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

August 6, 2015

Mr. Thomas D. Gatlin
Vice President - Nuclear Operations
South Carolina Electric & Gas Company
Virgil C. Summer Nuclear Station
P.O. Box 88
Jenkinsville, SC 29065

SUBJECT: VIRGIL C. SUMMER NUCLEAR STATION, UNIT 1 – NRC INTEGRATED INSPECTION REPORT 05000395/2015002

Dear Mr. Gatlin:

On June 30, 2015, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Virgil C. Summer Nuclear Station, Unit 1. On July 23, 2015, the NRC inspectors discussed the results of this inspection with Mr. T. Gatlin and members of your staff. Inspectors documented the results of this inspection in the enclosed inspection report.

NRC inspectors documented one NRC-identifed finding of very low safety significance (Green), in this report. The finding involved a violation of NRC requirements. The NRC is treating this violation as a non-cited violation (NCV) consistent with Section 2.3.2.a of the Enforcement Policy.

If you contest the violation or significance of the NCV, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-001; 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 the Virgil C. Summer Nuclear Station.

If you disagree with a cross-cutting aspect assignment or a finding not associated with a regulatory requirement in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region II, and the NRC Resident Inspector at the Virgil C. Summer Nuclear Station, Unit 1.

In accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) 2.390 of the NRC's "Agency Rules of Practice and Procedure," 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 Agencywide Document Access and Management System (ADAMS). ADAMS is accessible from the NRC Website at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

Steven D. Rose, Chief
Reactor Projects Branch 5
Division of Reactor Projects

Docket No.: 50-395
License No.: NPF-12

Enclosure:
IR 05000395/2015002
w/Attachment: Supplementary Information

cc: Distribution via ListServ

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Letter to Thomas D. Gatlin from Steven D. Rose dated August 6, 2015.

SUBJECT: VIRGIL C. SUMMER NUCLEAR STATION, UNIT 1 - NRC INTEGRATED INSPECTION REPORT 05000395/2015002

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REGION II

Docket No.	50-395
License No.	NPF-12
Report Nos.	05000395/2015002
Licensee:	South Carolina Electric & Gas (SCE&G) Company
Facility:	Virgil C. Summer Nuclear Station, Unit 1
Location:	P.O. Box 88 Jenkinsville, SC 29065
Dates:	April 1, 2015, through June 30, 2015
Inspectors:	J. Reece, Senior Resident Inspector E. Coffman, Resident Inspector
Approved by:	Steven D. Rose, Chief Reactor Projects Branch 5 Division of Reactor Projects

Enclosure

SUMMARY

IR 05000395/2015002; 04/01/2015 - 06/30/2015: Virgil C. Summer Nuclear Station, Unit 1; Operability Determinations and Functionality Assessments.

The report covered a three-month period of inspection by resident inspectors. One Green NRC-identified non-cited violation (NCV) finding was identified. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (SDP), dated April 29, 2015. The cross-cutting aspects were determined using IMC 0310, "Aspects Within the Cross Cutting Areas," dated December 4, 2014. All violations of NRC requirements are dispositioned in accordance with the NRC's Enforcement Policy dated February 4, 2015. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 5.

A. NRC Identified and Self-Revealing Findings

Cornerstone: Mitigating Systems

- Green. The inspectors identified a non-cited violation of Technical Specifications (TS) 6.8.1.f, Fire Protection Program (FPP) procedures, which involved a failure to comply with the requirements of FPP-025, "Fire Containment," Revision (Rev.) 4H, for maintaining the operability of a fire door and steam propagation barrier (SPB), DRAB/319. The licensee entered the problem into their corrective action program as condition report (CR) 15-00662.

