



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

September 14, 2015

Mr. Brian K. Taber  
Vice President - Vogtle  
Southern Nuclear Operating Company, Inc.  
Vogtle Electric Generating Plant  
7821 River Road  
Waynesboro, GA 30830

**SUBJECT: VOGTLE ELECTRIC GENERATING PLANT, UNITS 1 AND 2 - NRC TRIENNIAL  
FIRE PROTECTION INSPECTION REPORT 05000424/2015007 AND  
05000425/2015007**

Dear Mr. Taber:

On July 31, 2015, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Vogtle Electric Generating Plant, Units 1 and 2. The enclosed inspection report documents the inspection results, which were discussed with Mr. D. Myers and other members of your staff on July 31, 2015.

NRC Inspectors documented two findings of very low safety significance (Green) in this report. These findings involved violations of NRC requirements. 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 or their significance, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region II; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at the Vogtle Electric Generating Plant. 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 disagreement, to the Regional Administrator, Region II; and the NRC Resident Inspector at the Vogtle Electric Generating Plant.

In accordance with Title 10 of the *Code of Federal Regulations* (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's Public Document Room or from the Publicly Available Records (PARS) component of the NRC's Agencywide Documents 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/*

Scott M. Shaeffer, Chief  
Engineering Branch 2  
Division of Reactor Safety

Docket Nos.: 05000424, 05000425

License Nos.: NPF-68 and NPF-81

Enclosure: Inspection Report 05000424/2015007 and 05000425/2015007  
w/Attachment: Supplementary Information

cc: Distribution via ListServ

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**U. S. NUCLEAR REGULATORY COMMISSION**

**REGION II**

Docket Nos.: 50-424, 50-425

License Nos.: NPF-68, NPF-81

Report Nos.: 05000424/2015007 and 05000425/2015007

Licensee: Southern Nuclear Operating Company, Inc. (SNC)

Facility: Vogtle Electric Generating Plant, Units 1 and 2

Location: Waynesboro, GA 30830

Dates: July 13 - 17, 2015 (Week 1)  
July 27 - 31, 2015 (Week 2)

Inspectors: J. Dymek, Reactor Inspector  
W. Monk, Reactor Inspector  
J. Montgomery, Senior Reactor Inspector  
M. Thomas, Senior Reactor Inspector (Lead Inspector)

Accompanying Personnel: K. Hamburger, Fire Protection Engineer (NSPDP), NRC Office of Nuclear Regulatory Research, Fire Research Branch

Approved by: Scott M. Shaeffer, Chief  
Engineering Branch 2  
Division of Reactor Safety

Enclosure

## SUMMARY

IR 05000424/2015007, 05000425/2015007; 07/13/2015 - 07/31/2015; Vogtle Electric Generating Plant, Units 1 and 2; Fire Protection (Triennial)

The report covers an announced two-week triennial fire protection inspection by a team of four regional inspectors. Two Green non-cited violations were identified. The significance of inspection findings are indicated by their color (i.e., Green, White, Yellow, Red) and determined using Inspection Manual Chapter (IMC) 0609, Significance Determination Process, dated April 29, 2015. Cross-cutting aspects are determined using IMC 0310, "Aspects Within 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, dated February 2014.

### Cornerstone: Mitigating Systems

Green. An NRC-identified Green non-cited violation of Vogtle Units 1 and 2 Operating License Conditions 2.G, was identified for the licensee's failure to ensure that fire doors V22108L1A67, V12111L1238, and V12111L1A41 in 3-hour rated fire barriers were fully closed and latched, as required by the approved fire protection program (FPP) and National Fire Protection Association (NFPA) Code 80-1983, Fire Doors and Windows (Vogtle NFPA Code of Record). The licensee took corrective actions and declared fire door V22108L1A67 inoperable and established a roving fire watch. The inoperable door was entered into the licensee's corrective action program as condition report (CR) 10067247 and was repaired the next day. For doors V12111L1238 and V12111L1A41, the licensee immediately removed materials that were interfering with the latching of the doors and entered these into their corrective action program as CR 10096004 and CR10096008 respectively. Because these two conditions were corrected as soon as they were brought to the licensee's attention by the inspectors, no fire watch was required to be established.

