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

July 24, 2017

Mr. Tom Ray
Site Vice President
Duke Energy Corporation
Oconee Nuclear Station
7800 Rochester Highway
Seneca, SC 29672

SUBJECT: OCONEE NUCLEAR STATION – NRC INTEGRATED INSPECTION REPORT 05000269/2017002, 05000270/2017002, AND 05000287/2017002

Dear Mr. Ray:

On June 30, 2017, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Oconee Nuclear Station Units 1, 2, and 3. On July 20, 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 findings or violations 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.: 50-269, 50-270, 50-287
License Nos.: DPR-38, DPR-47, DPR-55

Enclosure:
IR 05000269/2017002, 05000270/2017002,
and 05000287/2017002
w/Attachment: Supplemental Information

cc: Distribution via ListServ

SUBJECT: OCONEE NUCLEAR STATION - NRC INTEGRATED INSPECTION REPORT 05000269/2017002, 05000270/2017002, AND 05000287/2017002 July 24, 2017

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**U.S. NUCLEAR REGULATORY COMMISSION**

**REGION II**

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|---|---|
| Docket Nos.: | 50-269, 50-270, 50-287 |
| License Nos.: | DPR-38, DPR-47, DPR-55 |
| Report No.: | 05000269/2017002, 05000270/2017002, and 05000287/2017002 |
| Licensee: | Duke Energy Carolinas, LLC |
| Facility: | Oconee Nuclear Station, Units 1, 2, and 3 |
| Location: | Seneca, SC 29672 |
| Dates: | April 1, 2017 through June 30, 2017 |
| Inspectors: | E. Crowe, Senior Resident Inspector<br>N. Childs, Resident Inspector<br>J. Parent, Resident Inspector |
| Approved by: | Frank Ehrhardt, Chief<br>Reactor Projects Branch 1<br>Division of Reactor Projects |

Enclosure

## SUMMARY

IR 05000269/2017002, 05000270/2017002, and 05000287/2017002, April 1, 2017, through June 30, 2017; Oconee Nuclear Station, Units 1, 2, and 3; Integrated Inspection Report

The report covered a 3-month period of inspection by resident inspectors. No findings were identified during this inspection period. The NRC's program for overseeing the safe operations 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 (RTP) for the entire inspection period.

Unit 2: Operated at or near 100 percent RTP for the entire inspection period.

Unit 3: Operated at or near 100 percent RTP 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 Summer Readiness of Offsite and Alternate AC Power System

The inspectors reviewed the licensee's procedures for operation and continued availability of offsite and onsite alternate AC power systems because the licensee implemented modifications to permanent Oconee Nuclear Station 230kV switchyard equipment which included improved relays, new style circuit breakers, and power connections. The inspectors also reviewed the communications protocols between the transmission system operator and the licensee to verify that the appropriate information is exchanged when issues arise that could affect the offsite power system.

The inspectors reviewed the material condition of offsite and onsite alternate AC power systems (including switchyard and transformers) by performing a walkdown of the switchyard. The inspectors reviewed outstanding work orders and assessed corrective actions for degraded conditions that impacted plant risk or required compensatory actions. Documents reviewed are listed in the attachment.

.2 Impending Adverse Weather Conditions

The inspectors reviewed the licensee's preparations to protect risk-significant systems from tornadoes expected on May 24, 2017. The inspectors evaluated the licensee's implementation of adverse weather preparation procedures and compensatory measures, including operator staffing, before the onset of and during the adverse weather conditions. The inspectors reviewed the licensee's plans to address the consequences that may result from tornadoes. 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

.1 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 four systems or trains to inspect:

- Unit 0, Keowee Unit 2 and emergency AC power path systems during ACB-1 maintenance
- Units 1, 2, and 3, A & C reactor building cooling unit (RBCU) trains during modification to B RBCU for Units 1, 2, and 3
- Units 1, 2, and 3, CA and CB vital batteries and associated breakers and chargers during the 3CA battery modification
- Unit 2, 2B reactor building spray (RBS) pump train during 2A RBS pump maintenance

.2 Complete Walkdown

The inspectors verified the alignment of the Oconee Nuclear Station AC power sources. The inspectors selected this system for assessment because it is a risk-significant mitigating system. The inspectors determined the correct system lineup by reviewing plant procedures, drawings, the updated final safety analysis report, and other documents. The inspectors reviewed records related to the system design, maintenance work requests, and deficiencies. The inspectors verified that the selected system was correctly aligned by performing a complete walkdown of accessible components. The inspectors observed whether there was indication of degradation, and if so, verified the degradation was being appropriately managed in accordance with an aging management program and it had been entered into the licensee's corrective action program.

