UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
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ATLANTA, GEORGIA 30303-1257

May 7, 2012

Mr. T. Preston Gillespie, Jr.
Site Vice President
Duke Energy Carolinas, LLC
Oconee Nuclear Station
7800 Rochester Highway
Seneca, SC 29672

SUBJECT: OCONEE NUCLEAR STATION - NRC INTEGRATED INSPECTION REPORT 05000269/2012002, 05000270/2012002, 05000287/2012002

Dear Mr. Gillespie:

On March 31, 2012, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Oconee Nuclear Station Units 1, 2, and 3. The enclosed inspection report documents the inspection results, which were discussed on April 19, 2012, with you and other members of your staff.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

This report documents three NRC-identified findings of very low safety significance (Green). One of these findings was determined to be a violation of NRC requirements. Further a licensee-identified violation, which was determined to be of very low safety significance, is listed in this report. The NRC is treating these violations as non-cited violations (NCVs) consistent with Section 2.3.2 of the Enforcement Policy. If you contest these NCVs, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN.: Document Control Desk, Washington DC 20555-001; with copies to the Regional Administrator Region II; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at Oconee. If you disagree with a cross-cutting aspect assignment in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Regional Administrator, Region II; and the NRC Resident Inspector at Oconee.

Attachment

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's Agency-wide Document Access and Management System (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

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

Docket Nos.: 50-269, 50-270, 50-287, 72-04
License Nos.: DPR-38, DPR-47, DPR-55

Enclosure: NRC Integrated Inspection Report 05000269/2012002, 05000270/2012002, 05000287/2012002 w/Attachment: Supplemental Information

cc w/encl: (See page 3)

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Letter to T. Preston Gillespie, Jr., from Jonathan H. Bartley dated May 7, 2012

SUBJECT: OCONEE NUCLEAR STATION - NRC INTEGRATED INSPECTION REPORT 05000269/2012002, 05000270/2012002, 05000287/2012002

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U. S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos.:	50-269, 50-270, 50-287
License Nos.:	DPR-38, DPR-47, DPR-55
Report Nos.:	05000269/2012002, 05000270/2012002, 05000287/2012002
Licensee:	Duke Energy Carolinas, LLC
Facility:	Oconee Nuclear Station, Units 1, 2 and 3
Location:	Seneca, SC 29672
Dates:	January 1, 2012, through March 31, 2012
Inspectors:	A. Sabisch, Senior Resident Inspector G. Ottenberg, Resident Inspector K. Ellis, Resident Inspector S. Walker, Senior Reactor Inspector (Sections 4OA3.3, 4OA7) G. Crespo, Senior Construction Inspector (Section 1R17) A. Vargas-Mendez, Senior Reactor Inspector (Sections 1R07, 4OA5) M. Riley, Reactor Inspector (Section 1R07) J. Hamman, Reactor Inspector (Section 1R17)
Approved by:	Jonathan H. Bartley, Chief Reactor Projects Branch 1 Division of Reactor Projects

Enclosure

SUMMARY OF FINDINGS

IR 05000269/2012-002, 05000270/2012-002, 05000287/2012-002; 01/01/2012 – 3/31/2012; Oconee Nuclear Station; Maintenance Effectiveness, Evaluations of Changes, Tests, or Experiments and Permanent Plant Modifications, Problem Identification and Resolution.

The report covered a three-month period of inspection by the resident inspectors and four Region-based inspectors. Three Green findings were identified, one of which was determined to be a violation of NRC requirements. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, Significance Determination Process (SDP). Cross-cutting aspects are determined using IMC 0310, Components Within The Cross-Cutting Areas. Findings for which the SDP does not apply may be Green or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, Reactor Oversight Process.

Mitigating Systems Cornerstone

- Green: An NRC-Identified finding was identified for the licensee's failure to develop an adequate procedure for performing cable degradation testing on medium voltage cables. Consequently, a degraded condition of one of the conductors from CT-5 to the standby buses was not addressed for approximately 18 months and subsequently failed accruing approximately 30 days of unavailability to replace the cable.

  The performance deficiency (PD) was determined to be more than minor as it affected the Mitigating Systems cornerstone attribute of equipment performance in that failure to identify the degraded condition resulted in unplanned unavailability of the CT-5 power path. The finding was of very low safety significance because the "Y" phase cable from CT-5 was capable of performing its function from June 2010 until December 22, 2011. The cause of this finding was directly related to the implementation of operating experience aspect of the Operating Experience component of the Problem Identification and Resolution cross-cutting area, in that, the licensee failed to incorporate industry guidance to establish test acceptance criteria for degradation of power cables insulation. [P.2(b)] (Section 1R12)

- Green: An NRC-Identified non-cited violation (NCV) of 10 CFR 50, Appendix B, Criterion V, Instructions, Procedures, and Drawings, was identified for the licensee's failure to develop adequate procedures governing the installation of safety related control cables. The work package did not contain the maximum tension limits and the specified testing method was inadequate to demonstrate that control cables had not been damaged during the cable pull. The licensee revised TI/0/A/3000/030, PSW Cable Pulling in Duct Banks Using Mechanical Device, and re-tested the control cable ensure its functional integrity.

  The performance deficiency was determined to be more than minor because it was associated with the Design Control attribute of the Mitigating Systems Cornerstone and adversely affected the cornerstone objective in that it could represent an indeterminate functional condition for proper control functions for safety-related equipment operation in

the protected service water system and the standby shutdown facility. The finding was of very low safety significance because it did not result in the loss of any system safety function. The cause of the finding directly involved the cross-cutting aspect of appropriate planning of work activities in the Work Control component of the Human Performance area, in that the licensee failed to implement procedures which established planned contingencies, compensatory actions, and abort criteria. [H.3(a)] (Section 1R17)

- Green: An NRC-Identified finding was identified for the licensee's failure to ensure the Oconee UFSAR-described Auxiliary Building (AB) flood protection measures were maintained. Penetrations below the design basis 796.5 foot mean sea level (msl) elevation were not included in a surveillance program to verify below-grade penetrations would not allow flooding of the AB.

  The performance deficiency was more than minor because if left uncorrected, it could lead to a more significant safety concern, in that, other onsite activities such as excavation work exterior to the AB walls could provide a pathway for flood waters to enter the AB through the uncontrolled penetrations causing the loss of accident mitigation systems. The finding was of very low safety significance because an actual loss of operability or functionality did not occur. The cause of the finding was directly related to the appropriate corrective actions aspect of the Corrective Action Program component in the area of Problem Identification and Resolution because the licensee failed to correct the O-310 K series to identify that all external AB walls as flood barriers. [P.1(d)] (Section 4OA2)

A violation of very low safety significance that was identified by the licensee has been reviewed by the inspectors. Corrective actions taken or planned by the licensee have been entered into the licensee's corrective action program. This violation and corrective action tracking number are listed in Section 4OA7 of this report.

REPORT DETAILS

Summary of Plant Status

Unit 1 began the inspection period at approximately 100 percent rated thermal power (RTP) and remained there until February 3, 2012, when power was reduced to approximately 85 percent RTP to support secondary side valve testing. The unit returned to 100 percent RTP on February 4, 2012, where it remained for the rest of the inspection period.