The licensee's failure to ensure the three fire doors were fully closed and latched as required by the approved FPP and NFPA Code 80-1983 was determined to be a performance deficiency. This performance deficiency was more than minor because it affected the reactor safety mitigating systems cornerstone attribute of protection against external events (i.e., fire) and adversely affected the fire protection defense-in-depth element involving fire confinement and control of fires that do occur to protect systems important to safety. The finding was screened in accordance with NRC Inspection Manual Chapter (IMC) 0609, "Significance Determination Process," Attachment 4, "Initial Characterization of Findings," which determined that an IMC 0609, Appendix F, "Fire Protection Significance Determination Process," review was required as the finding involved the ability to confine a fire. The finding category of "Fire Confinement" was assigned, based upon that element of the FPP being impacted. Using IMC 0609, Appendix F, Attachment 1, "Fire Protection Significance Determination Process Worksheet," the inspectors determined that the finding was of very low safety significance (Green) at Task 1.4.3, Question C, based upon observation that a fully functioning, automatically actuated, fire suppression system was installed on both sides of fire doors V12111L1238 and V12111L1A41 and on one side of fire door V22108L1A67. The inspectors determined that the finding had a cross-cutting aspect of "Procedure Adherence" in the Human Performance area because individuals did not follow processes and procedures for ensuring that fire doors were properly closed and latched after passing through the doors [H.8]. [Section 1R05.02.b(1)]

Green. An NRC-identified Green non-cited violation of Vogtle Unit 1 Operating License Condition 2.G was identified for the licensee's failure to identify and repair degraded fire penetration seal 1-11-759A, as required by the approved fire protection program (FPP). The licensee took corrective actions to declare the penetration seal inoperable, entered the issue in their corrective action program as condition report 10102010 and established a roving fire watch.

The licensee's failure to identify and repair the degraded fire penetration seal 1-11-759A was a performance deficiency. This performance deficiency was more than minor because it affected the reactor safety mitigating systems cornerstone attribute of protection against external events (i.e., fire) and adversely affected the fire protection defense-in-depth element involving fire confinement and control of fires that do occur to protect systems important to safety. The finding was screened in accordance with NRC Inspection Manual Chapter (IMC) 0609, "Significance Determination Process," Attachment 4, "Initial Characterization of Findings," which determined that an IMC 0609, Appendix F, "Fire Protection Significance Determination Process," review was required as the finding involved the ability to confine a fire. The finding category of "Fire Confinement" was assigned, based upon that element of the FPP being impacted. Using the criteria contained in IMC 0609 Appendix F, Attachment 2, Table A2.2, the inspectors concluded that the seal degradation level was low because the silicone foam seal depth and a fully intact damming board on one side of the barrier would have been sufficient to provide at least two hours of fire resistance. In addition, it was noted that the fire zones on each side of the degraded fire penetration seal were protected with an automatic fire suppression system. Using IMC 0609, Appendix F, Attachment 1, "Fire Protection Significance Determination Process Worksheet," the inspectors determined that the finding was of very low safety significance (Green) at Task 1.4.3, Question C. The inspectors determined that the finding had a cross-cutting aspect of "Avoid Complacency" in the Human Performance area because individuals inspecting the seals failed to recognize and plan for the possibility of the penetration seal being damaged. [H.12] [Section 1R05.02.b(2)]

## REPORT DETAILS

### 1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

#### 1R05 Fire Protection

This report documents the results of a triennial fire protection inspection (TFPI) at the Vogtle Electric Generating Plant (VEGP), Units 1 and 2. The inspection was conducted in accordance with NRC Inspection Procedure (IP) 71111.05T, "Fire Protection (Triennial)," issued January 31, 2013. The objective of the inspection was to review a minimum sample of 3 risk-significant fire areas (FAs) to verify implementation of the VEGP fire protection program (FPP). An additional objective was to review site specific implementation of a minimum of one mitigating strategy from Section B.5.b of NRC Order EA-02-026, "Order for Interim Safeguards and Security Compensatory Measures" (commonly referred to as B.5.b), as well as the storage, maintenance, and testing of B.5.b mitigating equipment. The FAs chosen for review were selected based on available risk information as analyzed by a Region II senior reactor analyst, data obtained during plant walk downs regarding potential ignition sources, location and characteristics of combustibles, and location of equipment needed to achieve and maintain safe shutdown (SSD) of the reactor. Other considerations for selecting the FAs were the relative complexity of the post-fire SSD procedures, information contained in FPP documents, and results of prior NRC TFPIs. In selecting the B.5.b mitigating strategy sample, the inspectors reviewed licensee submittal letters, safety evaluation reports, licensee commitments, B.5.b implementing procedures, and previous NRC inspection reports. Section 71111.05-05 of the IP specifies a minimum sample size of three FAs and one B.5.b mitigating strategy for addressing large fires and explosions. This inspection fulfilled the requirements of the IP by selecting four FAs and one B.5.b mitigating strategy. The FAs chosen were:

- Unit 1 Fire Area 1-CB-LA-N/Fire Zone 94: Unit 1 Train A Auxiliary Relay Room and HVAC Chase Room
- Unit 1 Fire Area 1-CB-LA-G/Fire Zone 103: Unit 1 Train A Shutdown Panel Room
- Unit 1 Fire Area 1-CB-L1-A/Fire Zone 105-1: Unit 1 Main Control Room (MCR)
- Unit 1 Fire Area 1-CB-L2-B/Fire Zone 120: Unit 1 Train B Cable Spreading Room

The inspectors evaluated the licensee's FPP against applicable requirements, including Renewed Operating License Condition 2.G; Title 10 of the *Code of Federal Regulations*, Part 50.48 (10 CFR 50.48); commitments to NRC Branch Technical Position (BTP) Chemical Engineering Branch (CMEB) 9.5-1; VEGP Updated Final Safety Analysis Report (UFSAR); related NRC safety evaluation reports (SERs) including all applicable supplements; and plant Technical Specifications. The inspectors evaluated all areas of this inspection, as documented below, against these requirements. The B.5.b mitigating strategy selected for review was spent fuel pool external makeup. Specific licensing and design basis documents reviewed by the inspectors are listed in the Attachment.

.01 Protection of Safe Shutdown Capabilities

a. Inspection Scope

The inspectors reviewed the licensee's Fire Event Safe Shutdown Evaluation (FESSE) referenced in the UFSAR Chapter 9; the licensee's fire hazards analysis (FHA); plant procedures; piping and instrumentation drawings (P&IDs); electrical drawings; and other supporting documents. The inspectors selected a sample of SSD systems to evaluate the licensee's ability to safely shut down the plant in the event of a fire. The inspectors performed in-plant inspections to verify that the plant configuration was consistent with that described in the FESSE. The inspectors reviewed the licensee's shutdown methodology to verify that it properly identified the components and systems necessary to achieve and maintain SSD conditions for postulated fires resulting in shutdown from the MCR. The inspectors reviewed conduit and cable tray drawings, as well as field walk-downs of the cable routing to confirm that at least one train of redundant cables routed in the fire zones (FZs) was adequately protected from fire damage. The inspectors focused their inspection activities on systems specified in the FESSE for reactivity control, reactor coolant makeup, and decay heat removal; as well as process monitoring instrumentation and necessary support systems, such as the electrical power distribution system, service water and heating ventilation and air conditioning systems.

The inspectors reviewed and performed a walkthrough of procedure steps used for post-fire SSD to ensure the technical and human factors adequacy of the procedures. The inspectors verified the licensee personnel credited for performance of procedures were available in the event a fire occurred. The inspectors also verified that the credited licensee personnel had procedures available, and were trained on implementation. The inspectors reviewed and walked down applicable sections of procedure 17103-C, "Annunciator Response Procedures for Fire Alarm Computer". The inspectors reviewed operator actions to ensure these actions could be implemented in accordance with plant procedures in a manner necessary to support the SSD method for the applicable FA/FZ.

b. Findings

No findings were identified.

