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

November 1, 2017

Mr. Tom Simril
Vice President
Duke Energy Corporation
Catawba Nuclear Station
4800 Concord Road
York, SC 29745-9635

SUBJECT: CATAWBA NUCLEAR STATION – NUCLEAR REGULATORY COMMISSION INTEGRATED INSPECTION REPORT 05000413/2017003 AND 05000414/2017003

Dear Mr. Simril:

On September 30, 2017, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Catawba Nuclear Station Units 1 and 2. On October 25, 2017, 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.: 50-413, 50-414
License Nos.: NPF-35, NPF-52

Enclosure:
IR 05000413/2017003 and 05000414/2017003
w/Attachment: Supplemental Information

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SUBJECT: CATAWBA NUCLEAR STATION - NUCLEAR REGULATORY COMMISSION INTEGRATED INSPECTION REPORT 05000413/2017003 AND 05000414/2017003 November 1, 2017

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U.S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos.:	50-413, 50-414
License Nos.:	NPF-35, NPF-52
Report No.:	05000413/2017003 and 05000414/2017003
Licensee:	Duke Energy Carolinas, LLC
Facility:	Catawba Nuclear Station, Units 1 and 2
Location:	York, SC 29745
Dates:	July 1, 2017 through September 30, 2017
Inspectors:	J. Austin, Senior Resident Inspector C. Scott, Resident Inspector R. Cureton, Resident Inspector (McGuire) A. Nielsen, Senior Health Physicist (Sections 2RS7, 4OA1) J. Panfel, Health Physicist (Sections 2RS6, 4OA1)
Approved by:	Frank Ehrhardt, Chief Reactor Projects Branch 1 Division of Reactor Projects

Enclosure

SUMMARY

IR 05000413/2017003 and 05000414/2017003, July 1, 2017 through September 30, 2017; Catawba Nuclear Station, Units 1 and 2; Integrated Inspection Report

The report covered a three-month period of inspection by the resident inspectors and regional inspectors. No findings were identified during this inspection period. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 6.

REPORT DETAILS

Summary of Plant Status

Unit 1: Operated at or near 100 percent rated thermal power for the entire inspection period.

Unit 2: Operated at or near 100 percent rated thermal power for the entire inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection (71111.01)

a. Inspection Scope

.1 Readiness to Cope with External Flooding

The inspectors evaluated the licensee's implementation of flood protection procedures and compensatory measures during impending conditions of flooding or heavy rains. The inspectors reviewed the updated final safety analysis report and related flood analysis documents to identify those areas containing safety-related equipment that could be affected by external flooding and their design flood levels. The inspectors walked down flood protection barriers, reviewed procedures for coping with external flooding, and reviewed corrective actions for past flooding events. The inspectors verified that the procedures for coping with flooding could reasonably be used to achieve the desired results. For those areas where operator actions are credited, the inspectors assessed whether the flooding event could limit or prevent the required actions. Documents reviewed are listed in the attachment.

The inspectors conducted walkdowns of the following plant area containing risk-significant structures, systems, and components that are below flood levels or otherwise susceptible to flooding:

- Emergency Diesel Building

.2 Impending Adverse Weather Conditions

The inspectors reviewed the licensee's preparations to protect risk-significant systems from winds associated with hurricane Irma expected during September 7-8, 2017. The inspectors evaluated the licensee's implementation of adverse weather preparation procedures and compensatory measures, including operator staffing, before the onset of adverse weather conditions. The inspectors reviewed the licensee's plans to address the consequences that may result from high winds and rain. The inspectors verified that operator actions specified in the licensee's adverse weather procedure maintain readiness of essential systems. The inspectors verified that required surveillances were current, or were scheduled and completed, if practical, before the onset of anticipated adverse weather conditions. The inspectors also verified that the licensee implemented periodic equipment walkdowns or other measures to ensure that the condition of plant equipment met operability requirements. Documents reviewed are listed in the attachment.

b. Findings

No findings were identified.

1R04 Equipment Alignment (71111.04)

a. Inspection Scope

Partial Walkdown

The inspectors verified that critical portions of the selected systems were correctly aligned by performing partial walkdowns. The inspectors selected systems for assessment because they were a redundant or backup system or train, were important for mitigating risk for the current plant conditions, had been recently realigned, or were a single-train system. The inspectors determined the correct system lineup by reviewing plant procedures and drawings. Documents reviewed are listed in the attachment.

