M-20180918-8, Room 506 ND Pump 2A, 9/18/18
Survey MNS-M-20180918-11, Room 786 ND/NS Hx Room B, 9/18/18
Survey MNS-M-20180922-22, Under Head Survey, 9/22/18
Survey MNS-M-20180922-23, U-2 Rx Head Inspection Staging Area, 9/22/18
Survey MNS-M-20180925-22, U-2 Rx Head Inspection Staging Area, 9/25/18
Survey MNS-M-20180925-28, U-2 Lower Containment Floor, 9/25/18
Survey MNS-M-20180926-7, U-2 Rx Head Inspection Staging Area, 9/26/18

CAP Documents

NCR 02121445
NCR 02142533
NCR 02144326
NCR 02146600
NCR 02148797
NCR 02153681
NCR 02154358
NCR 02154413
NCR 02155066
NCR 02157005

71124.02: Occupational As Low As Reasonably Achievable (ALARA) Planning and Control Procedures, Guidance Documents, and Manuals

AD-CP-ALL-0012, Radiation Source Term, Revision 1
AD-EG-MNS-1660, McGuire Cobalt Reduction Program, Revision 0
AD-RP-ALL-2000, Preparation and Management of Radiation Work Permits (RWP), Revision 3
AD-RP-ALL-2006, Radiation Protection Risk Management Process, Revision 4
AD-RP-ALL-9000, ALARA Program, Revision 8
AD-RP-ALL-9000, ALARA Planning, Revision 4
AD-RP-ALL-9004, Standard Radiation Field Monitoring and Characterization Program, Revision 0
AD-WC-ALL-0410, Work Activity Integrated Risk Management, Revision 7

Records and Data

ALARA Plan # M1R25-17-02, Remove & replace Rx Head & Upper Internals, Rev. 0

ALARA Plan #: M2R25-18-03, EC112317: Replace RVCH insulation (including bare metal inspection), Rev. 0
ALARA Plan # M2R25-18-12, M2R25 AHA UT's, metrology, & H-8 repair, Rev. 0
ALARA Plan # M2R25-18-07, EC113987 Replace DRPI detectors & cabling, Rev. 0
ALARA Plan # M2R25-18-09, M2R25 FWST coatings, NDE, and RTD repair, Rev. 0
ALARA Plan # M-U1-0L-18-01, OFCTKN037 Magnastor cask load, Rev. 0
ALARA Critique, ALARA Plan # M1R25-17-02, Remove & replace Rx Head & Upper Internals Rev 1, 10/24/17
ALARA Critique, ALARA Plan # M-U1-0L-18-01, OFCTKN037 Magnastor cask load, 7/5/2018
In-Progress Review (50% complete), ALARA Plan # M1R25-17-02, Remove & replace Rx Head & Upper Internals, 10/7/2017
In-Progress Review (75% complete), ALARA Plan # M1R25-17-02, Remove & replace Rx Head & Upper Internals, 10/9/2017
M2R25 Daily Dose Update, 9/26/2018, 9/27/2018, an 10/13/2018
M2R25 Source Term Reduction Script, 8/20/2018
M2R25 Top Dose Job List, 8/22/2018
McGuire Nuclear Station ALARA Committee Meeting Package and Minutes for the April, May, June, and July 2018 Meetings, 4/23/2018, 5/24/2018, 6/24/2018, and 7/23/2018
Radiation Survey (RS) # MNS-M-20180922-22, Under Head Survey, 9/22/2018
RS # MNS-M-20180922-23, Pre-Job Under Head Survey, 9/22/2018
RS # MNS-M-20180925-22, Under Head Survey [after H-8 boroscope], 9/25/2018
RS # MNS-M-20180926-7, Head Stand Bullpen, 9/26/2018
Radiation Work Permit (RWP) # 1227, U-1 Auxiliary and Yard: Dry Cask Loading and ISFSI Work, Rev. 12
RWP # 2060, U-2 Outage: Auxiliary Head Adapter Inspection & Repair, Hotel 8 nozzle repair, Rev. 4
RWP # 2170, U2 RX BLDG: EC112317 - Replace RVCH insulation (including bare metal inspection & shroud 'half-moon' repairs by RHT), Rev. 1
RWP # 2375, Unit-2 Rx Outage: CROM Connector/ Cable Replacement, Rev. 2
Temporary Shielding Request (TSR), TSR-17-001, Pb installation for personal dose at COW building from ISFSI pad, 2/16/2017
TSR-18-201 Rev-1, Unit 2 Rx Bldg Lower Containment above PRT, 3/20/2018
TSR-18-231, Unit 2 Lower Containment, Letdown piping above seal table, 2/18/2018

Corrective Action Program (CAP) Documents

AD-PI-ALL-0100, Corrective Action Program, Revision 18
NCR Numbers: 02028142, 02060268, 02093304, 02105342, 02119123, 02185388, and 02199465
Quick-Hitter Self-Assessment 02001556-05, Perform Annual Radiation Protection Program review (ALARA program portion), 9/03/2018

71124.03: In-Plant Airborne Radioactivity Control and Mitigation

Procedures, Guidance Documents, and Manuals

AD-TQ-ALL-0083, Self-Contained Breathing Apparatus (SCBA) Training, Rev 3
HS0113-N, Advanced Basic Respiratory Initial Training: Advanced Basic Respiratory Initial Training Initial Training (SCBA) and Requalification for MSA, M-7 Firehawk. Rev 01
PT/0/A/4450/007, Control Room Habitability Program, Rev 0
Dose Calculations MCC-1227.00-00-0094, Radiological Consequences of a Design Basis LOCA at McGuire Nuclear Station (MNS UFSAR 15.6.5.3)