.02 Passive Fire Protection

a. Inspection Scope

For the selected FAs, the inspectors verified the adequacy of fire walls, ceilings, floors, mechanical and electrical penetration seals, fire doors, and fire dampers. The inspectors walked down accessible portions of the selected FAs to observe material condition of the passive barriers and to identify degradation or non-conformances. The inspectors compared the installed configurations to the approved construction details and supporting fire endurance test data to assure that the respective fire barriers met the requirements of Branch Technical Position CMEB 9.5.1, Fire Protection for Nuclear Power Plants. In addition, the inspectors reviewed licensing bases documentation to verify that passive fire protection features met license commitments. A sample of completed surveillance and maintenance procedures for selected fire doors, fire dampers, and penetration seals were reviewed to ensure that these passive fire barriers



were being properly inspected and maintained. Specific barriers reviewed are listed in the Attachment.

b. Findings

(1) Failure to Ensure Plant Fire Doors Were Fully Closed and Latched

Introduction: An NRC-identified Green non-cited violation (NCV) of Vogtle Units 1 and 2 Operating License Conditions 2.G, was identified for the licensee's failure to ensure that fire doors V22108L1A67, V12111L1238, and V12111L1A41 in 3-hour rated fire barriers were fully closed and latched, as required by the approved fire protection program (FPP) and National Fire Protection Association (NFPA) Code 80-1983, Fire Doors and Windows (Vogtle NFPA Code of Record).

Description: During a walkdown of Vogtle Unit 2 performed by a NRC Senior Resident Inspector on May 8, 2015, it was observed that fire door V22108L1A67, would not close and securely latch. The door was located at Unit 2, Level "A" between the Auxiliary Building Central Area and Auxiliary Building Wing Area. The door would not latch because the concealed vertical rod within the door had loosened and would not align and engage the door frame properly. The licensee did not initiate corrective actions until the following day when fire door V22108L1A67 was declared inoperable, a fire protection limiting condition for operation (LCO) was created, and an hourly roving fire watch was established. The door was repaired before the end of that day's shift, the fire protection LCO was closed, and the roving fire watch was terminated. During a walkdown on July 14, 2015, NRC inspectors observed that fire door V12111L1238 would not close and securely latch. This door was located at Unit 1, Level "2", between Cable Spreading Room B and the Control Building Corridor. The door would not latch due to masking tape being placed across both the latch bolt and the strike plate as part of preparation for painting the door. After the issue was identified by the NRC inspectors, licensee personnel promptly removed the masking tape covering the door hardware, which allowed the door to close and latch securely. The licensee entered the issue in their corrective action program as CR 10096004. A fire watch was not required because the door was returned to an operable condition during the inspection walkdown. During the same walkdown on July 14, 2015, the inspectors observed that a second fire door, V12111L1A41, also would not close and securely latch. This door is located at Unit 1, Level "A", between Shutdown Room Train B and Control Building Train B Corridor. The door would not latch due to a worn rubber seal becoming lodged in the door strike plate. The seal had been installed to prevent a fire suppression agent (Halon) from leaking past the fire door gap between the active and passive leafs of door V1211L1A41 during a Halon system discharge. After the issue was identified by the inspectors, licensee personnel promptly cut away the rubber seal material, which allowed door V1211L1A41 to close and latch securely. The licensee entered the issue in their corrective action program as CR 10096008. A fire watch was not required because the door was returned to an operable condition during the inspection walkdown. A completely new seal was installed before the end of the inspection.

Analysis: The licensee's failure to ensure three fire doors were closed and securely latched as required by the approved FPP and NFPA Code 80-1983 was a performance deficiency. This performance deficiency was more than minor because it affected the reactor safety mitigating systems cornerstone attribute of protection against external events (i.e., fire) and adversely affected the fire protection defense-in-depth element

involving fire confinement and control of fires that do occur to protect systems important to safety. The finding was screened in accordance with NRC Inspection Manual Chapter (IMC) 0609, "Significance Determination Process," Attachment 4, "Initial Characterization of Findings," which determined that an IMC 0609, Appendix F, "Fire Protection Significance Determination Process," review was required as the finding involved the ability to confine a fire. The finding category of "Fire Confinement" was assigned, based upon that element of the FPP being impacted. Using IMC 0609, Appendix F, Attachment 1, "Fire Protection Significance Determination Process Worksheet," the inspectors determined that the finding was of very low safety significance (Green) at Task 1.4.3, Question C, based upon inspector observations that a fully functioning, automatically actuated, fire suppression system was installed on one side of fire door V22108L1A67 and on both sides of fire doors V12111L1238 and V12111L1A41. The inspectors determined that the finding had a cross-cutting aspect of "Procedure Adherence" in the Human Performance area because individuals did not follow processes and procedures for ensuring that fire doors were properly closed and latched after passing through the doors [H.8].