The inspectors selected the following three systems or trains to inspect:

- Unit 1, B emergency diesel generator (EDG)
- Unit 1, B spent fuel ventilation
- Unit 2, A safety injection pump

b. Findings

No findings were identified.

1R05 Fire Protection (71111.05AQ)

a. Inspection Scope

.1 Quarterly Inspection

The inspectors evaluated the adequacy of selected fire plans by comparing the fire plans to the defined hazards and defense-in-depth features specified in the fire protection program. In evaluating the fire plans the inspectors assessed the following items:

- control of transient combustibles and ignition sources
- fire detection systems
- fire suppression systems
- manual firefighting equipment and capability
- passive fire protection features
- compensatory measures and fire watches
- issues related to fire protection contained in the licensee's corrective action program (CAP)

The inspectors toured the following five fire areas to assess material condition and operational status of fire protection equipment. Documents reviewed are listed in the attachment.

- Unit 2, battery room, fire areas 9,10
- Unit 1, spent fuel pool purge unit, fire area 47
- Unit 2, spent fuel pool purge unit, fire area 38
- Unit 1, spent fuel areas 22, 23
- Unit 1 and 2, service water (RN) pumphouse, fire areas 29, 30

b. Findings

No findings were identified.

1R06 Flood Protection Measures (71111.06)

a. Inspection Scope

Underground Cables

The inspectors reviewed related flood analysis documents and inspected the areas listed below containing cables whose failure could adversely impact risk-significant equipment. The inspectors directly observed the condition of cables and cable support structures and, as applicable, verified that dewatering devices and drainage systems were functioning properly. In addition, the inspectors verified the licensee was identifying and properly addressing issues using the CAP. Documents reviewed are listed in the attachment.

- Unit 1, main power underground cable vault 1MH2B
- Unit 2, main power underground cable vault 2MH2B

b. Findings

No findings were identified.

1R11 Licensed Operator Requalification Program and Licensed Operator Performance (71111.11)

a. Inspection Scope

.1 Resident Inspector Quarterly Review of Licensed Operator Requalification

On August 16, 2017, the inspectors observed a simulator scenario conducted for training of an operating crew for a response to a steam line break in containment, reactor trip breaker failure, turbine trip failure and a safety injection failure.

The inspectors assessed the following:

- licensed operator performance
- the ability of the licensee to administer the scenario and evaluate the operators
- the quality of the post-scenario critique
- simulator performance

Documents reviewed are listed in the attachment.

.2 Resident Inspector Quarterly Review of Licensed Operator Performance in the Actual Plant/Main Control Room

The inspectors observed licensed operator performance in the main control room during surveillance testing of the Unit 1 turbine driven auxiliary feedwater pumps on September 14, 2017.

The inspectors assessed the following:

- use of plant procedures
- control board manipulations
- communications between crew members
- use and interpretation of instruments, indications, and alarms
- use of human error prevention techniques
- documentation of activities
- management and supervision

Documents reviewed are listed in the attachment.

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness (71111.12)

a. Inspection Scope

The inspectors assessed the licensee's treatment of the three issues listed below to verify the licensee appropriately addressed equipment problems within the scope of the maintenance rule (10 CFR 50.65, "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants"). The inspectors reviewed procedures and records to evaluate the licensee's identification, assessment, and characterization of the problems as well as their corrective actions for returning the equipment to a satisfactory condition.

Documents reviewed are listed in the attachment.

- Unit 0, CR 2143321, Investigate and repair loss of sample flow on 0EMF41 activity monitor
- Unit 2, CR 02143581, 2A Containment air return failed to start during testing
- Unit 1 and Unit 2, CR 2106523, emergency diesel generator pressure switch maintenance

b. Findings

No findings were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control (71111.13)

a. Inspection Scope

The inspectors reviewed the five maintenance activities listed below to verify that the licensee assessed and managed plant risk as required by 10 CFR 50.65(a)(4) and licensee procedures. The inspectors assessed the adequacy of the licensee's risk assessments and implementation of risk management actions. The inspectors also verified that the licensee was identifying and resolving problems with assessing and managing maintenance-related risks using the CAP. Additionally, for maintenance resulting from unforeseen situations, the inspectors assessed the effectiveness of the licensee's planning and control of emergent work activities. Documents reviewed are listed in the attachment.