  The inspectors identified a performance deficiency (PD) for the failure to maintain the fire door and SPB operable per the requirements of FPP-025. The inspectors reviewed inspector manual chapter (IMC) 0612, Appendix B, Issue Screening, dated September 7, 2012, and determined the PD was more than minor because it impacted the mitigating systems cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences, and the related attribute of protection against external factors such as fire. In regards to the fire confinement function of DRAB/319, the inspectors used IMC 0609, "Significant Determination Process," Appendix F, Fire Protection Significance Determination Process, dated September 20, 2013, and performed a Phase 1 analysis to determine the finding was of very low significance or Green. The fire confinement program element was not of low degradation, the non-suppression probability was 0.1, the fire frequencies related to the affected fire zones AB01.10 and FH01.01 were 3.31E-3 and 8.69E-5 respectfully, and the duration of the component inoperability was approximately 12 hours or 0.00137, which resulted in screening check frequency of 4.65E-7 that was less than the screening criteria of 1E-6. Additionally, the inspectors noted minimal fixed combustibles and ignition sources in the near vicinity of both sides of DRAB/319, and the fire detection instrumentation in both affected fire zones remained operable allowing an operator response in the event of a fire. In regards to the SPB function of DRAB/219, the inspectors used IMC 0609, Appendix A, SDP for Findings at-Power, dated June 19, 2012, and determined the finding was also of very low safety significance, or Green, because it was not a design deficiency or loss of system

function impacting TS. The resulting increase of humidity above equipment qualification test limits of one train of reactor vessel level instrumentation system transmitters would likely not have resulted in a loss of function. The inspectors reviewed IMC 0310, Aspects Within Cross Cutting Areas, dated December 4, 2014, and determined the cause of this finding involved the cross-cutting area of human performance and the aspect of resources, H.1, because the licensee failed to ensure that the fire door closure mechanism was adequate to close the door for the protection of equipment important to safety. (Section 1R15)

REPORT DETAILS

Summary of Plant Status

Unit 1 began the inspection period at full Rated Thermal Power (RTP) and operated at or near full RTP through the end of the second quarter, 2015.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R01 Adverse Weather Protection

.1 Offsite and Alternate Alternating Current (AC) Power

a. Inspection Scope

The inspectors evaluated the readiness of the offsite and alternate AC power systems by reviewing the licensee's procedures that address measures to monitor and maintain the availability and reliability of the offsite and alternate AC power systems. The procedures and documents reviewed included those involved with the communication protocols between the plant and transmission system operator to verify that the appropriate information was being exchanged when issues arose that could impact the offsite power system. In addition, the inspectors monitored switchyard upgrade activities to ensure any degradations or adverse material conditions were identified in the licensee's corrective action program (CAP) and were being appropriately addressed in a manner commensurate with their significance. The documents reviewed during this inspection are listed in the Attachment.

b. Findings

No findings were identified.

.2 Seasonal Weather Susceptibilities

a. Inspection Scope

The inspectors performed one seasonal extreme weather inspection regarding readiness for hot weather conditions and walked down two safety-related areas, emergency diesel generators (EDGs) and service water (SW) pump house, to verify the proper operation of cooling systems for these areas. Specifically, the inspectors verified the licensee had implemented applicable sections of operations administrative procedure (OAP)-109.1, Revision (Rev.) 4, Change A, "Guidelines for Severe Weather." Additionally, the inspectors reviewed licensee plant computer data associated with the aforementioned areas to ensure that temperatures were within their expected operational range to prevent any challenge to equipment operation. The inspectors also verified the licensee took appropriate actions for temperatures exceeding administrative limits. The inspectors reviewed the licensee's CAP database to verify that high temperature

weather-related problems were being identified at the appropriate level, entered into the CAP, and appropriately resolved. Other documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

.3 External Flooding

a. Inspection Scope

The inspectors reviewed the licensee's external flood design mitigation plans to determine consistency with design requirements, updated final safety analysis report (UFSAR) and flood analysis documents. The inspectors performed walkdowns of the station to verify flood protection features remained generally as described in the UFSAR and flood analysis documents. Specifically, the inspectors performed visual examinations of the plant yard areas adjacent to safety-related structures, sealing of penetrations below grade level, and the condition of related sump pumps including preventative maintenance and level switch calibrations. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

1R04 Equipment Alignment

.1 Partial System Walkdowns

a. Inspection Scope

The inspectors conducted three partial equipment alignment walkdowns which are listed below, to evaluate the operability of selected redundant trains or backup systems with the other train or system inoperable or out of service (OOS). Correct alignment and operating conditions were determined from the applicable portions of drawings, system operating procedures (SOP), and technical specifications (TS). The inspections included review of outstanding maintenance work orders (WOs) and related (CRs) to verify that the licensee had properly identified and resolved equipment alignment problems that could lead to the initiation of an event or impact mitigating system availability.