Enforcement: Vogtle Unit 1 and Unit 2 Operating License Condition(s) 2.G require that the licensee shall implement and maintain in effect all provisions of the approved fire protection program as described in the UFSAR for the facility, as approved in the SER (NUREG-1137) through Supplement 5 for Unit 1 and Supplement 9 for Unit 2. The approved FPP is documented in UFSAR Section 9.5.1 and associated Appendices 9A and 9B. UFSAR Section 9.5.1.2.1.2 states in part that, "Door assemblies through fire barriers have fire ratings commensurate with those required of the fire barrier" and "These doors are either self-closing or automatic closing types or are normally secured closed". NFPA 80-1983 Fire Doors and Windows (VEGP FPP Code of Record) Section 2-8.7.1 states that "The door shall swing easily and freely and shall be equipped with a closing device to cause the door to close and latch each time it is opened. UFSAR Table 9.5.1-9, "Exception to NFPA Codes" states that compliance to NFPA 80-1983, Fire Doors and Windows, Section 2-8.7.1, is met because "Personnel are trained on the proper use of doors to ensure they are fully closed and latched following use. Furthermore, Vogtle Unit C Standard for Use of Doors, Rev. 10 Section 3.1 states, "It is the responsibility of all individuals (SNC personnel and contractors) to properly use doors, not abuse them. Proper use involves ensuring that the door is properly positioned after passing through it. For most doors this involves verifying the door is closed and latched".

Contrary to the above, the licensee did not implement all provisions of the approved FPP as described in the VEGP UFSAR. On May 8, 2015, NRC inspectors identified that the licensee failed to ensure that fire door V22108L1A67, would close and securely latch and similarly on July 14, 2015, fire doors V12111L1238 and V12111L1A41 would not close and securely latch either, thereby causing the associated fire barriers to be less than the required fire resistance rating. Because the finding was of very low safety significance and it was entered in the licensee's corrective action program as CR 10067247, CR 10096004 and CR 10096008, this violation is being treated as an NCV, consistent with Section 2.3.2 of the NRC Enforcement Policy. NCV 05000424/2015007-01 and 05000425/2015007-01, Failure to Fully Close and Latch Plant Fire Doors.

(2) Failure to Identify and Repair a Degraded Fire Penetration Seal

Introduction: An NRC-identified Green NCV of Vogtle Unit 1 Operating License Condition 2.G was identified for the licensee's failure to identify and repair degraded fire penetration seal 1-11-759A, as required by the approved fire protection program (FPP).

Description: During a walkdown of the Unit 1 Cable Tunnel, the inspectors identified Control Building penetration seal 1-11-759A was missing a portion of 1-inch thick damming board on the Cable Tunnel side of the barrier. The penetration seal was part of a three-hour fire barrier which separated cable raceway between the Cable Tunnel and the Control Building Corridor on Level A of the Control Building. As viewed from the Cable Tunnel, the 18-inches high by 18-inches wide penetration was missing a portion of 1-inch thick damming board in proximity to several cables running through the penetration that had been abandon in place. Per penetration seal detail M0101 (Drawing AX1AG11-00011), a 1-inch thick damming board was required to be intact on both sides of the barrier. In addition, the interior of the seal was to contain a minimum of 7-inches of silicone foam. The licensee inspected the integrity of penetration seals for fire barriers on an 18-month interval, and the inspectors noted that the penetration was last inspected on January 27, 2015, during the performance of Procedure 29114-C, "Fire Boundaries and Fire Rated Penetration Seal 18-Month Visual Inspection," and work order SNC447848, "18-month Fire Area Boundaries Visual Inspection." The licensee's inspection did not identify any discrepancies for the inspection. Since the licensee did not identify any work activities that may have damaged the seal since completion of the most recent inspection, it was reasonable to assume that the deficiency was missed during the surveillance performed on January 27, 2015. After the issue was identified by the NRC inspectors, licensee personnel evaluated the condition, declared the fire penetration seal inoperable, entered the issue in their corrective action program as CR 10102010 and established a roving fire watch in accordance with Fire Protection Plan, Table 9.5.1-10, Section 7.3.