- Unit 1, July 5, 2017, Instrument air compressor "E" trouble alarm
- Unit 1, August 15, 2017, Protected equipment plan with 1A EDG and 1A EDG battery charger out of service for maintenance
- Unit 2, August 16, 2017, Failure to operate at minimum trip voltage
- Unit 2, August 21, 2017, standby shutdown facility (SSF) output breaker charging springs did not discharge when expected
- Unit 0, September 26, 2017, Protected equipment plan with control area chilled water train "B", control room chilled water inoperable for planned 2B EDG Operability Test

b. Findings

No findings were identified.

1R15 Operability Determinations and Functionality Assessments (71111.15)

a. Inspection Scope

Operability and Functionality Review

The inspectors selected the five operability determinations or functionality evaluations listed below for review based on the risk-significance of the associated components and systems. The inspectors reviewed the technical adequacy of the determinations to ensure that technical specification operability was properly justified and the components or systems remained capable of performing their design functions. To verify whether components or systems were operable, the inspectors compared the operability and design criteria in the appropriate sections of the technical specification and updated final safety analysis report to the licensee's evaluations. Where compensatory measures were required to maintain operability, the inspectors determined whether the measures in place would function as intended and were properly controlled. Additionally, the inspectors reviewed a sample of corrective action documents to verify the licensee was identifying and correcting any deficiencies associated with operability evaluations.

Documents reviewed are listed in the attachment.

- Unit 1, control room area ventilation/control area chilled water chiller missing gasket found at the inlet to the strainer basket, CR 2143635
- Unit 2, 2VZTC6020 not properly controlling damper NSWPS-D-B4A, WR 20003366
- Unit 2, DG left and right bank crossover Heim joints, CR 2118835
- Unit 1, Pressurizer Heater Group 1B Decreased, CR 02136734
- Unit 2, 2A DG room overhead hatch leaking rainwater, CR 2149234

b. Findings

No findings were identified.

1R19 Post-Maintenance Testing (71111.19)

a. Inspection Scope

The inspectors either observed post-maintenance testing or reviewed the test results for the five maintenance activities listed below to verify the work performed was completed correctly and the test activities were adequate to verify system operability and functional capability.

- Work Request (WR) 20079110, post-maintenance testing (PMT) following repair of 2RN-148A, July 19, 2017
- Work Order (WO) 20142751, PMT following preventive maintenance on 2B auxiliary feedwater pump, August 2, 2017
- WO 20170584, PMT following periodic preventive maintenance on 1B chemical and volume control pump, August 3, 2017
- WO 20192719, PMT following repair of the 2A air return fan breaker, August 15, 2017
- WO 20194764, Standby shutdown facility diesel test following preventive maintenance, August 23, 2017

The inspectors evaluated these activities for the following:

- acceptance criteria were clear and demonstrated operational readiness
- effects of testing on the plant were adequately addressed
- test instrumentation was appropriate
- tests were performed in accordance with approved procedures
- equipment was returned to its operational status following testing
- test documentation was properly evaluated

Additionally, the inspectors reviewed a sample of corrective action documents to verify the licensee was identifying and correcting any deficiencies associated with post-maintenance testing. Documents reviewed are listed in the attachment.

b. Findings

No findings were identified.

1R22 Surveillance Testing (71111.22)

a. Inspection Scope

The inspectors reviewed the five surveillance tests listed below and either observed the test or reviewed test results to verify testing adequately demonstrated equipment operability and met technical specification and current licensing basis. The inspectors evaluated the test activities to assess for preconditioning of equipment, procedure adherence, and equipment alignment following completion of the surveillance. Additionally, the inspectors reviewed a sample of related corrective action documents to verify the licensee was identifying and correcting any deficiencies associated with surveillance testing.

Routine Surveillance Tests

- PT/0/A/4200/017A, Standby Shutdown Facility Diesel Test
- PT/0/A/4450/018, SSF Condenser Circulating Water Recovery Submersible Pump Test
- PT/2/A/4350/020, Diesel Generator Simultaneous Start

In-Service Tests (IST)

- PT/1/A/4300/007A, Centrifugal Charging Pump 1A Test
- PT/2/A/4200/005B, Safety Injection Pump 2B Performance Test

b. Findings

No findings were identified.