- Partial walkdown of 'A' reactor building (RB) spray (SP) pump during scheduled maintenance on the 'B' RB SP pump
- Partial walkdown of of 'A' and 'B' emergency feedwater (EFW) pumps during scheduled maintenance on the turbine driven EFW pump
- Partial walkdown of 'B' EDG during scheduled maintenance on the 'A' EDG

b. Findings

No findings were identified.

.2 Complete System Walkdown

a. Inspection Scope

The inspectors performed a detailed review and walkdown of the safety-related 125V AC instrumentation and control power system to identify any discrepancies between the current operating system equipment lineup and the designed lineup. In addition, the inspectors reviewed SOPs, applicable sections of the final safety analysis report (FSAR), design basis document, plant drawings, completed surveillance procedures, outstanding WOs, system health reports, and related CRs to verify that the licensee had properly identified and resolved equipment problems that could affect the availability and operability of the system.

b. Findings

No findings were identified.

1R05 Fire Protection

Quarterly Fire Protection Walkdowns

a. Inspection Scope

The inspectors reviewed recent CRs, WOs, and impairments associated with the fire protection system. The inspectors reviewed surveillance activities to determine whether they supported the operability and availability of the fire protection system. The inspectors assessed the material condition of the active and passive fire protection systems and features, and observed the control of transient combustibles and ignition sources. Documents reviewed are listed in the Attachment. The inspectors conducted routine inspections of the following four areas (respective fire zones also noted):

- 1DA switchgear room (fire zone IB-20)
- 1DB switchgear rooms and heating, ventilation and air conditioning (HVAC) rooms (fire zones IB-16, IB-17, IB-22.2)
- Control building (CB) cable spreading rooms (fire zones CB-4 and CB-15)
- Relay room solid state protection system (SSPS) instrumentation and inverter (fire zones CB-6, CB-10, CB-12)

b. Findings

No findings were identified.

1R11 Licensed Operator Requalification Program

.1 Licensed Operator Requalification

a. Inspection Scope

The inspectors observed an operator requalification exam scenario occurring on April 27, 2015, involving multiple failures leading to entry into abnormal operating procedures followed by emergency operating procedures in order to combat the problems. The inspectors observed crew performance in terms of communications; ability to prioritize failures in order to take timely and proper actions; prioritizing, interpreting, and verifying alarms; correct use and implementation of procedures, including the alarm response procedures; timely control board operation and manipulation, including high-risk operator actions; and oversight and direction provided by the shift supervisor, including the ability to identify and implement appropriate TS actions and emergency action levels. The inspectors reviewed the licensee's critique comments to verify that performance deficiencies were captured for appropriate corrective action.

b. Findings

No findings were identified.

.2 Resident Quarterly Observation of Control Room Operations

a. Inspection Scope

During the inspection period, the inspectors conducted two observations of licensed reactor operator activities to ensure consistency with licensee procedures and regulatory requirements. For the two listed activities, the inspectors observed the following elements of operator performance: 1) operator compliance and use of plant procedures including TS; (2) control board component manipulations; 3) use and interpretation of plant instrumentation and alarms; 4) documentation of activities; 5) management and supervision of activities; and 6) control room communications.

- Spent fuel pump 'B' retest
- Unit downpower and main turbine valve movement testing

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness

a. Inspection Scope

The inspectors evaluated two equipment issues described in the CR listed below to verify the licensee's effectiveness with the corresponding preventive or corrective maintenance associated with structure, system, and components (SSCs). The inspectors reviewed Maintenance Rule (MR) implementation to verify that component and equipment failures were identified, entered, and scoped within the MR program. Selected SSCs were reviewed to verify proper categorization and classification in accordance with 10 CFR 50.65. The inspectors examined the licensee's 10 CFR 50.65(a)(1) corrective action plans to determine if the licensee was identifying issues related to the MR at an appropriate threshold and that corrective actions were established and effective. The inspectors' review also evaluated if maintenance preventable functional failures or other MR findings existed that the licensee had not identified. The inspectors reviewed the licensee's controlling procedures consisting of engineering services procedure (ES). ES-514, Rev. 6, "Maintenance Rule Program Implementation," and station administrative procedure (SAP). (SAP)-0157, Rev. 1, "Maintenance Rule Program," to verify consistency with the MR program requirements.