To verify the licensee was identifying and resolving equipment alignment discrepancies, the inspectors reviewed corrective action documents, including condition reports and outstanding work orders. The inspectors also reviewed periodic reports containing information on the status of risk-significant systems, including maintenance rule reports and system health reports. Documents reviewed are listed in the attachment.

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

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

- Unit 1, low pressure injection (LPI) hatch area, fire zone 70
- Unit 1, cable room, fire zone 106
- Units 1 & 2, auxiliary building elevation 758 ft, fire zone 55A
- Unit 2, auxiliary building elevation 758 ft, fire zone 56
- Unit 2, cable room, fire zone 105
- Unit 3, equipment room, fire zone 89

b. Findings

No findings were identified.

1R06 Flood Protection Measures (71111.06)

a. Inspection Scope

.1 Internal Flooding

The inspectors reviewed related flood analysis documents and walked down the area listed below containing risk-significant structures, systems, and components susceptible to flooding. The inspectors verified that plant design features and plant procedures for flood mitigation were consistent with design requirements and internal flooding analysis assumptions. The inspectors also assessed the condition of flood protection barriers and drain systems. In addition, the inspectors verified the licensee was identifying and

properly addressing issues using the corrective action program. Documents reviewed are listed in the attachment.

- Unit 1, electrical equipment room

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 May 10, 2017, the inspectors observed an evaluated simulator scenario administered to an operating crew, conducted in accordance with the licensee's accredited requalification training program.

The scenario involved a low pressure service water (LPSW) pump trip and an LPSW pump failure to auto-start. Afterwards, a safety rod dropped which caused an integrated control system (ICS) runback. During the runback the main turbine spuriously tripped and the reactor failed to trip automatically and manually (anticipated transient without scram (ATWS)). During the ATWS, a reactor coolant system (RCS) leak occurred, which evolved into a small break loss of coolant accident (SBLOCA). As the scenario progressed, a motor driven emergency feedwater (MDEFDW) pump failed to start and engineered safeguards (ES) Channel 3 failed to go to manual. Events progressed to a point where the crew entered an alert declaration.

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 a turbine valve movement test. This test involved reducing the unit to 96 percent reactor power, then operators verified freedom of operation of main steam stop valves, turbine control valves, and combined reheat stop /intercept valves. The reactor operators returned reactor power back to 100 percent once testing was completed.

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. The inspectors also interviewed plant personnel to assess the licensee's treatment of performance deficiencies and extent of condition. In addition, the inspectors performed a review of the licensee's Quality Assurance (QA) Program to ensure the licensee was in compliance with their program requirements. Documents reviewed are listed in the attachment.

- Units 1, 2, and 3, ATWS system, maintenance rule (a)(1) evaluation due to repetitive maintenance rule functional failure
- Units 1, 2, and 3, 230 kV power circuit breakers, commercial grade dedication for QA-1 use (QA sample)
- Unit 1, standby shutdown facility (SSF) super system, maintenance rule (a)(1) evaluation due to unavailability criteria exceeded

b. Findings

No findings were identified.

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

a. Inspection Scope

The inspectors reviewed the seven 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 risk using the corrective action program. 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 0, April 24, 2017, emergent yellow risk due to abnormal wear discovered on ACB-1 (Keowee Hydro Unit 1 overhead path feeder breaker)
- Unit 0, April 24, 2017, planned yellow risk due to turbine building flooding concerns related to planned maintenance of 1CCW-13 [1D condenser circulating water (CCW) pump discharge valve]
- Unit 0, May 2, 2017, planned yellow risk due to turbine building flooding concerns related to planned maintenance of 3CCW-10 (3A CCW pump discharge valve)
- Unit 2, May 8, 2017, emergent yellow risk due to emergent maintenance to 2LPSW-525 discharge valve for the 2B MDEFDW pump
- Unit 1, May 16, 2017, projected yellow risk due to 1LP-7 (LPI pumps suction header B crossover to LPI pump C) being unavailable
- Unit 0, May 22, 2017, planned yellow risk due to auxiliary building flooding concerns related to maintenance activities associated with the 3A LPI pump and removal of flooding barriers coincident with calibration of the high activity waste tank and low activity waste tank level transmitters
- Unit 0, May 24, 2017, emergent orange risk due to SSF monthly maintenance coincident with a tornado watch