Cornerstone: Emergency Preparedness

1EP6 Drill Evaluation (71114.06)

a. Inspection Scope

The inspectors observed emergency preparedness drills conducted on July 15, 2017, and September 7, 2017. The inspectors observed licensee activities in the simulator and technical support center to evaluate implementation of the emergency plan, including event classification, notification, and protective action recommendations. The inspectors evaluated the licensee's performance against criteria established in the licensee's procedures. Additionally, the inspectors attended the post-exercise critique to assess the licensee's effectiveness in identifying emergency preparedness weaknesses and verified the identified weaknesses were entered in the CAP. Documents reviewed are listed in the attachment.

b. Findings

No findings were identified.

2. RADIATION SAFETY

Cornerstones: Public Radiation Safety and Occupational Radiation Safety

2RS6 Radioactive Gaseous and Liquid Effluent Treatment

a. Inspection Scope

Radioactive Effluent Treatment Systems: The inspectors walked down selected components of the gaseous and liquid radioactive waste (radwaste) processing and effluent discharge systems. To the extent practical, the inspectors observed and evaluated the material condition of in-place waste processing equipment for indications of degradation or leakage that could constitute a possible release pathway to the environment. Inspected components included waste gas decay tanks, monitor tanks, waste processing equipment, and associated piping and valves. The inspectors interviewed licensee staff regarding equipment configuration and effluent monitor operation. The inspectors also walked down and reviewed surveillance test records for the Unit 1 auxiliary building filtered exhaust train system.

Effluent Sampling and Discharge: The inspectors observed the collection and processing of weekly gaseous effluent samples from the Unit 2 containment air release and addition system. Technician proficiency in collecting, processing, and preparing the applicable release permits was evaluated. The inspectors reviewed recent liquid and gaseous release permits including pre-release sampling results, effluent monitor alarm set points, and public dose calculations. For the Unit 1 vent monitor (1EMF-36), waste liquid discharge monitor (0EMF-49), and waste monitor tank vent monitor (0EMF-58), the inspectors reviewed calibration and functional test records for radiation detection and flow monitoring elements and evaluated the adequacy of radioactive sources used during testing. The inspectors reviewed and discussed with licensee staff the methodology used to determine stack flow rates and compared current vent flows to design values in the offsite dose calculation manual (ODCM).

The inspectors reviewed the 2015 and 2016 Annual Radioactive Effluent Reports to evaluate reported doses to the public, review unplanned releases, and to review ODCM changes. The inspectors also reviewed compensatory sampling data for time periods when selected radiation monitors were out of service. The inspectors reviewed the results of interlaboratory cross-checks for laboratory instruments used to analyze effluent samples. The inspectors also reviewed licensee effluent source term characterizations and changes to effluent release points. In addition, the inspectors evaluated recent land use census results.

Problem Identification and Resolution: The inspectors reviewed and discussed selected CAP documents associated with gaseous and liquid effluent processing and release activities including licensee sponsored assessments. The inspectors evaluated the licensee's ability to identify and resolve issues.

Inspection Criteria: Radwaste system operation and effluent processing activities were evaluated against requirements and guidance documented in the following: 10 CFR Part 20; 10 CFR Part 50 Appendix I; ODCM; Updated Final Safety Analysis Report (UFSAR) Section 11; Regulatory Guide (RG) 1.21, "Measuring, Evaluating, and Reporting Radioactivity in Solid Wastes and Releases of Radioactive Materials in Liquid

and Gaseous Effluents from Light-Water-Cooled Nuclear Power Plants"; RG 1.109, "Calculation of Annual Doses to Man from Routine Releases of Reactor Effluents for the Purpose of Evaluating Compliance with 10 CFR Part 50 Appendix I"; and Technical Specifications (TS) Section 5. Documents reviewed during the inspection are listed in the report attachment.

b. Findings

No findings were identified.

2RS7 Radiological Environmental Monitoring Program (REMP)

a. Inspection Scope

REMP Implementation: The inspectors observed routine collection of air and vegetation samples at selected locations as required by the licensee's ODCM and UFSAR. The inspectors noted the material condition of the continuous air samplers and co-located environmental dosimeters. The inspectors also reviewed calibration and maintenance records for air and water sampling equipment.