Unit 2 began the inspection period at approximately 100 percent RTP and remained there until February 24, 2012, when power was reduced to approximately 85 percent RTP to support secondary side valve testing. The unit returned to 100 percent RTP on February 25, 2012, where it remained for the rest of the inspection period.

Unit 3 began the inspection period at approximately 100 percent RTP where it remained until an end-of-cycle power coast down commenced. Reactor power reached approximately 90 percent RTP at the end of the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R01 Adverse Weather Protection

a. Inspection Scope

External Flooding: The inspectors performed the walkdowns of the two following exterior building walls to evaluate the plant's readiness to cope with external flooding. Documents reviewed are listed in the Attachment.

- Turbine Building (TB) and Auxiliary Building (AB) including the newly-constructed structures surrounding the borated water storage tanks and the below grade floors in both buildings following a period of heavy rain on January 11, 2012, to verify the adequacy of flood protection features to prevent water from entering the plant and impacting plant equipment. The walkdown also included the outside yard drains including those recently added as part of the Natural Phenomena Barrier System project to ensure they were clear of debris and functioning properly.
- AB, including the newly-constructed Manhole 7, and the associated below grade penetrations into the AB to verify the adequacy of flood protection features to prevent water from entering the plant and impacting plant equipment. The walkdown also included the internal trenches of the AB including the low activity waste tank (LAWT).

b. Findings

Introduction: An unresolved item (URI) was identified concerning the effect of a design change on AB features to mitigate rainwater intrusion resulting from accumulation on the site during a Probable Maximum Flood (PMF) event which would flood the AB rendering

safety-related/risk significant equipment inoperable and the effect of a new site inundation study on existing UFSAR described flood levels.

Description: During a walkdown of Manhole 7 on February 1, 2012, inspectors noted that two conduit penetrations used to route PSW cabling into the AB were not sealed and provided a direct flooding pathway into the AB. These penetrations were identified as requiring seals whenever not being used for cable pulls or sealed immediately following cable pulling activities. Flooding from these penetrations would exceed the capacity of the AB sump pumps and fill the high pressure injection (HPI), low pressure injection (LPI) and reactor building spray (RBS) pump rooms rendering the pumps inoperable. The inspectors also identified that a field change rerouted the internal drainage system from the yard drain system to the adjacent radwaste trench. Rainwater accumulating in Manhole 7 would flow through the internal drains to the radwaste trench and into the AB through a non-isolable line which drained into the low activity waste tanks. These tanks would eventually overflow flooding the HPI, LPI and RBS pump rooms rendering the pumps inoperable. The design change in the original design package for Manhole 7 and the field change for rerouting the drain did not evaluate the impact they would have on the AB features to mitigate external floods. Consequently, the currently described Updated Final Safety Analysis Report (UFSAR) described PMF event would result in rendering safety-related/risk significant equipment inoperable.

Additionally, the licensee recently completed a site inundation study which projected site water levels to be greater than the maximum flood protection measures for a PMF event as described in UFSAR Section 3.4.1.1 even with a fully functional yard drain system. Changes in site topography and construction of new buildings since initial construction appear to be contributing to the increased water levels. The licensee is currently evaluating the impact of the new site inundation level and has implemented interim actions to provide protection from increased water levels on-site. The NRC will perform additional inspection to ensure the impact to the AB from a PMF event is understood, an accurate timeline on Manhole 7 construction activities is developed, and that the extent of condition is fully defined. This issue is identified as URI 05000269, 270, 287/2012002-01, Evaluation of Probable Maximum Flood Event.

1R04 Equipment Alignment

a. Inspection Scope

Partial Walkdown: The inspectors performed the three partial walkdowns listed below to assess the operability of redundant or diverse trains and components when safety-related equipment was inoperable or out-of-service and to identify any discrepancies that could impact the function of the system potentially increasing overall risk. The inspectors reviewed applicable operating procedures and walked down system components, selected breakers, valves, and support equipment to determine if they were correctly aligned to support system operation. The inspectors reviewed protected equipment sheets, maintenance plans, and system drawings to determine if the licensee had properly identified and resolved equipment alignment problems that could cause

initiating events or impact the capability of mitigating systems or barriers and entered them into the corrective action program (CAP). Documents reviewed are listed in the Attachment.

- Protection of designated equipment and areas during the period transformer CT-5 and the power feed to the standby bus were out of service for cable repair and lockout investigation
- Review of designated equipment protected during the period the 2A motor-driven emergency feedwater (MDEFW) pump was out of service for troubleshooting and repair after a failed surveillance test
- Review of Units 1, 2, and 3 component cooling systems while the standby shutdown facility (SSF) was removed from service for planned maintenance and the station had entered the AB Flood Selected Licensee Commitments (SLC) action statement

Full System Walkdown: The inspectors performed a full system walkdown of the Unit 2 emergency feedwater (EFW) system. The inspectors reviewed applicable operating procedures and flow diagrams, and walked down system components; including pumps, valves, and breakers, to determine the system was in an appropriate alignment to provide decay heat removal during and following refueling. Selected portions of support systems, including the low pressure service water system, the condensate system and the auxiliary steam system, were also reviewed to determine appropriate alignment. Pipe hangers and snubbers were observed to ensure there was no damage to the equipment or interferences that would restrict their movement. The inspectors reviewed protected equipment requirements and verified applicable station requirements were being met. Open work orders and work requests were reviewed to determine their overall impact on the Unit 2 EFW system. The Unit 2 EFW system health report was reviewed to ensure items being tracked by engineering were being addressed as appropriate. Items entered into the CAP were also reviewed to ensure alignment issues were being entered. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

1R05 Fire Protection

a. Inspection Scope

Fire Area Tours: The inspectors walked down accessible portions of the five plant areas listed below to assess the licensee's control of transient combustible material and ignition sources, fire detection and suppression capabilities, fire barriers, and any related compensatory measures. The inspectors observed the fire protection suppression and detection equipment to determine if any conditions or deficiencies existed which could impair the operability of that equipment. The inspectors selected the areas based on a review of the licensee's safe shutdown analysis probabilistic risk assessment and sensitivity studies for fire-related core damage accident sequences. Documents reviewed are listed in the Attachment.

- Unit 1 East and West Penetration Rooms
- Independent Spent Fuel Storage Installation (ISFSI)
- Unit 1 and Unit 2 Main Control Room
- Unit 1 Cable Room
- Unit 3 HPI pump room

Fire Drill Observation: Inspectors observed the performance of a shift fire drill on February 17, 2012, simulating a fire on the Unit 1 Main Transformer which caused a unit trip and required fire brigade response. The inspectors verified the fire brigade's use of protective gear and fire-fighting equipment; that fire fighting pre-plan procedures and appropriate fire fighting techniques were used; and that the directions of the fire brigade leader were thorough, clear, and effective. The inspectors also observed the post-drill critique to assess if it was appropriately critical, included discussions of drill observations, and identified any areas requiring corrective action. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

1R06 Flood Protection Measures

a. Inspection Scope

Internal Flood Protection: The inspectors reviewed selected risk-important plant design features and licensee procedures intended to protect the plant and its safety-related equipment from internal flooding events. The inspectors reviewed the UFSAR, Individual Plant Examination, and flood analysis documentation associated with internal plant areas to determine the effects of flooding. The inspectors reviewed licensee drawings to identify areas and equipment that may be affected by internal flooding from the Fire Protection System. In addition, the inspectors reviewed the licensee's internal flood protection features for the following area. The internal area was selected and walked down based on the flood analysis calculations. Through observation and design review, the inspectors reviewed sealing of doors, holes in elevation penetrations, sump pump operations, and potential flooding sources. The inspectors also reviewed the corrective action program documents to ascertain that the licensee was identifying and resolving issues. Documents reviewed are listed in the Attachment.