- CR-15-01056, 'A' EDG ventilation supply fan 'A' auxiliary overload contact opened
- CR-15-01083, 'A' EDG ventilation supply fan 'B' thermal overloads tripped

b. Findings

No findings were identified.

1R13 Maintenance Risk Assessment and Emergent Work Control

a. Inspection Scope

The inspectors performed risk assessments, as appropriate, for the six scheduled work activities involving a yellow risk condition for the associated components as 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 emergent work problems were adequately identified and resolved. The inspectors evaluated the licensee's work prioritization and risk characterization to determine, as appropriate, whether necessary steps were properly planned, controlled, and executed for the planned and emergent work activities.

- Work week 15, yellow risk condition for 'A' SW pump outage for chemical treatment modification
- Work week 20, yellow risk condition for scheduled maintenance on the alternate seal injection pump and respective diesel generator
- Work week 21, yellow risk condition for planned maintenance on the turbine driven emergency feedwater pump

- Work week 22, yellow risk condition for planned maintenance on the 'A' EDG
- Work week 25, yellow risk condition for testing of alternate seal injection pump and respective diesel generator
- Work week 26, yellow risk condition for scheduled work on the 'A' SW motor

b. Findings

No findings were identified.

1R15 Operability Determinations and Functionality Assessments

a. Inspection Scope

The inspectors reviewed four operability evaluations listed below, affecting risk significant mitigating systems to assess, as appropriate: 1) the technical adequacy of the evaluations; 2) whether operability was properly justified and the subject component or system remained available, such that no unrecognized increase in risk occurred; 3) whether other existing degraded conditions were considered; 4) that the licensee considered other degraded conditions and their impact on compensatory measures for the condition being evaluated; and 5) the impact on TS limiting conditions for operations and the risk significance in accordance with the significance determination process. The inspectors also verified that the operability evaluations were performed in accordance with SAP-209, Rev. 1B, "Operability Determination Process," and SAP-999, Rev. 13A, "Corrective Action Program." Documents reviewed are listed in the Attachment.

- CR-14-06424, evaluate past operability of 'A' residual heat removal (RHR) pump due to water content of .2 percent in inboard bearing oil sample
- CR-15-00662, DRAB/319, Appendix R fire door and steam propagation barrier found open
- CR-15-01342, control rod drop times longer than typical
- CR-15-01672, elevated temperatures on 'C' steam generator (SG) EFW piping due to leakby on XVC01009C-EF, check valve

b. Findings

Inoperable Fire Door and Steam Propagation Barrier, DRAB/319

Introduction: The inspectors identified a Green, non-cited violation (NCV) of Technical Specifications (TS) 6.8.1.f, Fire Protection Program (FPP) procedures, which involved a failure to comply with the requirements of FPP-025, "Fire Containment," Rev. 4H, for maintaining the operability of fire door and steam propagation barrier (SPB), DRAB/319.

Description: On February 10, 2015, the inspectors identified that fire door and SPB, DRAB/319, between fire areas FH01.01 (fuel building 412 elevation) and AB01.10 (auxiliary building 412 elevation), was approximately 2 inches open and would not self-close. The inspectors closed the door and informed the licensee's operations personnel of the problem to allow compensatory measures and corrective actions.

The licensee initiated CR-15-00662 and completed a past operability evaluation in accordance with engineering services procedure, (ES)-120, “Operability or Functionality Recommendation Development,” Rev. 1A, on April 7, 2015. The inspectors reviewed the ES-120, which concluded DRAB/319 was ‘functional’, and noted that the evaluation for the SPB function of the door used a previous evaluation documented by technical work request (TWR) FM06742, dated February 22, 2005, for CR-04-01162 for a similar condition involving DRAB/319 found open. The inspectors noted that the evaluation assumed an immediate pressure increase to 0.1 psig from a small line break (SLB) in environmental zone AB-20, auxiliary building general area 412 elevation, which would shut the door due to differential pressure between zone AB-20 and the opposite side of DRAB/319, zone FH-01. The inspectors determined that a SLB would not necessarily create an immediate pressure increase but based on the break size could result in a gradual pressure increase. Additionally, a review of the licensee’s Equipment Qualification Database revealed that the pressure would never reach 0.1 psig, but indicated only that pressure was “<0.1 psig” from a duration of 5 seconds to 1200 seconds and at 1800 seconds the pressure was “0 psig.” The inspectors also noted the ES-120 evaluation did not address the fire protection function of DRAB/319.