The inspectors reviewed the 2015 and 2016 Annual Radiological Environmental Operating Reports and the 2016 Annual Radioactive Effluent Release Report. Selected environmental measurements were reviewed for consistency with licensee effluent data, evaluated for radionuclide concentration trends, and compared with detection level sensitivity requirements as described in the ODCM. The inspectors assessed the licensee's response to any missed or anomalous environmental samples. The inspectors also reviewed the results of interlaboratory cross-checks for laboratory instruments used to analyze environmental samples. Any changes to the ODCM, Land Use Census, or environmental program processes were discussed with licensee staff.

Meteorological Monitoring Program: The inspectors observed the physical condition of the meteorological tower and its instrumentation and discussed equipment operability and maintenance history with licensee staff. The inspectors evaluated transmission of locally generated meteorological data to other licensee groups such as emergency operations personnel and main control room operators. Calibration records for the meteorological measurements of wind speed, wind direction, and temperature were reviewed. The inspectors also reviewed meteorological measurement data recovery for calendar years 2015 and 2016.

Ground Water Protection: The inspectors reviewed the licensee's continued implementation of the industry's Ground Water Protection Initiative Nuclear Energy Institute (NEI) 07-07) and discussed any changes to the program. The inspectors discussed program guidance for dealing with spills, leaks, and unexpected discharges with licensee staff and reviewed recent monitoring well results. The inspectors also reviewed recent entries into the 10 CFR 50.75(g) decommissioning file. The inspectors reviewed and discussed the licensee's program for monitoring of structures, systems, and components with the potential to release radioactive material to the environment. Potential effluent release points due to onsite surface water bodies were also evaluated.

Problem Identification and Resolution: The inspectors reviewed CAP documents in the areas of radiological environmental monitoring and meteorological tower maintenance. The inspectors evaluated the licensee's ability to identify and resolve the issues. The inspectors also reviewed recent self-assessment results.

Inspection Criteria: The inspectors evaluated REMP implementation and meteorological monitoring against the requirements and guidance contained in: 10 CFR Part 20; Appendices E and I to 10 CFR Part 50; TS Section 5; ODCM Rev. 60; UFSAR Chapters 2 and 16; RG 4.15, Quality Assurance for Radiological Monitoring Programs (Normal Operation) - Effluent Streams and the Environment; Branch Technical Position, "An Acceptable Radiological Environmental Monitoring Program" – 1979; RG 1.23, "Meteorological Monitoring Programs for Nuclear Power Plants"; NEI 07-07, "Industry Groundwater Protection Initiative – Final Guidance Document"; and approved licensee procedures. Documents reviewed during the inspection are listed in the attachment.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification (71151)

a. Inspection Scope

The inspectors reviewed a sample of the performance indicator (PI) data, submitted by the licensee, for the Unit 1 and Unit 2 PIs listed below. The inspectors reviewed plant records compiled between July 2016 and June 2017, to verify the accuracy and completeness of the data reported for the station. The inspectors verified that the PI data complied with guidance contained in Nuclear Energy Institute 99-02, "Regulatory Assessment Performance Indicator Guideline," and licensee procedures. The inspectors verified the accuracy of reported data that were used to calculate the value of each PI. In addition, the inspectors reviewed a sample of related corrective action documents to verify the licensee was identifying and correcting any deficiencies associated with PI data. Documents reviewed are listed in the attachment.

Cornerstone: Mitigating Systems

- residual heat removal system

Cornerstone: Occupational Radiation Safety

- occupational exposure control effectiveness

The inspectors evaluated occupational exposure control effectiveness PI data from October 2016 through May 2017, and reviewed recent PI results. For the assessment period, the inspectors reviewed electronic dosimeter alarm logs and condition reports related to controls for exposure significant areas. Documents reviewed are listed in the attachment.

Cornerstone: Public Radiation Safety

- Radiological Effluent Technical Specifications/Offsite Dose Calculation Manual Radiological Effluent Occurrences (RETS/ODCM) radiological effluent occurrences

The inspectors evaluated radiological control effluent release occurrences PI data from October 2016 through June 2017, and reviewed recent PI results. For the assessment period, the inspectors reviewed liquid and gaseous release permits, the 2016 Annual Effluent Release Report, and condition reports related to effluent control issues. The inspectors also reviewed licensee procedural guidance for collecting and documenting PI data. Documents reviewed are listed in the attachment.

b. Findings

No findings were identified.