- Unit 2 East Penetration Room during core bores through the floor and implementation of actions to ensure compliance with the applicable Selected Licensee Commitments and associated Complex/Critical Activity Plans.

Submerged or Buried Cable Inspection: The inspectors inspected the condition of the following cable trench through direct observation. The inspectors verified the trench contained no standing water and that the cables were intact and in good condition.

- CT-5 cable trench, inspected during cable fault identification and cable repair activities. The section inspected was between the CT-5 transformer and the RP building on the west side of the auxiliary building.

b. Findings

No findings were identified.

1R07 Heat Sink Performance

a. Inspection Scope

Triennial Inspection: The inspectors reviewed calculations, performance test results, and inspection results associated with the LPSW system, ON2-RIA-HX-0035; spent fuel coolers, ON3-LPI- HX-000B; reactor building cooling units, ON2-RBC-HX-000B; and the SSF emergency diesel generator jacket water heat exchanger, ON0-DJW- HX-000A. These heat exchangers were chosen based on their risk significance in the licensee's probabilistic safety analysis, their important safety-related mitigating system support functions, and their relatively low margin as defined by UFSAR Section 7.5.1.2.

The inspectors reviewed, as applicable, the testing, inspection, maintenance, and monitoring of biotic fouling and macrofouling programs to ensure proper heat transfer. This was accomplished by verifying that the test methods used were consistent with industry practices or equivalent such as EPRI Guidelines, the test conditions were consistent with the selected methodology, the test acceptance criteria were consistent with design basis values, and by reviewing results of heat exchanger performance testing. The inspectors also determined if the test results appropriately considered differences between testing conditions and design basis accident conditions and if the frequency of testing based on trends was sufficient to detect degradation prior to loss of heat removal capabilities.

The inspectors reviewed the methods and results of heat exchanger performance inspections for the last three years to determine if the methods used to inspect and clean heat exchangers were consistent with as-found conditions identified and expected degradation trends and industry standards such as EPRI Guidelines; the licensee's inspection and cleaning activities had established acceptance criteria consistent with industry practice; and the as-found results were recorded, evaluated, and appropriately dispositioned such that the as-left condition was acceptable.

The inspectors determined if the condition and operation of the heat exchangers were consistent with design assumptions, defined in the design basis documents, in heat transfer calculations, and as described in the UFSAR. This included determining if the number of plugged tubes was within established limits based on capacity and heat transfer assumptions. The inspectors determined if the licensee had evaluated the potential for water hammer and established adequate controls, and operational limits, to prevent heat exchanger degradation due to excessive flow-induced vibration during operation. In addition, eddy current test reports and visual inspection records were reviewed to determine the structural integrity of the heat exchangers.

For buried or inaccessible piping, the inspectors reviewed the monitoring program, completed visual inspections, model work orders, and the dispositioning of through-wall leaks to verify structural integrity and ensure that any leakage or degradation had been appropriately identified and addressed.

In addition, the inspectors reviewed corrective action reports related to the heat exchangers/coolers and heat sink performance issues to verify that the licensee had an appropriate threshold for identifying issues through the CAP and to evaluate the effectiveness of the corrective actions.

Documents reviewed are listed in the Attachment. These inspection activities constituted four heat sink inspection samples.

b. Findings

No findings were identified.

1R11 Licensed Operator Requalification

a. Inspection Scope

Routine Operator Requalification Review: On March 6, 2012, the inspectors observed operators in the plant's simulator during an annual exam scenario to verify that the operator performance was adequate, evaluators were identifying and documenting crew performance issues and training was being conducted in accordance with station procedures. The scenario included a dropped safety rod resulting in an asymmetric rod runback and subsequent entry into the abnormal procedure for the unit runback. Crew performance related to correctly determining required technical specification entries was observed for adequacy. Following the dropped rod, the scenario included a small-break loss of coolant accident in conjunction with a loss of main condenser vacuum and subsequent main feedwater pump trips. The Emergency Plan classification and declaration by the Operations Shift Manager was also observed. The inspection focused on high-risk operator actions performed during implementation of the abnormal and emergency operating procedures, and the incorporation of lessons learned from previous plant and industry events. The post-scenario critique conducted by the training instructor and the crew was observed. Documents reviewed are listed in the Attachment.

Observation of Operator Performance: The inspectors observed actual main control room crew performance during response to a failure of Unit 1 Main Turbine Stop Valve 4 during surveillance testing. The inspectors reviewed the test procedure used to perform the surveillance testing to verify correct operator procedure usage and place-keeping. Inspectors also verified the appropriate technical specification was entered, complied with, and appropriately exited. Communications of the crew was evaluated for conformance to the licensee's standards for licensed operators, OMP 1-14, Notifications, and OMP 1-24, Operations Communication Standards. The control room crew's interpretation of plant indications was reviewed to determine if the correct plant

diagnosis was made. Shift management's prioritization of tasks in response to the issue was evaluated for appropriate risk management.

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness

a. Inspection Scope

The inspectors reviewed the licensee's effectiveness in performing the following three corrective maintenance activities. These reviews included an assessment of the licensee's practices pertaining to the identification, scoping, and handling of degraded equipment conditions, and common cause failure evaluations. The inspectors performed a detailed review of the problem history and surrounding circumstances, evaluated the extent of condition reviews as required, and reviewed the generic implications of the equipment and/or work practice problem for each of the following activities. The inspectors verified that reliability and unavailability were properly monitored and that 10 CFR 50.65 (a)(1) and (a)(2) classifications were justified in light of the reviewed degraded equipment condition for those SSCs scoped in the Maintenance Rule per 10 CFR 50.65. Documents reviewed are listed in the Attachment.

- Identification and resolution of degraded cell conditions on the SY-1 230kV 125VDC battery
- Investigation of a lockout condition on the CT-5 transformer, the subsequent discovery of a faulted 4.16kV power cable leading from CT-5 to the CT-4 blockhouse/standby bus connection and the repair of the cable required prior to returning the CT-5 transformer to service
- Troubleshooting and repair of the 2A MDEFW pump following the failure of the quarterly surveillance test

b. Findings

Introduction: An NRC-Identified Green finding was identified for the licensee's failure to develop an adequate procedure for performing cable degradation testing on medium voltage cables. Consequently, a degraded condition of one of the conductors from CT-5 to the standby buses was not addressed for approximately 18 months and subsequently failed accruing approximately 30 days of unavailability.