The licensee completed Rev. 1 to the ES-120 on June 4, 2015, which performed a more rigorous evaluation reviewing the affected components’ equipment qualification (EQ) requirements assuming the components in zone FH-10 were exposed to the same environment as zone AB-20 following a SLB. Additionally, the fire protection function was discussed with a conclusion that the function was not met. However, the inspectors noted that the ES-120 revision had the same conclusion of ‘functional’ for DRAB/319. The inspectors performed a review and noted that ‘A’ train reactor vessel level indication system (RVLIS) transmitters, ILT-01310, ILT01311 and ILT01312 were tested to 130 degrees Fahrenheit (degF) and relative humidity at 95 percent. However, the conditions in zone AB-20 following the SLB were 123 degF and 100 percent relative humidity which only slightly exceeded the equipment qualification test limits of the RVLIS transmitters. The inspectors noted the ‘B’ train RVLIS transmitters are located within the diesel generator building and, thereby, unaffected by a SLB within AB-10. The other components within FH-10 were EQ tested to more severe conditions and were acceptable.

The inspectors noted that the ES-120 stated, “Per FPP-025, Enclosure 6.4, the closure mechanism does not contribute to a doors ability to perform as a pressure barrier.” The inspectors reviewed FPP-025 and noted that Enclosure 6.4 for SPB doors states, “Other door components such as locking mechanisms, door closers, security strikes, emergency exit hardware, etc. do not contribute to a doors ability to perform as a pressure barrier. Damage to these components should not be considered a degraded pressure barrier unless their failure mode prevents or impedes the ability of the door to close and latch properly.” The inspectors determined that a closure mechanism could adversely impact a SPB door if (1) as stated a damaged closure mechanism impacts the ability of the door to close and latch, and (2) a line break that results in a slow pressure increase such that differential pressure is inadequate to shut the door. The licensee initiated procedure feedback number 15001 to review and modify the existing door closure requirements for SPB doors.

The inspectors also noted that FPP-025, Enclosure 6.4, states for the fire barrier function of DRAB/319 that the door closes and latches under its own power. The inspectors agreed with the licensee's conclusion that DRAB/319 did not meet operability requirements as a fire barrier. Based on the aforementioned information, the inspectors concluded that the licensee had failed to meet the requirements specified in FPP-025 for fire door operability and SPB functionality.

Analysis: The inspectors identified a performance deficiency (PD) for the failure to maintain the fire door and SPB operable per the requirements of FPP-025. The inspectors reviewed IMC 0612, Appendix B, Issue Screening, dated September 7, 2012, and determined the PD was more than minor because it impacted the mitigating systems cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences, and the related attribute of protection against external factors such as fire. In regards to the fire confinement function of DRAB/319, the inspectors used IMC 0609, "Significant Determination Process," Appendix F, Fire Protection Significance Determination Process, dated September 20, 2013, and performed a Phase 1 analysis to determine the finding was of very low significance or Green. The fire confinement program element was not of low degradation, the non-suppression probability was 0.1, the fire frequencies related to the affected fire zones AB01.10 and FH01.01 were 3.31E-3 and 8.69E-5 respectfully, and the duration of the component inoperability was approximately 12 hours or 0.00137, which resulted in screening check frequency of 4.65E-7 that was less than the screening criteria of 1E-6. Additionally, the inspectors noted minimal fixed combustibles and ignition sources in the near vicinity of both sides of DRAB/319, and the fire detection instrumentation in both affected fire zones remained operable allowing an operator response in the event of a fire. In regards to the SPB function of DRAB/219, the inspectors used IMC 0609, Appendix A, "Significance Determination Process for Findings at-Power," dated June 19, 2012, and determined the finding was also of very low safety significance or Green, because it was not a design deficiency or loss of system function impacting TS. The resulting increase of humidity above equipment qualification test limits of one train of RVLIS transmitters would likely not have resulted in a loss of function. The inspectors reviewed IMC 0310, Aspects Within Cross Cutting Areas, dated December 14, 2014, and determined the cause of this finding involved the cross-cutting area of human performance and the aspect of resources, H.1, because the licensee failed to ensure that the fire door closure mechanism was adequate to close the door for the protection of equipment important to safety.