4OA2 Problem Identification and Resolution (71152)

.1 Routine Review

The inspectors screened items entered into the licensee's CAP to identify repetitive equipment failures or specific human performance issues for followup. The inspectors reviewed nuclear condition reports, attended screening meetings, or accessed the licensee's computerized corrective action database.

.2 Annual Followup of Selected Issues

a. Inspection Scope

The inspectors conducted a detailed review of problem identification program report CR 02141813, "Bent connector pin assembly on TSC CNZ-088."

The inspectors evaluated the following attributes of the licensee's actions:

- complete and accurate identification of the problem in a timely manner
- evaluation and disposition of operability and reportability issues
- consideration of extent of condition, generic implications, common cause, and previous occurrences
- classification and prioritization of the problem
- identification of root and contributing causes of the problem
- identification of any additional condition reports
- completion of corrective actions in a timely manner

Documents reviewed are listed in the attachment.

b. Findings and Observations

No findings were identified.

4OA5 Other Activities

.1 Operation of an Independent Spent Fuel Storage Installation (60855.1)

a. Inspection Scope

The inspectors performed a walkdown of the onsite independent spent fuel storage installation (ISFSI) and monitored the activities associated with the dry fuel storage campaign completed on August 18, 2017. The inspectors reviewed changes made to the ISFSI programs and procedures, including associated 10 CFR 72.48, "Changes, Tests, and Experiments," screens and evaluations to verify that changes made were consistent with the license or certificate of compliance. The inspectors observed the Unit 1 loading activities to verify that the licensee recorded and maintained the location of each fuel assembly placed in the ISFSI. The inspectors also reviewed surveillance records to verify that daily surveillance requirements were performed as required by technical specifications. Documents reviewed are listed in the attachment.

b. Findings

No findings were identified.

4OA6 Meetings, Including Exit

On October 25, 2017, the resident inspectors presented the inspection results to Mr. Tom Simril and other members of the licensee's staff. The inspectors verified that no proprietary information was retained by the inspectors or documented in this report.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel
C. Abernathy, Manager, Nuclear Site Services
S. Andrews, Sr. Engineer Regulatory Affairs,
T. Arlow, Emergency Planning Manager
E. Benfield, RP Supervising Scientist
C. Bigham, Director Nuclear Organizational Effectiveness
M. Carwile, Chemistry Manager
B. Cauthen, Lead Engineer
C. Curry, Plant Manager
C. Fletcher, Regulatory Affairs Manager
N. Flippin, Work Management Manager
B. Foster, Operations Manager
T. Jenkins, Maintenance Manager
L. Keller, General Manager Nuclear Engineering
B. Leonard, Training Manager
T. Simril, Site Vice-President
J. Smith, Radiation Protection Manager
J. Wylie, Director, Nuclear Plant Security
C. Wilson, Sr. Engineer Regulatory Affairs

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

None

LIST OF DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection
CR 2151971, Hurricane IRMA preparation critique
RP/0/B/5000/030, Severe Weather Preparations, Rev. 017
RP/0/A50000/007, Natural Disaster and Earthquake, Rev. 046

Section 1R04: Equipment Alignment
OP/2/A/6200/006, Safety Injection System
OP/1/A/6450/004, Fuel Pool Ventilation System

Section 1R05: Fire Protection
CSD-CNS-PFP-FB1-0605-001, Fuel Building, Elevation 594, 605, 611, & 631, Pre-Fire Plan, Rev. 0
CSD-CNS-PFP-FB2-0605-001, Fuel Building, Elevation 594, 605, 611, & 631, Pre-Fire Plan, Rev. 0
CSD-CNS-PFP-PA-002, Protected Area Northeast Pre-Fire Plan, Rev. 0
CSD-CNS-PFP-AB-0560-001, Auxiliary Building Elevation 554 and 560, Pre-fire Plan, Rev. 0

Section 1R06: Flood Protection Measures
IP/0/A/3850/013/ B, Procedure for Sealing Rigid Steel Field Run Conduit, Rev. 013
WO 20142990 01, 1EPA: (1B) Inspect and clean conduit seals and drain in manhole 1MH1B
WO 20137917 01, 2EPA: (2B) Inspect and clean conduit seals and drain in manhole 2MH2B
CNS Directive 3.1.18, Control of Hazard Barriers, Rev. 12