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 seven 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, 2, & 3, high pressure injection pump minimum recirculation orifice flows outside of design analyses, nuclear condition report (NCR) 02118860
- Unit 1, 2, & 3, damaged pin found in Keowee Hydro Unit 1 output breaker (ACB-1) operating mechanism, NCR 02118979
- Unit 1, 2, & 3, SF-44, SF-46, and 3SF-44 are non-conforming to the current licensing basis, NCR 02119055
- Unit 1, 2, & 3, RBCU fusible links are not being purchased as QA-1, NCR 02121240
- Unit 1, letdown line pressure is a low operational margin issue, NCR 02118768
- Unit 1, 1B2 reactor coolant pump monitor trip spurious alarm, NCR 02115916
- Unit 3, relief valve 3SF-19 failed the as-found set point testing, NCR 02125546

b. Findings

No findings were identified.

1R18 Plant Modifications (71111.18)

a. Inspection Scope

The inspectors verified that the two plant modifications listed below did not affect the safety functions of important safety systems. The inspectors confirmed the modifications did not degrade the design bases, licensing bases, and performance capability of risk significant structures, systems and components. The inspectors also verified modifications performed during plant configurations involving increased risk did not place the plant in an unsafe condition. Additionally, the inspectors evaluated whether system operability and availability, configuration control, post-installation test activities, and changes to documents, such as drawings, procedures, and operator training materials, complied with licensee standards and NRC requirements. In addition, the inspectors reviewed a sample of related corrective action documents to verify the licensee was identifying and correcting any deficiencies associated with modifications. Documents reviewed are listed in the attachment.

- Engineering Change (EC) 107382, Replace PCB-21 in 230 kV Switchyard
- EC 408574, Remove Panels from Unit – 1/2/3 “B” RBCU Ductwork

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 four 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 Order (WO) 20164983, Inspect/Repair 2LPSW-0525 Failing Stroke Time Test, May 11, 2017

- WO 02147339, 0 SYD RL 27XSC1: Replace SWYD ISOL Signal AUX Relay CHNL 1, May 17, 2017
- WO 20168758, Air Handling Unit (AHU) 1-17 I/R Broken Fan Rotating Assembly, June 2, 2017
- PT/0/A/0620/009, Enclosures 13.1 and 13.2, KHU-1 and KHU-2 Operability Verification, June 16, 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 four 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. Documents reviewed are listed in the attachment.

Routine Surveillance Tests

- PT/1/A/0203/006 A, Low Pressure Injection Pump Test – Recirculation
- PT/1/A/2200/019, KHU-1 Turbine Sump Pump IST Surveillance
- PT/3/A/0152/013, Low Pressure Service Water System Valve Stroke Test

In-Service Tests (IST)

- PT/1/A/0204/007, Reactor Building Spray Pump 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 April 5, 2017, May 16, 2017, and June 21, 2017. The inspectors observed licensee activities in the simulator and/or 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 critiques to assess the licensee's effectiveness in identifying emergency preparedness weaknesses and verified the identified weaknesses were entered in the corrective action program. Documents reviewed 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, Unit 2, and Unit 3 PIs listed below. The inspectors reviewed plant records compiled between May 2016 and May 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

- high pressure injection system
- cooling water system

Cornerstone: Barrier Integrity

- reactor coolant system leak rate

b. Findings

No findings were identified.

## 4OA2 Problem Identification and Resolution (71152)

### .1 Routine Review

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

### .2 Semi-Annual Trend Review

#### a. Inspection Scope

The inspectors reviewed issues entered in the licensee's corrective action program and associated documents to identify trends that could indicate the existence of a more significant safety issue. The inspectors focused their review on repetitive equipment issues and human performance trends, but also considered the results of inspector daily nuclear condition report screenings, licensee trending efforts, and licensee human performance results. The review nominally considered the 6-month period of January 2017 through June 2017 although some examples extended beyond those dates when the scope of the trend warranted. The inspectors compared their results with the licensee's analysis of trends. Additionally, the inspectors reviewed the adequacy of corrective actions associated with a sample of the issues identified in the licensee's trend reports. The inspectors also reviewed corrective action documents that were processed by the licensee to identify potential adverse trends in the condition of structures, systems, and/or components as evidenced by acceptance of long-standing non-conforming or degraded conditions. Documents reviewed are listed in the attachment.