Analysis: The licensee's failure to identify and repair damaged fire penetration seal 1-11-759A was a performance deficiency. This performance deficiency was more than minor because it affected the reactor safety mitigating systems cornerstone attribute of protection against external events (i.e., fire) and adversely affected the fire protection defense-in-depth element involving fire confinement and control of fires that do occur to protect systems important to safety. The finding was screened in accordance with NRC Inspection Manual Chapter (IMC) 0609, "Significance Determination Process," Attachment 4, "Initial Characterization of Findings," which determined that an IMC 0609, Appendix F, "Fire Protection Significance Determination Process," review was required as the finding involved the ability to confine a fire. The finding category of "Fire Confinement" was assigned, based upon that element of the FPP being impacted. Using the criteria contained in IMC 0609 Appendix F, Attachment 2, Table A2.2, the inspectors concluded that the seal degradation level was low because the silicone foam seal depth and a fully intact damming board on one side of the barrier would have been sufficient to provide at least two hours of fire resistance. In addition, it was noted that the fire zones on each side of the degraded fire penetration seal were protected with an automatic fire suppression system. Using IMC 0609, Appendix F, Attachment 1, "Fire Protection Significance Determination Process Worksheet," the inspectors determined that the finding was of very low safety significance (Green) at Task 1.4.3, Question C. The inspectors determined that the finding had a cross-cutting aspect of "Avoid

Complacency” in the Human Performance area because individuals inspecting the seals failed to recognize and plan for the possibility of the penetration seal being damaged [H.12].

Enforcement: Vogtle Unit 1 Operating License Condition 2.G requires that the licensee implement and maintain in effect all provisions of the approved FPP as described in the UFSAR for the facility, as approved in the NRC SER (NUREG-1137) through Supplement 9. The approved FPP is documented in UFSAR Section 9.5.1 and associated Appendices 9A and 9B. UFSAR Appendix 9B, Section C.5.a, “Building Design”, states, in part, that penetration seals shall be used to seal openings through fire barriers that separate fire areas. The seal shall provide a fire resistance rating at least equal to the barrier itself.

Contrary to the above, on July 28, 2015, the inspectors identified that the licensee failed to implement the approved fire protection program in that they did not seal an opening through a fire barrier for cabling that had been abandon in place. Specifically, the licensee failed to identify and correct a degraded cable penetration seal in the 3-hour rated wall between the Cable Tunnel and the Control Building Corridor that was missing a portion of 1-inch thick damming board. This caused the penetration seal to be less than the required 3-hour fire rating. Because the finding was of very low safety significance and it was entered into the licensee’s corrective action program as CR 10102010, this violation is being treated as an NCV, consistent with Section 2.3.2 of the NRC Enforcement Policy. NCV 05000424/2015007-02, Failure to Identify and Repair a Degraded Fire Penetration Seal.

### .03 Active Fire Protection

#### a. Inspection Scope

For the selected FA’s, the inspectors performed in-plant observations to verify the material condition and operational lineup of the fire protection water supply; automatic water and Halon fire suppression systems, manual fire hose and standpipe systems and installed fire extinguishers. The inspectors reviewed engineering drawings and specifications to verify that the as-built configuration of fire suppression equipment was adequately maintained. Internal standpipe and hose stations, and heat and smoke detection systems were reviewed against specifications, drawings and engineering calculations to verify that the fire detection and suppression methods were appropriate for the types of fire hazards that existed in the FAs. The inspectors also verified that the suppression equipment met applicable NFPA standards. The inspectors reviewed completed surveillance testing and maintenance procedures to verify that the equipment was adequately maintained. The inspectors reviewed fire fighting pre-plans to verify that the strategies were adequate. The inspectors observed the fire brigade staging and dress out areas to assess the condition of fire fighting and smoke control equipment. In addition, the inspectors verified the capabilities of the fire brigade by reviewing staffing, qualification, and training records. The “Letters of Agreement” with off-site emergency responders were reviewed to verify the availability of additional resources to combat fires.

#### b. Findings

No findings were identified.