Description: In June 2010, the cables from CT-5, the credited backup power supply path to the standby buses which supplied power to safety-related emergency loads, were tested using procedure IP/0/A/2000/001, Power and Control Cable Inspection and Testing. The test results showed that the "X" and "Z" phases had no degradation; however, the "Y" phase showed elevated readings which indicated some cable insulation degradation was present. NSD 703, Administrative Instructions for Technical Procedures, Section 5.2.6.a, stated in part that "…acceptance criteria shall be identified

so that users can easily determine compliance." Procedure IP/0/A/2000/001 did not have an acceptance criterion for cable degradation and only required forwarding the test results to Engineering for evaluation. In October 2011, the licensee reviewed the test results and generated PIP O-11-11906 describing the indication of insulation degradation found in June 2010 along with a work request to retest the cables in 2012.

The inspectors reviewed the June 2010 testing and identified that the testing had been performed with the cables for each phase as a single bundle. Guidance in IEEE Standard 400-2001, IEEE Guide for Making High-Direct-Voltage Tests on Power Cable Systems in the Field, and EPRI 1020805, Aging Management Program Guidance for Medium-Voltage Cable Systems for Nuclear Plants, both of which were used to develop IP/0/A/2000/001, stated that testing of the individual conductors was recommended to ensure that significant degradation of a single cable was not masked by the unaffected condition of the other cables. These documents also stated that additional testing should be performed to confirm that a single severe degradation site is not the cause if insulation degradation was noted. If localized degradation was determined to not be present, further testing on an accelerated schedule was recommended. If the licensee had followed EPRI 1020805, the "Y" phase test results would have resulted in additional testing.

On December 22, 2011, a lightning strike caused a lockout of the CT-5 transformer. The licensee determined that one of "Y" phase cables from CT-5 had faulted to ground. Subsequent engineering analysis determined that with the cable bundle degraded; i.e., only six of the seven conductors able to carry load, the CT-5 power path would not have been able to provide the required current to the standby buses in the event that CT-5 was needed. The licensee replaced the failed cable which resulted in approximately 30 days of unavailability of the backup power supply path.

Analysis: The licensee's failure to develop an adequate test procedure and associated acceptance criterion was a PD. The PD was more than minor because it was associated with the Mitigating Systems cornerstone attribute of equipment performance and adversely affected the cornerstone objective in that failure to identify the degraded condition resulted in unplanned unavailability of the CT-5 power path. The inspectors used IMC 0609, Significance Determination Process, Attachment 4, Phase 1 - Initial Screening and Characterization of Findings, and determined that the finding was of very low safety significance (Green) because the "Y" phase cable from CT-5 was capable of performing its function from June 2010 until December 22, 2011. The cause of this finding was directly related to the implementation of operating experience aspect of the Operating Experience component of the Problem Identification and Resolution cross-cutting area, in that, the licensee failed to incorporate industry guidance to establish test acceptance criteria for degradation of power cable insulation. [P.2(b)]

Enforcement: This finding does not involve enforcement action because no violation of regulatory requirements was identified. Because the finding was of very low safety significance and was entered in the CAP as PIP O-12-0831, it is identified as FIN 05000269, 270, 287/2012002-02, Failure to Adequately Test Safety-Significant Medium Voltage Cables.

1R13 Maintenance Risk Assessments and Emergent Work Control

a. Inspection Scope

The inspectors evaluated the following attributes for the six activities listed below: (1) the effectiveness of the risk assessments performed before maintenance activities were conducted; (2) the management of risk; (3) that, upon identification of an unforeseen situation, necessary steps were taken to plan and control the resulting emergent work activities; and (4) that maintenance risk assessments and emergent work problems were adequately identified and resolved. Documents reviewed are listed in the Attachment.

- Assessment and management of the increased risk resulting from Unit 3 Pre-Outage Reactor Protection System/Engineered Safeguards (RPS/ES) Activities
- Assessment and management of the increased risk associated with the SY-1 230kV 125VDC battery being declared inoperable
- Assessment and management of the increased risk associated with the lock-out experienced on transformer CT-5 and identification of a faulted power supply cable from the transformer to the standby bus requiring the power path to be removed from service for an extended period of time for repair
- Assessment and management of the increased risk resulting from Unit 3 On-Line Main Control Boards Hole Cutting by Oconee Major Projects
- Risk Assessment and management on February 16, 2012, of the emergent AB Flood potential through Manhole 7 combined with Unit 3 turbine-driven EFW pump testing
- Assessment of the planned and emergent work activity schedule and deferment of selected activities that would have resulted in elevated risk following identification and resolution of AB internal flooding vulnerabilities

b. Findings

No findings were identified.

1R15 Operability Evaluations and Functionality Assessments

a. Inspection Scope

The inspectors reviewed the following six operability evaluations or functionality assessments affecting risk significant systems to assess: (1) the technical adequacy of the evaluations; (2) if continued system operability was warranted; (3) if other existing degraded conditions were considered; (4) if compensatory measures were involved, were in place, would work as intended, and were appropriately controlled; and (5) where continued operability was considered unjustified, the impact on Technical Specifications (TS) limiting condition for operations. Documents reviewed are listed in the Attachment.

- PIP O-12-1203; Unable to Obtain Desired Recirculation Flow While Testing the 2A Motor Driven Emergency Feedwater Pump issue

- PIP O-12-1876; Configuration of Interim Radwaste Trench drain into Auxiliary Building cannot be confirmed. Potential for flooding of AB from PMP needs to be investigated (Functionality assessment)
- PIP O-12-1876; Configuration of Interim Radwaste Trench drain into Auxiliary Building cannot be confirmed. Potential for flooding of AB from PMP needs to be investigated (Operability Evaluation)
- PIP O-12-0505; Valve 3MS-95; Turbine Driven Emergency Feedwater Pump Governor Valve, was observed to move erratically while traveling in the closed direction
- PIP O-12-3099; Missed ISI Exams - U3 Reactor Building Concrete Shell Wall
- PIP O-11-13357; Operability Assessment of the Keowee Hydro Unit AC Sump Pump Following the Failure of the DC Sump Pump

b. Findings

No findings were identified.

1R17 Evaluations of Changes, Tests, or Experiments and Permanent Plant Modifications

a. Inspection Scope

The inspectors reviewed activities related to safety-related cable installation for the Keowee Emergency Start cable re-route and SSF feed from PSW switchgear modification project to assess adequacy of procedures and installation. The inspectors observed cable pull activities, interviewed responsible craft personnel and on-site engineering support, and reviewed calculations, cable data sheets, pulling tension output graphs, specifications, pulling equipment and materials set-up and work procedures to determine adequacy of installation activities. The inspectors performed a walk down of the cable pulling site to verify that the safety-related cables were being installed as specified in procedure TI/O/A/3000/030, PSW Cable Pulling in Duct Banks Using Mechanical Device. The inspectors reviewed the documented cable pulling output data (computer generated graphs) that indicated the applied cable pulling tensions and manufacturer's recommended maximum pulling tensions. The inspectors conducted interviews with plant personnel to discuss the training qualification requirements required to pull these QA condition-1 (QA-1) safety-related control cables. For EC 91880, Keowee Emergency Start Cable Infrastructure, the inspectors verified that cable terminations were appropriately secured, termination cabinets were free of debris and hazards, and terminations were in accordance with work modification package requirements. Documents reviewed are listed in the Attachment.

b. Findings

Introduction: An NRC-Identified Green NCV of 10 CFR 50, Appendix B, Criterion V, Instructions, Procedures and Drawings, was identified for the licensee's failure to include the vendor's maximum pulling tension when calculating the maximum pulling tension for use in the work package. The vendor's maximum pulling tension provided reasonable assurance cable integrity was maintained during cable pulling.