#### b. Findings and Observations

No findings were identified. The inspectors noted occasional random failures of radiation indication and alarm assemblies, an increase in Unit 1 reactor coolant pump seal leakoff, and failure of valves to stroke within their required stroke times. The inspectors also noted increases in the discovery of transient combustibles that were not controlled or evaluated. However, the inspectors did not find sufficient instances of the above issues to develop a trend. The inspectors noted the licensee promptly entered emergent issues into their corrective action program and generally assigned corrective actions in the form of work orders for equipment related issues.

### .3 Annual Followup of Selected Issues

#### a. Inspection Scope

The inspectors conducted a detailed review of the following two NCRs:

- NCR 2122484, Water in CT-5 Cable Trench
- NCR 2127667, AHU 1-17 was making excessive noise

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

CT-5 Cable Trench

No findings were identified. The inspectors reviewed NCR 2122484 due to several NCRs over the years identifying the accumulation of water and mud in the CT-5 trench. This trench contains medium voltage cabling from the CT-5 transformer to the emergency standby buses. The CT-5 transformer serves as a backup power source to the standby buses when the onsite emergency power sources are unavailable. The inspectors verified that the licensee implemented corrective actions to periodically remove water accumulation via portable pumps. The inspectors also verified that the medium voltage cabling was included within the scope of the licensee's aging management program and tested in accordance with industry recommendations and at the appropriate frequency. The inspectors noted that the medium voltage cabling of concern was rated for wet locations and was mounted on racks on the side of the CT-5 trench above any maximum water level observed to date. The NRC inspectors concluded that the licensee properly identified issues associated with water accumulation in the CT-5 trench and implemented corrective actions such that CT-5 functionality had not been adversely impacted. The inspectors noted that the licensee will evaluate more permanent options to reduce the potential risks associated with water accumulation in the CT-5 trench via NCR 2122484.

AHU 1-17

No findings were identified. The inspectors reviewed NCR 2127667 due to its similarity to other emergent conditions that had been identified for this AHU. The inspectors noted a range of issues from broken or degraded belts, failure to maintain power block battery room temperatures, and a damaged rotating unit. In all cases, the licensee was able to maintain the power block battery room temperature within the required temperature operating limits of the battery. The inspectors concluded that the licensee was properly entering the emergent issues into their corrective action program, promptly repairing the existing issue, and no challenges to plant stability occurred due to the emergent issues or repair activities.

4OA6 Meetings, Including Exit

On July 20, 2017, the resident inspectors presented the inspection results to Mr. Tom Ray 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
E. Burchfield, Plant Manager
C. Dunton, Director of Nuclear Site Support
T. Grant, Manager Engineering
R. Meixell, Regulatory Compliance
T. Ray, Site Vice-President
C. Wasik, Regulatory Affairs Manager

NRC Personnel
N. Childs, Resident Inspector
E. Crowe, Senior Resident Inspector
F. Ehrhardt, Branch Chief
J. Parent, Resident Inspector

## LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

None

## LIST OF DOCUMENTS REVIEWED

### Section 1R01: Adverse Weather Protection

Documents

COP-NUC-P01, TCC-SOC Response to Nuclear Switchyard Low Voltage, Effective Date: November 06, 2013

Drawings

OP-OC-EL-EPD-2, Electrical Distribution, Rev. 2

Nuclear Condition Report

01906691; 02089143

Other

EC 107365; EC 112917

Procedures

AP/0/A/1700/006, Natural Disaster, Rev. 028
AP/1/A/1700/034, Degraded Grid, Rev. 013
AP/2/A/1700/034, Degraded Grid, Rev. 013
AP/3/A/1700/034, Degraded Grid, Rev. 014
OP/0/B/1104/050, Weather Related Activities, Rev. 005
OP/0/A/1106/040, Generator Voltage Schedule, Rev. 066
PT/0/A/0110/018, Hot Weather Protection, Rev. 007
PT/0/A/0610/022, Degraded Grid and Switchyard Isolation Test, Rev. 038
SD 3.2.16, Control of Passive Design Features, Rev. 008