Section 1R11: Licensed Operator Requalification
Simulator Exercise Guide, S-35 Course Code: CNOV35-N, Rev. 19

Section 1R12: Maintenance Effectiveness
CR 2097312, EVT-2017 and EVT-EMF-2017
WR 20081263, 0EMF: I/R Loss of Sample Flow

Section 1R13: Maintenance Risk Assessments and Emergent Work Control
CR 02134856, VI comp E trouble
CR 02144939, SSF output breaker charging springs did not discharge when expected
CR 1478501, Power factor controller VS breaker closed position
WO 20170556-01, Failure to operate at minimum trip voltage
Protected Equipment plan for B Train OOS

Section 1R15: Operability Evaluations
CR 02150452, 2A Load Sequencer shows 2ETZ-8 (2A NS) Tripped
CR 02148913, Unable to adjust RN 1B strainer backwash flow

Section 1R19: Post-Maintenance Testing
PT/0/A/4200/017A, Standby Shutdown Facility Diesel Test
AD-EG-ALL-1311, I/R SSF Slow Start
CR 2143581, 2A Air Return Fan failed to start during testing

Section 1EP6: Drill Evaluation

EPA D, Emergency Plan Section D Emergency Classification System, Rev. 147
EP-EAL-EALMATRIX, CNS wallchart

Section 2RS6: Radioactive Gaseous and Liquid Effluent Treatment

Procedures, Guidance Documents, and Manuals

AD-PI-ALL-0100, CAP, Rev. 7
HP/0/B/1001/014, Collection and Preparation of Composite Samples, Rev. 27
HP/0/B/1001/018, RP Compliance Sampling, Rev. 39
OP/0/B/6500/015, Discharging a Monitor Tank to the Environment, Rev. 112
HP/0/B/1004/004, Radioactive Liquid Waste Release, Rev. 44
HP/0/B/1004/005, Radioactive Gaseous Waste Release – VQ and VP System, Rev. 58
HP/0/B/1004/016, Monthly Unit Vent and Auxiliary Monitor Tank Building Vent Release Activity Calculations, Rev. 15
HP/0/B/1004/034, Radioactive Waste Gas (WG) System Release, Rev. 12
HP/0/B/1009/011, EMF Loss, Rev. 43
AD-CP-DEC-0021, Projected Offsite Dose from Radioactive Effluents, Rev. 0

Records and Data

CNS Dose Commitment Data Sheet, Dose Estimate for June 2017, 07/19/17
CNS Dose Commitment Data Sheet, Dose Estimate for March 2017, 04/20/17
Gaseous Waste Release (GWR) Permit Report, GWR Nos.: 2017062, U2 Cont. Air Release & Addition (VQ); 2017046, U1 VQ; and 2017043, U2 VQ
Liquid Waste Release (LWR) Permit Report, LWR Nos: 2017031, Recycle Monitor Tank B; and 201703, Auxiliary Monitor Tank B
CNS, U1 and U2, 2015 and 2016 Annual Radioactive Effluent Release Report (ARERR)
CNS, U1 and U2, Offsite Dose Calculation Manual, Rev. 59 and 60
Inter-laboratory Cross Check Program Sample Analysis Forms, select records for count room, 2015 and 2016
TSAIL Report for the Period 01/01/17 to 07/01/17 (Effluent Radiation Monitors Out of Service)
PT/0/A/4450/001C, Auxiliary Building Filtered Exhaust Train Performance Tests, Rev. 34 Dated 05/02/16 and 6/21/16
Work Order (WO) 20058707 01, Replace SGDT Air Filter, 06/27/17
WO 20050530 01, Unit Vent Flow Rate Monitoring, 08/01/16
Instrument Calibrations: 1EMF-36, WOs 2159907 and 20075502; 0EMF-58, WO 2159326 and WO 20075253; 0EMF-49, WOs 2098350 and 2191412
Vendor/Duke Manual Certification Form, Radiation Monitoring System Operation/Maintenance Manual Vol. 1, 03/14/11

CAP (CAP) Documents

Quick Hitter Self-Assessment Report, 02086395-05, Radioactive Effluents, 02/02/2017
CR 01945823
CR 01977533
CR 01977538
CR 01978081
CR 01899479
CR 02093314
CR 02098625
CR 01928810
CR 01945732

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