Description: On January 30, 2012, the licensee pulled several QA-1 safety-related, control cables through underground duct banks and individual conduits using procedure TI/O/A/3000/030. A bundle of four individual cables of different sizes and types was pulled over a distance of approximately 1,000 feet through conduit that had several bends. Three of these cables were QA-1 of which one was a shielded control cable. Two of the QA-1 cables had a manufacturer's maximum pulling tension of 1,252 pounds (lbs). The shielded control cable had a manufacturer's maximum pulling tension of 258 lbs. The vendor's maximum pulling tension provided reasonable assurance that cable integrity was maintained during cable pulling. The inspectors reviewed procedure TI/0/A/3000/030, and identified that Section 7.2.1 required that cable pull tension and maximum allowable pull tension values be obtained from engineering. The licensee documented the maximum pull tension of 4,459 lbs in Calculation OSC-9747, Rev. 2. The calculation was based on the methodology in EPRI Volume 4 - Wire and Cable, Chapter 4.5 - Installation, Termination, and Testing, but did not take into account the vendor's recommended maximum pull tension. Consequently, the cable pulling tension value used in procedure TI/O/A/3000/030 was not adequate to assure cable integrity during cable pulling.

The inspectors also noted that the testing method stated in TI/O/A/3000/030 was a continuity check to verify the conductors were not damaged. While this test method was acceptable for power cables, it would not identify damage due to exceeding the maximum allowable pull tension for shielded control cables. Any damage to the control cable could result in misoperation of safety-related equipment in either the PSW or SSF.

Analysis: The licensee's failure to provide adequate cable pulling procedures for QA-1 cables was a PD. The PD was determined to be more than minor because it was associated with the Design Control attribute of the Mitigating Systems Cornerstone and adversely affected the cornerstone objective in that it represented an indeterminate functional condition for proper control functions for safety-related equipment operation in the PSW and the SSF. The finding was screened using IMC 0609, Significance Determination Process, Attachment 4, Phase 1 – Initial Screening and Characterization of Findings, and determined to be of very low safety significance (Green) because it did not result in the loss of any system safety function. The performance deficiency directly involved the cross-cutting aspect of appropriate planning of work activities in the Work Control component of the Human Performance area, in that the licensee failed to implement procedures which established planned contingencies, compensatory actions, and abort criteria. [H.3(a)]

Enforcement: 10 CFR 50, Appendix B, Criterion V, Instructions, Procedures and Drawings, stated in part that "Activities affecting quality shall be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures or drawings." Contrary to the above, from December 30, 2011, to January 30, 2012, the licensee did not provide a procedure appropriate to the circumstances governing the installation of safety-related control cables. The cable pull tension limit given in procedure TI/O/A/3000/030 did not account for cable manufacturer tension limits and the testing method was not capable of identifying cable damage. The licensee revised TI/0/A/3000/030 and re-tested the control cable ensure its functional integrity.

Because this violation was of very low safety significance and because the issue was entered into the licensee's CAP as PIPs O-12-01340 and O-12-01551, this violation is being treated as a NCV, consistent with Section 2.3.2 of the NRC Enforcement Policy and is designated as NCV 05000269, 270, 287/2012002-03, Inadequate Procedure for Installation of Safety-related Control Cables.

1R18 Plant Modifications

a. Inspection Scope

The inspectors reviewed the following three plant modifications to verify the adequacy of the modification package and the 10 CFR 50.59 screenings and to evaluate the modification for adverse affects on system availability, reliability, and functional capability. Documents reviewed are listed in the Attachment.

Permanent Plant Modifications

- The five engineering changes listed in the Attachment in response to the AB Flooding Issue
- EC 91881, PSW Ductbank – Manhole 7 Design and AWA to support the drain reroute modification

Temporary Plant Modifications

- EC 102447, Unit 3 Temp NI Modification to Support RPS/ES Project Installation

b. Findings

No findings were identified.

1R19 Post-Maintenance Testing

a. Inspection Scope

The inspectors reviewed the following five post-maintenance test procedures and/or test activities to assess if: (1) the effect of testing on the plant had been adequately addressed by control room and/or engineering personnel; (2) testing was adequate for the maintenance performed; (3) acceptance criteria were clear and demonstrated operational readiness consistent with design and licensing basis documents; (4) test instrumentation had current calibrations, range, and accuracy consistent with the application; (5) tests were performed as written with applicable prerequisites satisfied; (6) jumpers installed or leads lifted were properly controlled; (7) test equipment was removed following testing; and (8) equipment was returned to the status required to perform its safety function. Documents reviewed are listed in the Attachment.

- Parameter checks on the SY-1 230kV Switchyard 125VDC battery following identification of individual cells exceeding the Category C voltage values which required jumpering two cells and recharging the battery bank with an alternate charger

- 3A HPI pump test following lubrication PM
- 2A MDEFW test following troubleshooting and repair of the pump following a failed surveillance test
- Station Auxiliary Service Water pump test following pump and discharge check valve preventive maintenance
- 3A LPI pump test following breaker and relay preventive maintenance

b. Findings

No findings were identified.

1R20 Refueling and Outage Activities

a. Inspection Scope

The inspectors evaluated licensee pre-outage activities associated with the Unit 3 3EOC26 Refueling Outage to determine if the licensee adhered to operating license, TS and SLC requirements and applicable procedural guidance. The inspectors reviewed the licensee's risk control plan associated with the receipt and movement of new nuclear fuel to assess the adequacy of the risk assessments that had been conducted and that the licensee had implemented appropriate risk management strategies as required by 10 CFR 50.65(a)(4). The inspectors conducted portions of the following activities associated with the pre-refueling outage. Documents reviewed are listed in the Attachment.

- Attended the pre-outage schedule and risk assessment meetings for the refueling outage
- Reviewed the licensee's Integrated Risk Profile for the refueling outage
- Observed fuel handling operations during new fuel receipt, inspection and movement into the spent fuel pool to verify that those operations and activities were being performed in accordance with TS and procedural guidance

b. Findings

No findings were identified.

1R22 Surveillance Testing

a. Inspection Scope

The inspectors either witnessed and/or reviewed test data for the four surveillance tests listed below to assess if the SSCs met TS, UFSAR, and licensee procedure requirements. In addition, the inspectors determined if the testing effectively demonstrated that the SSCs were ready and capable of performing their intended safety functions. Documents reviewed are listed in the Attachment.