Work Orders/Requests

02014094; 02147339; 02147341; 02201862; 20031619; 20057095

### Section 1R04: Equipment Alignment

Documents

AD-OP-ALL-0201, Protected Equipment, Rev. 3
AD-WC-ALL-0410, Work Activity Integrated Risk Management, Rev. 2
Oconee Nuclear Site Selected Licensee Commitments, revised November 6, 2015
Oconee Nuclear Site Technical Specifications, amended August 13, 2014
Oconee Nuclear Site Technical Specifications Bases, updated June 3, 2011

Drawings

O-702-A, 6900V & 4160V Auxiliary Sys., Rev. 35
O-0703-G, Station Auxiliary Circuits 600/208V L/C 1X8, 1X9, 1X10 & MCC 1XS1, 1XS2, 1XS3, Rev. 91
O-1703-G, Station Auxiliary Circuits 600/208V L/C 2X8, 2X9, 2X10, 2X11A & MCC 2XS1, 2XS2, 2XS3, Rev. 91
O-2703-G, Station Auxiliary Circuits 600/208V L/C 3X8, 3X9, 3X10 & MCC 3XS1, 3XS2, 3XS3, Rev. 78
OFD-103A-2.1, Reactor Building Spray System (BS), Rev. 25

Nuclear Condition Report

02118979; 02122144

Other
Complex Activity Plan, 3CA and 3CB Battery Replacement, Approved June 1, 2017
Oconee Nuclear Station Clearance PRT-3-17-3CA BATT EC-0152, 3CA Control Battery, Approved June 6, 2017
Oconee Nuclear Station Protected Equipment Log for June 13, 2017

Procedures
PT/0/A/0610/022, Degraded Grid and Switchyard Isolation Test, Rev. 037
PT/2/A/0152/002, Building Spray System Valve Stroke Test, Rev. 035

Work Orders/Requests
02124296; 02147339; 02147754; 20031619; 20150272

**Section 1R05: Fire Protection**
Documents
OSS-0254.00-00-4008, Design Specification for Fire Protection, Rev. 38

Nuclear Condition Report
02116374

Other
O-0-SOG-9000-016, Fires Located within a Contaminated RCA/RCZ, Rev. 00
O-FS-1-AB-9758-001, Pre-Fire Plan for Unit 1 & 2 Auxiliary Building Elevation 758', Rev. 002
O-FS-1-AB-9771-001, Pre-Fire Plan for Unit 1 Auxiliary Building Elevation 771', Rev. 002
O-FS-1-AB-9809-001, Pre-Fire Plan for Unit 1 Auxiliary Building Elevation 809', Rev. 002
O-FS-2-AB-9758-001, Pre-Fire Plan for Unit 2 Auxiliary Building Elevation 758', Rev. 001
O-FS-2-AB-9809-001, Pre-Fire Plan for Unit 2 Auxiliary Building Elevation 809', Rev. 002
O-FS-3-AB-9796-001, Pre-Fire Plan for Unit 3 Auxiliary Building Elevation 796', Rev. 003

**Section 1R06: Internal Flood Protection**
Documents
OSC-6667, Auxiliary and Turbine Building Loss of Cooling/Ventilation Analysis, Rev. 23
OSC-10709, Internal Flooding Analysis, Rev. 1
OSC-11586, Turbine Building AIS Timeline - Loss of Critical Components, Rev. 0

Procedures
IP/0/B/0235/003, Turbine Basement Water Level Alarm System Check, Rev. 10

**Section 1R11: Licensed Operator Requalification**
Documents
OP-OC-ASE-05, Active Simulator Exam, Rev. 02a

Procedures
PT/3/A/0290/003, Turbine Valve Movement, Rev. 020

**Section 1R12: Maintenance Effectiveness**
Nuclear Condition Report
01813230; 0203330; 02105032; 02112844

Other
Duke Energy Commercial Grade Item Technical Evaluation CGD-3014.01-28-001, Switchyard 230 kV Power Circuit Breakers, Rev. 2
Design Specification OSS-0093.00-00-0002, Conformed Procurement Specification for 230 kV Switchyard Power Circuit Breakers, Rev. 3
System Health Reports, ATWS System, 1st quarter 2016 through 1st quarter 2017

Procedures
AD-EG-ALL-1103, Procurement Engineering Products, Rev. 2
AD-EG-ALL-1210, Maintenance Rule Program, Rev. 1

**Section 1R13: Risk Assessments**
Documents
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