Records and Data

Central Calibration Facility Certifications EnRad ID: #04127, 02/19/2018, 11/10/2016; #04129, 01/17/2018, 01/02/2017; #04135, 06/12/2018, 07/25/2018; #04109, 06/29/2017, 07/23/2018

Corrective Action Program (CAP) Documents

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AR Numbers: 02133081, 02156737, and 02157073

71124.04: Occupational Dose Assessment

Procedures, Guidance Documents, and Manuals

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AD-RP-ALL-4005, Dose Management, Revision 2
AD-RP-ALL-4010, Internal Dose Assessment, Revision 2
AD-RP-ALL-4011, In Vitro Bioassay, Revision 2
AD-RP-ALL-4015, Dosimetry in Gradient Radiation Fields, Revision 0
HP/0/B/1003/063, Routine Surveillance, Revision 43
TE-RP-ALL-4001, Declared Pregnant Worker, Revision 3
TE-RP-ALL-4005, Investigation of Unusual Dosimetry Occurrence or Possible Overexposure, Revision 0

Records and Data

CSD-RP-ALL-4004 McGuire Passive Whole Body Sensitivity Study Revision 1, 5/31/2018
HP/0/B/1003/063, Enclosure 5.32, Quarterly Trending of ISFSI Survey Data: 3rd Quarter 2016, 9/29/2016; 1st Quarter 2018, 3/29/2018; 2nd Quarter 2018, 7/3/2018
Letter to File # GS-754.10, McGuire GEM-5 Passive Whole Body Sensitivity, 1/27/2014
NVLAP Certificate and Scope of Accreditation, Duke Energy Dosimetry Laboratory, 4/01/2016 through 3/31/2019
Personnel Contamination Event Trending Log, March 2016 through August 2018
Unusual Dosimetry Occurrence (UDO) Investigation Forms; UDO 16-08, 4/2/2016; UDO 16-18, 9/27/2016; UDO 16-25, 9/27/2016;
Declared Pregnant Worker Dose Records for Six individual Monitored at McGuire form 2016 through October 2018 [TE-RP-ALL-4001, Attachment 1, Pregnancy Exposure Agreement, Whole Body Count Results, and NRC Fetal Form-5], Various Dates

Corrective Action Program (CAP) Documents

AD-PI-ALL-0100, Corrective Action Program, Revision 18
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71124.05: Radiation Monitoring Instrumentation

Procedures, Guidance Documents, and Manuals

AD-RP-ALL-7007, APEX INVIVO Whole Body Counter Calibration, Revision 1
AD-RP-ALL-7005, Radiation Protection Portable Instrument Source Response Check, Revision 2
CSD-RP-ALL-4004, McGuire Passive Whole Body Sensitivity Study, Revision 1

Records and Data

Work Order Package 20128618 01: PT 1EMF-51A Source Check Containment Rad Monitor, 10/03-08/2018

Work Order Package 20184992 01: PT 2 EMF-51A Source Check Containment Rad Monitor, 09/30/2018
Work Order Package 20184992PT 2EMF51-A Source Check Containment Radiation Monitor
Work Order Package 20184991 01, Pt 2EMF-51B Source Check Containment Radiation Monitor, 09/2018
Calibration Records EnRad#s: Lud 9-3, #12083, 1/03/17, 3/6/18; GEM-5, #12348, 1/3/18, 06/27/18, 09/05/18 ; Telepole, #02268, 08/24/17, 08/24/18; Ludlum 3030P Smear Counter, #03525, 09/26/16, 06/20/18; ARGOS-5AB, #12946, 1/17/17, 01/03/18; Lud 12-4, #03139, 04/11/18; CRONOS-4, #12747, 06/21/17, 06/19/18; REM-14 #01010, 04/10/18;
AD-CP-ALL-0016, Count Room Cross Check, 3rd Quarter 2017, 04/23/18
HP/O/B/1001/041, Calibration and Quality Assurance of Whole Body Counter, 08/24-29/2016, 08/14/17,
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Corrective Action Program (CAP) Documents

AD-PI-ALL-0100, Corrective Action Program, Revision 18
AR Numbers: 02117047, 02156737, 02157073, and 02176651

71151: Performance Indicator (PI) Verification

Procedures

AD-LS-ALL-0004, NRC Performance Indicators and Monthly Operating Report, Revision 2
AD-PI-ALL-0100, Corrective Action Program, Revision 18

Data

AD-CP-DEC-0021, Attachment 1, McGuire Nuclear Station Dose Commitment Data Sheet Dose Estimate for June 2018, 7/17/2018
AD-RP-ALL-1101 Performance Indicators (PI) For the Occupational and Public Radiation Safety Cornerstones [NRC Performance Indicator Review] for May 2017 thru August 2018
ED alarm logs, May 2017 – August 2018
McGuire Nuclear Station Units 1 and 2 Annual Radioactive Effluent Release Report January 1, 2016 through December 31, 2016
McGuire Nuclear Station Units 1 and 2 Annual Radioactive Effluent Release Report January 1, 2017 through December 31, 2017

CAP Documents

AD-PI-ALL-0100, Corrective Action Program, Revision 18
AR Numbers: 02124471
Self-Assessment Number: AR 02130672, NRC Readiness Review for Public Radiation Safety Baseline Inspection, 6/1/2017

71152: Problem Identification and Resolution

AD-PI-ALL-0100, "Corrective Action Program"
AD-PI-ALL-0105, "Effectiveness Reviews"

AD-LS-ALL-0006, "Notification/Reportability Evaluation"

60855.1: Operation of an Independent Spent Fuel Storage Installation

PT/1/A/4600/003B, "Daily Surveillance Items"

PT/0/A/4550/003, Enclosure 13.6, "Dry Storage cask Inspections"