Enforcement: TS 6.8.1.f requires in part that written procedures shall be implemented covering the activities for the Fire Protection Program. Contrary to this, on February 10, 2015, the licensee failed to implement the requirements of procedure, FPP-025, to ensure that fire door and SPB, DRAB/319, remained operable/functional. Because the finding is of very low safety significance and because it has been entered into the licensee's CAP as CR-15-00662, this violation is being treated as a Green NCV, consistent with Section 2.3.2 of the NRC Enforcement Policy: NCV 05000395/2015002-01, Failure to Maintain Fire Door/Steam Propagation Barrier in Accordance With the Fire Protection Program Procedure.

1R18 Plant Modifications

a. Inspection Scope

The inspectors reviewed two procedure-controlled temporary modifications as listed below, to evaluate the change for adverse effects on system availability, reliability, and functional capability. Documents reviewed included engineering calculations, WOs, site drawings, applicable sections of the UFSAR, supporting 10 CFR 50.59 evaluations, TS, and design basis information. The inspectors evaluated the change documents and associated 10 CFR 50.59 reviews against the system design basis documentation and UFSAR to verify that the changes did not adversely affect the safety function of safety systems. The inspectors also reviewed any related CRs to confirm that problems were identified at an appropriate threshold, were entered into the CAP, and appropriate corrective actions had been initiated.

- Interim actions to keep 'A', 'B' and 'C' SW screenwash valves open by tagging their associated breakers open to cope with debris removal from the SW screens during a loss of offsite power event (CR-15-01012)
- Accept as-is disposition for 'A' EDG speed sensor signal generator voltage being lower than expected when used with an "old-style" speed switch (CR-15-01136)

b. Findings

No findings were identified.

1R19 Post Maintenance Testing

a. Inspection Scope

For the seven maintenance activities listed below, the inspectors reviewed the associated post-maintenance testing (PMT) procedures and either witnessed the testing and/or reviewed test records to assess whether: 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) test acceptance criteria were clear and adequately 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. The inspectors verified that these activities were performed in accordance with general test procedure, (GTP)-214, "Post Maintenance Testing Guideline," Rev. 5D.

- WO-1413689, replace and inspect cylinder liner O-rings on cylinders 2 and 4 on 'A' EDG
- WO-1501443, retest of IPV02020, main steam header 'C' power operated relief valve
- WO-1502966, calibration of 'C' steam generator flow signal comparator following card replacement
- WO-1502968, replacement of relay room 'B' fan motor
- WO-1417677, 'C' chiller low oil pressure cut-out calibration following oil pressure switch replacement
- WO-1503019, investigate and repair elevated lube oil temperature on the 'A' EDG
- WO-1416625, replace 'A' SW motor lower bearing cooling flow indicator

b. Findings

No findings were identified.

1R22 Surveillance Testing

a. Inspection Scope

The inspectors observed and/or reviewed four surveillance test procedures (STPs) listed below to verify that TS or risk significant surveillance requirements were followed and that test acceptance criteria were properly specified to ensure that the equipment could perform its intended safety function. The inspectors verified that proper test conditions were established as specified in the procedures, that no equipment preconditioning activities occurred, and that acceptance criteria were met.

In-Service Tests

- STP-127.001, "Pressurizer Block Valve Operability Test," Rev. 8B
- STP-205-003, "Charging/Safety Injection Pump and Valve Test," Rev. 8B
- STP-225.001A, "Diesel Generator Support Systems Pump and Valve Test," Rev. 9A
- STP-220.007, "Backup Air Supply Check Valve Test for Emergency Feedwater Valves," Rev. 7

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator (PI) Verification

.1 Cornerstone: Reactor Safety Barrier Integrity

a. Inspection Scope

The inspectors verified the accuracy of the licensee's PI submittals listed below for the period April, 2014, through March, 2015. The inspectors used the performance indicator

definitions and guidance contained in Nuclear Energy Institute (NEI) 99-02, Rev. 6, "Regulatory Assessment Performance Indicator Guideline," and licensee procedure SAP-1360, Rev. 2, "NRC and INPO/WANO Performance Indicators," to check the reporting of each data element. The inspectors sampled licensee event reports, operator logs, plant status reports, CRs, and performance indicator data sheets to verify that the licensee had properly reported the PI data. Also, the inspectors discussed the PI data with the licensee personnel associated with the performance indicator data collection and evaluation.