Routine Surveillances
- PT/0/A/0600/020, SSF Instrument Surveillance, Rev. 021
- PT/1/A/0400/007, SSF Reactor Coolant Makeup Pump Test, Rev. 60
- PT/2/A/0152/015, Main Steam System Valve Stroke Test, Rev. 16

In-Service Tests
- PT/1/A/0290/004, Turbine Stop Valve Test, Rev. 14

b. Findings

No findings were identified.

1EP6 Drill Evaluation

a. Inspection Scope

The inspectors observed and evaluated the licensee's performance in the Technical Support Center and Operations Support Center during an emergency drill conducted on March 13, 2012. The NRC's assessment focused on the timeliness and location of classification, offsite agency notification, and the licensee's expectations of response. The performance of the emergency response organization was evaluated against applicable licensee procedures and regulatory requirements. The drill involved a vehicle accident causing damage in the protected area resulting in a Notification of Unusual Event, an event causing evacuation of the control room resulting in an Alert declaration, and the loss of power of the auxiliary shutdown panel resulting in a Site Area Emergency declaration. The inspectors attended the post-exercise critique for the drill to evaluate the licensee's self-assessment process for identifying potential deficiencies relating to failures in classification and notification. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator (PI) Verification

a. Inspection Scope

The inspectors sampled licensee data to confirm the accuracy of reported PI data for the following nine PIs. To determine the accuracy of the reported PI elements, the reviewed data was assessed against PI definitions and guidance contained in Nuclear Energy Institute 99-02, Regulatory Assessment Indicator Guideline, Revision 5. Documents reviewed are listed in the Attachment.

Cornerstone: Initiating Events

- Unplanned Scrams (3 units)
- Unplanned Power Changes (3 units)
- Unplanned Scrams with Complications (3 units)

For the period of January 1, 2011, through December 31, 2011, the inspectors reviewed Operating Logs, Train Unavailability Data, Maintenance Records, Maintenance Rule Data, PIPs, Consolidated Derivation Entry Reports, and System Health Reports to verify the accuracy of the PI data reported for each PI.

b. Findings

No findings were identified.

4OA2 Problem Identification and Resolution

.1 Daily Screening of Corrective Action Reports

In accordance with Inspection Procedure (IP) 71152, Identification and Resolution of Problems, and in order to help identify repetitive equipment failures or specific human performance issues for follow-up, the inspectors performed daily screening of items entered into the licensee's CAP. This review was accomplished by reviewing copies of PIPs, attending daily screening meetings, and accessing the licensee's computerized database.

.2 Annual Sample

a. Inspection Scope

The inspectors selected PIP O-11-3285 for detailed review. This PIP involved the licensee's evaluation and disposition of control of external, below grade penetrations into the Auxiliary Building. The inspectors evaluated the PIP against the requirements of the licensee's CAP and 10 CFR 50, Appendix B, and assessed the adequacy of the licensee's corrective actions in response to NRC finding FIN 05000270/2011003-01. The inspectors also evaluated the adequacy of the station's guidance documents for controlling passive design features for external flood protection. Documents reviewed are listed in the Attachment.

b. Findings

Introduction: An NRC-Identified Green finding was identified for the licensee's failure to ensure the Oconee UFSAR-described AB flood protection measures were maintained. Penetrations below the design basis 796.5 ft msl elevation were not included in a surveillance program to verify below-grade penetrations would not allow flooding of the AB.

Description: In response to NRC finding 05000270/2011003-01, Inadequate Design Verification of the NPBS BWST/SSF Trench Foundation, the licensee performed an extent-of-condition evaluation to identify other AB penetrations below the design basis 796.5 ft msl elevation. The inspectors reviewed the extent-of-condition evaluation and noted that some AB penetrations were not identified. As a result, the inspectors questioned if all the penetrations below the 796.5 ft msl elevation had been identified. The licensee then identified additional penetrations below the 796.5 ft msl elevation which were not included in a surveillance program.

Oconee UFSAR Section 3.4.1.1, Flood Protection Measures for Seismic Class 1 Structures, stated in part that, "…the minimum external access elevation for the Auxiliary Building is 796.5 ft msl which provides a 6 inch water sill." SLC 16.9.11a, Auxiliary Building Flood Protection Measures, required credited AB wall penetrations to be intact as shown on the O-310 K series drawings. Only those penetrations below 796.5 ft msl through the TB/AB wall were shown on the O-310 K series drawings as being a flood barrier. The other three outer AB walls were not shown as flood barriers on the drawings resulting in no inspections being performed or controls placed on the below-grade penetrations in these exterior walls to ensure the UFSAR six inch water sill was maintained. The below-grade AB wall penetrations could allow water to enter the AB during a design basis external flood event due to other activities (i.e. excavations) that may not account for the penetrations as a flood barrier. The licensee initiated work requests to inspect and seal the uncontrolled penetrations.

Analysis: The failure to ensure that the UFSAR Section 3.4.1.1 credited flood protection measures were in place was a PD. The PD was more than minor because if left uncorrected, the PD could lead to a more significant safety concern, in that, other onsite activities such as excavation work exterior to the AB walls could provide a pathway for flood waters to enter the AB through the uncontrolled penetrations causing the loss of accident mitigation systems. The inspectors used IMC 0609, Attachment 4, Phase 1 - Initial Screening and Characterization of Findings, and determined that the finding was of very low safety significance (Green) because an actual loss of operability or functionality did not occur. The cause of the finding was directly related to the appropriate corrective actions aspect of the Corrective Action Program component in the area of Problem Identification and Resolution because the licensee failed to correct the O-310 K series to identify that all external below grade AB walls were flood barriers. [P.1(d)]

Enforcement: This finding does not involve enforcement action because no violation of regulatory requirements was identified. This finding has been entered in the CAP as PIP O-12-1876. Because the finding has very low safety significance, it is identified as FIN 05000269, 270, 287/2012002-04, Failure to Ensure UFSAR described Flood Protection Measures In Place.

4OA3 Event Follow-up

.1 Failure of Unit 1 Main Turbine Stop Valve #4 to Close on Demand During Quarterly Technical Specification Surveillance Test

a. Inspection Scope

On February 3, 2012, the #4 Main Steam Stop Valve failed to close during the performance of the quarterly surveillance test placing the unit in a Limiting Condition of Operation Action Statement requiring the valve to be repaired within 8 hours or be in Mode 2 within the following 6 hours. The residents responded to the site when notified of the test failure and observed troubleshooting in the field and retest activities in the control room as well as attended the Unit Threat meeting held to evaluate the issue. The cause was subsequently determined to be a loose terminal connection in the test circuit and following tightening of the connection and electrical continuity checks, the surveillance procedure was re-performed successfully. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

.2 (Closed) Licensee Event Report (LER) 05000269/2010-002-00, 01, Manual Reactor Trip due to 1A1 and 1A2 Reactor Coolant Pump High Vibration: The inspectors reviewed the licensee response to the high reactor coolant pump vibration indications and the post-trip review performed prior to returning the unit to service. This revision to the original LER which was submitted as an abstract, contained the results of the post-trip review and the corrective actions, both immediate and those intended to prevent recurrence. No findings of significance were identified by the inspectors. The licensee documented this condition in their CAP as PIP O-10-6174.

.3 (Closed) LER 05000269/2011-005-00, 01, Reactor Protection System Overpower Flow/Flux/Imbalance Channels Inoperable: Revision 1 of the LER discussed the causal analysis of the event and the corrective actions to prevent recurrence. The inspectors verified the adequacy of the immediate corrective actions, reviewed the licensee's root cause evaluation, and reviewed the implementation of additional corrective actions. The enforcement aspects of this issue are discussed in Section 4OA7. The licensee entered this issue into their CAP as PIP O-11-7081.

4OA5 Other Activities

.1 Temporary Instruction (TI) 2515/182 - Review of the Industry Initiative to Control Degradation of Underground Piping and Tanks, Phase 1

a. Inspection Scope

Leakage from buried and underground pipes has resulted in ground water contamination incidents with associated heightened NRC and public interest. The industry issued a guidance document, Nuclear Energy Institute (NEI) 09-14, "Guideline for the Management of Buried Piping Integrity," (ADAMS Accession No. ML1030901420), to describe the goals and required actions (commitments made by the licensee) resulting from this underground piping and tank initiative. On December 31, 2010, NEI issued Revision 1 to NEI 09-14, "Guidance for the Management of Underground Piping and Tank Integrity," (ADAMS Accession No. ML110700122), with an expanded scope of components which included underground piping that was not in direct contact with the soil and underground tanks. On November 17, 2011, the NRC issued TI- 2515/182 "Review of the Industry Initiative to Control Degradation of Underground Piping and Tanks," to gather information related to the industry's implementation of this initiative. The inspectors reviewed the licensee's programs for buried pipe and underground piping, and tanks, in accordance with TI-2515/182 to determine if the program attributes and completion dates identified in Sections 3.3 A and 3.3 B of NEI 09-14 Revision 1 were contained in the licensee's program and implementing procedures. For the buried pipe and underground piping program attributes, with completion dates that had passed, the inspectors reviewed records to determine if the attribute was in fact complete and if the attribute was accomplished in a manner which reflected good or poor practices in program management.

b. Findings and Observations

No findings were identified. The licensee's buried piping and underground piping and tanks program was inspected in accordance with paragraphs 03.01.a through 03.01.c of TI-2515/182 and was found to meet all applicable aspects of NEI 09-14 Revision 1, as set forth in Table 1 of the TI. Based upon the scope of the review described above, Phase I of TI-2515/182 was completed.

.2 Quarterly Resident Inspector Observations of Security Personnel and Activities

a. Inspection Scope

During the inspection period the inspectors conducted observations of security force personnel and activities to ensure that the activities were consistent with licensee security procedures and regulatory requirements relating to nuclear plant security. These observations took place during both normal and off-normal plant working hours. These quarterly resident inspector observations of security force personnel and activities did not constitute any additional inspection samples. Rather, they were considered an integral part of the inspectors' normal plant status reviews and inspection activities.

b. Findings

No findings were identified.

.3 Operation of an Independent Spent Fuel Storage Installation

a. Inspection Scope

Using the guidance of IP 60855.1, Operation of an Independent Spent Fuel Storage Installation at Operating Plants, the inspectors observed operations involving spent fuel storage. The inspectors reviewed documentation related to Dry Shielded Canister (DSC) 123, and verified that parameters and characteristics for each fuel assembly stored in the DSC were recorded, and that the records were maintained as controlled documents. The inspectors verified that the fuel selected for storage was consistent with the ISFSI Certificate of Compliance requirements. The inspectors also observed selected licensee activities related to the loading, vacuum drying and transfer of the DSC into the Horizontal Storage Module, to ensure procedural requirements were met. The inspectors also reviewed selected screening evaluations performed pursuant to 10 CFR 72.48 since the last inspection. There were no 72.48 evaluations performed during this period as all screenings determined no 72.48 evaluations were required. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

4OA6 Management Meetings (Including Exit Meeting)

Exit Meeting Summary

The resident inspectors presented the inspection results to Mr. T. Preston Gillespie, Jr., and other members of licensee management on April 19, 2012. The licensee acknowledged the findings presented. The inspectors asked the licensee whether any of the material examined during the inspection should be considered proprietary and no proprietary information was identified.

4OA7 Licensee Identified Violations

The following violation of very low safety significance (Green) was identified by the licensee and is a violation of NRC requirements which meets the criteria of the NRC Enforcement Policy for being dispositioned as a NCV.

- 10 CFR 50, Appendix B, Criterion III, Design Control, requires, in part that design control measures shall provide for verifying or checking the adequacy of design, such as by the performance of design reviews or by the performance of a suitable testing program. Contrary to the above, the licensee failed to perform adequate post modification testing to evaluate the adequacy of a design modification to the RPS/ES system and allowed an improper wiring configuration of the Unit 1 Nuclear

Instrumentation (NI) Power Range detector cables. The licensee failed to follow their Modification Test Plan to verify that the Flux/Flow/Imbalance function for the Power Range NIs would work properly. This finding was not greater than very low safety significance (Green) because the RPS could have still fulfilled its safety function with the channels inoperable based on other trip signals available. The licensee entered this issue into their CAP as PIP O-11-7081.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee
K. Alter, Regulatory Compliance Manager
S. Batson, Station Manager
J. M. Beaver, Duke - OMP Engineering Technical Support Supervisor
S. Boggs, Emergency Services Coordinator
J. Bryan, Manager Nuclear Engineering ONS Special Projects
E. Burchfield, Superintendent of Operations
P. Fisk, Assistant Operations Manager
P. Gillespie, Site Vice President
R. Guy, Organization Effectiveness Manager
T. King, Security Manager
T. Patterson, Safety Assurance Manager
J. Pounds, OMP Tornado/HELB QA Oversight
T. Ray, Engineering Manager
F. Rickenbaker, OMP Manager
D. Robinson, Radiation Protection Manager
J. Smith, Regulatory Compliance
P. Street, Emergency Planning Manager

NRC
J. Stang, Project Manager, NRR

LIST OF REPORT ITEMS

Opened and Closed		
05000269, 270, 287/2012002-02	FIN	Failure to Adequately Test Safety-Significant Medium Voltage Cables (Section 1R12)
05000269, 270, 287/2012002-03	NCV	Inadequate Procedure for Installation of Safety-related Control Cables (Section 1R17)
05000269, 270, 287/2012002-04	FIN	Failure to Ensure UFSAR described Flood Protection Measures in Place (Section 4OA2.2)
Opened		
05000269, 270, 287/2012002-01	URI	Evaluation of Probable Maximum Flood Event (Section 1R01)
Closed		
05000269/2010-002-00, 01	LER	Manual Reactor Trip due to 1A1 and 1A2 Reactor Coolant Pump High Vibration (Section 4OA3.2)
05000269/2011-005-00, 01	LER	Reactor Protection System Overpower Flow/Flux/Imbalance Channels Inoperable (Section 4OA3.3)

Discussed		
2515/182	TI	Review of the Industry Initiative to Control Degradation of Underground Piping and Tanks, Phase 1 (Section 4OA5.1)

DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection

External Flood Protection

PIPs O-12-0386, O-12-0361, O-12-1317, O-12-1876, O-12-1988, O-12-2090, O-12-2443
OSS-282.00-00-0001, Design Specification for Mechanical and Electrical Penetration Fire, Flood, and Pressure Seals, Rev. 5
DPC-1435.00-00-0001, Qualification of QA Condition 3 Dow Corning Silicone Foam for QA Condition 1 Applications, Rev. 0
WO 01926151 Task 39, Install Construction Barrier "B" BHUT RM
DWG O-396 C, Interim Radwaste Facility Pipe Trench to IR Building, Rev. 6
DWG O-398-A1-209, PSW Ductbank AB Penetration Details, Rev. D
DWG O-398-A1-207, PSW Ductbank Manhole No. 7 Details, Rev. F
DWG O-398-A1-211, PSW Ductbank TSB Cable Vault Details, Rev. D

Section 1R04: Equipment Alignment

Simple Equipment Alignment

R&R 11-03337, Protected Equipment sheet for the CT-5 power cable repair work
OP/1/A/1104/008, Component Cooling System, Rev. 68
OP/2/A/1104/008, Component Cooling System, Rev. 65
OP/3/A/1104/008, Component Cooling System, Rev. 79
OFD-144A-1.1, Flow Diagram of Component Cooling System (Supply and Return), Rev. 13
OFD-144A-1.2, Flow Diagram of Component Cooling System (Reactor Building Heat Exchangers), Rev. 13
OFD-144A-1.4, Flow Diagram of Component Cooling System (Drain Tank), Rev. 9
OFD-144A-2.1, Flow Diagram of Component Cooling System (Supply and Return), Rev. 10
OFD-144A-2.2, Flow Diagram of Component Cooling System (Reactor Building Heat Exchangers), Rev. 14
OFD-144A-3.1, Flow Diagram of Component Cooling System (Supply and Return), Rev. 12
OFD-144A-3.2, Flow Diagram of Component Cooling System (Reactor Building Heat Exchangers), Rev. 14

Complete System Equipment Alignment

OFD-121D-2.1, Flow Diagram of Emergency Feedwater System, Rev. 37
OFD-121A-2.7, Flow Diagram of Condensate System (Upper Surge tanks 2A & 2B, Upper Surge Tank Dome, & Condensate Storage Tank), Rev. 38
OFD-121A-2.8, Flow Diagram of Condensate System (Condensate Make-up & Emergency FDW Pump Suction), Rev.16
OP/2/A/1106/006, Emergency FDW System, Rev. 109
OSS-0254.00-00-1000; Design Basis Specification for the Emergency Feedwater and the Auxiliary Service Water Systems, Rev. 48
Emergency Feedwater System Health Reports for 2011
TS 3.3.14, 3.7.5, and 3.7.6
EP/2/A/1800/001M, Enclosure 5.9; Extended EFDW Operation, Rev. 39

Section 1R05: Fire Protection

NSD 313, Control of Transient Fire Loads, Rev. 10
NSD 316, Fire Protection Impairment and Surveillance, Rev. 11
SD 3.2.14, Fire Protection Program Compensatory Measure Process, Rev. 0
SLC 16.9.6, Fire Detection Instrumentation
MP/0/A/1705/032, Fire Protection Equipment Inspection, Rev. 33
MP/1/A/1705/018, Fire Protection- Penetration- Fire and Flood Barrier- Inspection and Minor Repair, Rev. 45
Fire Pre-plan, Zone 108, Unit 1 East Penetration Room
Fire Pre-plan, Zone 107, Unit 1 West Penetration Room
Fire Pre-plan, Zone 110, Unit 1 & 2 Control Room, Auxiliary Building Rooms 504 - 517
Fire Pre-plan, Zone 106, Unit 1 Cable Room, Auxiliary Building Room 403
O-310K, Sheet 10, Auxiliary Building- Unit 1 Fire Protection Plan and Fire, Flood, and Pressure Boundaries, Plan at EL 809+3, Rev. 8
PIPs O-12-0462 and O-12-2272
ONS Station Fire Plan Revision 1, ISFSI Facility (Building 8027)
PT/0/B/2000/050, Fire Drill- Performance and Evaluation, Rev. 0
Oconee Nuclear Site First Quarter 2012 Fire Drill, Drill Number: 01-12-01
ONS Station Fire Plan Revision 1, Unit 1 Transformers

Section 1R06: Flood Protection Measures

O-310K, Sheet 11, Auxiliary Building- Unit 2 Fire Protection Plan and Fire, Flood, and Pressure Boundaries, Plan at EL 809+3, Rev. 9
91-01 Complex Activity Plan, EC91849 Unit 2 Pressurizer Heaters and I&C Battery Chargers Backup Power from PSW, Rev. 01
AP/1-2/A/1700/030, Auxiliary Building Flood, Rev. 017
AP/3/A/1700/030, Auxiliary Building Flood, Rev. 016

Section 1R07: Heat Sink Performance

Calculations

OSC 10448, Environmental Qualification (EQ) Evaluation for Oconee Reactor Building Water Level Transmitters and Supporting Equipment, Rev. 000
OSC-5649, LPSW Test Acceptance Criteria (TAC), Rev.13

Completed Procedures

PT/0/A/0160/006, Reactor Building Cooling Units Performance Test, 2/3/10
PT/0/A/0160/006, Reactor Building Cooling Units Performance Test, 11/8/10
PT/0/A/0160/006, Reactor Building Cooling Units Performance Test, 7/6/11

PIPs

O-09-05808, O-10-03765, O-11-10101, O-11-11422, O-11-12419, O-11-15430, O-11-15430

Procedures

CSM 3.10, Primary lab Sampling Frequencies, Specifications and Corrective Actions, Rev. 043
CSM 3.49, Specifications for the Closed Cooling Systems, Rev. 006
PT/0/A/0160/006, Reactor Building Cooling Units Performance Test, Rev. 038
MP/0/A/1800/141, Trenching and Excavation, Rev. 004

Other
Buried Pipe Integrity Program, December 12, 2011
Buried Pipe Inspection Report, 2009
Dam Safety Inspection Report, August 31, 2010, and June 6-7, 2011
1 CC System Health Report, 2011 3rd Quarter
2 CC System Health Report, 2011 3rd Quarter
3 CC System Health Report, 2011 3rd Quarter
1 RBC System Health Report, 2011 3rd Quarter
2 RBC System Health Report, 2011 3rd Quarter
3 RBC System Health Report, 2011 3rd Quarter
0 RCW System Health Report, 2011 3rd Quarter

Section 1R11: Licensed Operator Requalification
ASE-05, Active Simulator Exam, dated 2/21/2012
RP/0/B/1000/001, Emergency Classification, Rev. 29
EP/1/A/1800/001, EOP- IMAs and SAs, Rev. 38
EP/1/A/1800/001 D, EOP-LOSCM, Rev. 38
EP/1/A/1800/001 L, EOP – Rules & Appendix, Rev. 38
AP/1/A/1700/001, Unit Runback, Rev. 13
AP/1/A/1700/027, Loss of Condenser Vacuum, Rev. 5
PIP O-12-2754

Section 1R12: Maintenance Effectiveness
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