- Reactor coolant system (RCS) Specific Activity
- RCS Identified Leak Rate

b. Findings

No findings were identified.

4OA2 Problem Identification and Resolution

.1 Review of Items Entered into the Corrective Action Program

a. Inspection Scope

As required by 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 a daily screening of items entered into the licensee's CAP. This review was accomplished by either attending daily screening meetings that briefly discussed major CRs, or accessing the licensee's computerized corrective action database and reviewing each CR that was initiated.

b. Findings

No findings were identified.

.2 Semi-Annual Review to Identify Trends

a. Inspection Scope

The inspectors performed a review of the licensee's CAP and associated documents to identify trends that could indicate the existence of a more significant safety issue. The review was focused on repetitive equipment issues, but also considered trends in human performance errors, the results of daily inspector corrective action item screening discussed in Section 4OA2.1 above, licensee trending efforts, and licensee human performance results. The review focused on the first half of 2015. Documents reviewed included licensee monthly and quarterly corrective action trend reports, engineering system health reports, maintenance rule documents, department self-assessment activities, and quality assurance audit reports.

b. Findings

No findings were identified. However, inspectors identified nine CR's relating to problems associated with Appendix R emergency lighting found during testing performed in the first six months of 2015. The inspectors verified that all emergency lights were repaired. However, the inspectors noted that for several of the CR's listed below, no maintenance rule evaluation was present. The inspectors plan to further review this issue as a maintenance effectiveness sample under Inspection Report 05000395/2015003. The inspectors discussed the issue with the licensee who initiated CR-15-03099 to document the adverse trend. A listing of the CR's can be found below.

Emergency light battery failures:

- CR-15-00370
- CR-15-00901
- CR-15-00902
- CR-15-00903
- CR-15-00904
- CR-15-02422

Emergency light standby switch improperly set (causing a test failure):

- CR-15-00905

Emergency light requiring head lamp replacement:

- CR-15-01358

4OA3 Event Followup

Notification of Unusual Event

On June 7, 2015, at 5:25 a.m. Eastern Standard Time (EST), the licensee declared a Notification of Unusual Event in accordance with their emergency procedures for a security condition in which there were no hostile actions. The emergency action level was terminated at 6:22 a.m. EST.

The inspectors responded to the event, reviewed licensee actions, interviewed licensee personnel and performed a follow-up review of applicable documents.

4OA6 Meetings, Including Exit

On July 23, 2015, the resident inspectors presented the integrated inspection report results to Mr. T. Gatlin and other members of the licensee staff. The licensee acknowledged the results of these inspections. The inspectors confirmed that inspection activities discussed in this report did not contain proprietary material.

ATTACHMENT: SUPPLEMENTARY INFORMATION

SUPPLEMENTARY INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

A. Barbee, Director, Nuclear Training
C. Calvert, Manager, Design Engineering
M. Coleman, Manager, Health Physics and Safety Services
N. Constance, Manager, Nuclear Training
G. Douglass, Manager, Nuclear Protection Services
J. Garza, Supervisor, Nuclear Licensing
T. Gatlin, Vice President, Nuclear Operations
M. Harmon, Manager, Chemistry Services
L. Harris, Manager, Quality Systems
R. Haselden, General Manager, Organizational / Development Effectiveness
R. Justice, Manager, Nuclear Operations
G. Lippard, General Manager, Nuclear Plant Operations
M. Moore, Supervisor, Nuclear Licensing
D. Shue, Manager, Maintenance Services
W. Stuart, General Manager, Engineering Services
W. Taylor, Nuclear Licensing Engineer
B. Thompson, Manager, Nuclear Licensing
J. Wasieczko, Manager, Organization Development and Performance
D. Weir, Manager, Plant Support Engineering
R. Williamson, Manager, Emergency Services
S. Zarandi, General Manager, Nuclear Support Services

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened and Closed

05000395/2015002-01	NCV	Failure to Maintain Fire Door/Steam Propagation Barrier in Accordance With the Fire Protection Program Procedure (Section 1R15)

LIST OF DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection

Offsite and Alternate Alternating Current (AC) Power

AOP-301.1, Response to Electrical Grid Issues, Rev 0D
EOP-6.0, Loss of All ESF AC Power, Rev 30
OAP-100.4, Communication, Rev 2J
OAP-102.1, Conduct of Operations Scheduling Unit, Rev 7G
PTP-160.025, Loading and Unloading of the Alternate AC Power Supply, Rev 0
SAP-703, Control of Switchyard/Transformer Yard Activites, Rev 1H
SOP-301, Main Generator System, Rev 15E
SOP-304, 115KV/7.2KV Operations, Rev 13G
STP-125.021, Periodic Testing of the Alternate AC Power Supply, Rev 4
EE-01, Design Interface with Transmission Planning, Power Delivery, and Relay Applications, Rev 0F
Nuclear Electric Transmission Interface Agreement, Rev 7
Summer Nuclear Station Transmission Agreement, November 1978
VCS-1 Impacting Facilities Diagram and List, 06-12-14
V.C. Summer Nuclear Power Station Large Power Transformer and Switchyard Reliability Interface Agreement, Rev 3
V.C. Summer Unit 1 – Power Delivery Northern Operations Interface Agreement, Rev 4

Seasonal Weather Susceptibilities

CR-15-02686, Service water coils have not been cleaned
CR-15-02793, Service water switchgear reached TS limit of 102deg F
CR-15-02872, Daytime temperatures at or near 100deg F for the past 12 days
CR-15-02875, ‘A’ service water switchgear exceeded TS limit twice
CR-15-02820, Dirty lower intake screens on 'A' SW motor

External Flooding

EIR-82002, Evalution of ISFSI construction activity impacts greater than 90 days
EIR-82110, Study of EMH-34 for modification relative to surrounding grade
EIR-82123, Sandbag installation around EMH-8

DC02060-001, Rev 7A, North Storm Drain Modifications due to ISFSI construction
CMP-700.015.00, Catch Basin Inspection, Rev 0
OAP-109.1, Guidelines For Severe Weather, Rev 4A
CR-15-00303, NRC Information Notice, 15-1 - Degraded Ability to Mitigate Flooding Events
CR-15-02093, NL-15-097, Warning Time for Local Intense Precipitation Events
CR-15-02690, Control building walkdown
CR-15-02241, Auxiliary building walkdown
CR-15-02457, Service water building walkdown
CR-15-00432, Fuel building walkdown
Design basis document for ND system (Drains, Sumps and Leak Detection), Rev 2.

LIST OF ACRONYMS

AC	Alternating Current
ADAMS	Agency Document Access and Management System
CAP	Corrective Action Program
CB	Control Building
CFR	Code of Federal Regulations
CR	Condition Report
EDG	Emergency Diesel Generator
EFW	Emergency Feedwater
EQ	Equipment Qualification
ES	Engineering Services Procedure
EST	Eastern Standard Time
FPP	Fire Protection Program
FSAR	Final Safety Analysis Report
GTP	General Test Procedure
HVAC	Heating, Ventilation and Air Conditioning
IB	Intermediate Building
IMC	Inspection Manual Chapter
INPO	Institute of Nuclear Power Operations
IP	Inspection Procedure
IR	Inspection Report
MR	Maintenance Rule
NCV	Non-Cited Violation
NEI	Nuclear Energy Institute
NPF	Nuclear Power Facility
NRC	Nuclear Regulatory Commission
NUREG	Nuclear Regulatory
OAP	Operations Administrative Procedure
OOS	Out of Service
PARS	Publicly Available Records System
PD	Performance Deficiency
PI	Performance Indicator
PMT	Post-Maintenance Testing
PSIG	Pounds Per Square Inch Gauge
RB	Reactor Building
RCS	Reactor Coolant System
REV.	Revision
RHR	Residual Heat Removal
RTP	Rated Thermal Power
RVLIS	Reactor Vessel Level Indication System
SAP	Station Administrative Procedure
SCE&G	South Carolina Electric and Gas
SDP	Significance Determination Process
SG	Steam Generator
SLB	Small Line Break

SOP	System Operating Procedure
SP	Spray
SPB	Steam Propagation Barrier
SSC	Structure, System, and Components
SSPS	Solid State Protection System
STP	Surveillance Test Procedure
SW	Service Water
TS	Technical Specification
TWR	Technical Work Request
U1	Unit 1
UFSAR	Updated Final Safety Analysis Report
WANO	World Association of Nuclear Operators
WO	Work Order