.04 Protection from Damage from Fire Suppression Activities

a. Inspection Scope

The inspectors evaluated whether manual water-based fire fighting activities or heat and smoke migration from fires within the selected FAs could adversely affect equipment credited for SSD, inhibit access to alternate shutdown equipment, or adversely affect local operator actions required for SSD. Fire Strategies (pre-fire plans); fire brigade training procedures; heating, ventilating and air conditioning (HVAC) drawings; and abnormal procedures for fires were also reviewed to verify that inter-area migration of water or the ventilation of heat and smoke were addressed and would not adversely affect SSD equipment or the performance of operator manual actions. Calculations and analysis addressing the inadvertent operation or postulated failure of water based suppression systems, including water hammer from rapid system depressurization were also reviewed to determine impact on SSD equipment.

b. Findings

No findings were identified.

.05 Alternative Shutdown Capability

a. Inspection Scope

Methodology

The licensee credited an alternative shutdown capability for a postulated fire in FZ 105-1. The inspectors reviewed UFSAR Section 9.5.1, the Control Room Safe Shutdown Evaluation, and corresponding abnormal procedures to ensure that appropriate controls provided reasonable assurance that alternative shutdown equipment remained operable, available, and accessible when required. In cases where local operator manual actions (OMA) were credited in lieu of cable protection of SSD components, the inspectors performed a walk-through of the procedures to determine if the operators could reasonably be expected to perform the alternative safe shutdown procedure actions and that equipment labeling was consistent with the alternate safe shutdown procedures. The inspectors reviewed applicable P&IDs to gain an understanding of credited equipment's flow path and function. The inspectors reviewed applicable licensee calculations to ensure the alternative shutdown methodology properly identified systems and components to achieve and maintain safe-shutdown for the FAs selected for review.

The inspectors reviewed procedures, work orders, and completed surveillances to verify that the alternative shutdown transfer capability was periodically tested. Additionally, the inspectors reviewed electrical schematics and one line diagrams to ensure that the transfer of safe shutdown control functions to the alternate shutdown facility included sufficient instrumentation to safely shutdown the reactor. This review also included verification that shutdown from outside the main control room could be performed both with and without the availability of offsite power.

### Operational Implementation

The inspectors reviewed procedure 18038-1, "Operation from Remote Shutdown Panels", Version 33.7, to verify the adequacy of this procedure to mitigate a fire in FZ 105-1. The inspectors reviewed selected training materials for licensed and non-licensed operators to verify that training reinforced the shutdown methodology that is utilized in the FPP and abnormal procedures for fires.

The inspectors performed a walk-through of selected procedure steps with operations personnel to assess the implementation and human factors adequacy of the procedures and shutdown strategy to evaluate the ambient conditions, difficulty, and operator familiarization associated with selected OMAs. The inspectors reviewed the systems and components credited for use during this shutdown method to verify that they would remain free from fire damage. The inspectors reviewed selected operator actions to verify that the operators could reasonably be expected to perform the specific actions within the time required to maintain plant parameters within specified limits.

#### b. Findings

No findings were identified.

### .06 Circuit Analysis

#### a. Inspection Scope

The inspectors reviewed the licensee's FPP referenced in the UFSAR Chapter 9, which included the FHA, FESSE, plant procedures, and system P&IDs to verify that the licensee had identified required and associated circuits that may impact post-fire SSD for the selected FA/FZs. This review included assessing the potential for flow diversion paths, loss of function, or other scenarios that would adversely impact the plant's ability to achieve and maintain SSD conditions. The inspectors reviewed the licensee's post-fire SSD procedures and compared them with the post-fire SSD analysis and component separation analysis for the selected FAs/FZs.

The inspectors then reviewed a representative sample of the credited SSD components in the selected FA/FZs to verify that the components specified in the post-fire SSD procedures were available for a postulated fire and met their SSD function. The inspectors also reviewed cable routing information and electrical control wiring diagrams for these selected SSD components to determine if these cables had either been adequately protected from the potentially adverse effects of fire damage or analyzed to show that fire induced faults would not prevent post-fire SSD. Specifically, this review analyzed whether identified combinations of individual circuit conductors which, if shorted together due to fire damage, could cause spurious operation or non-operation. The inspectors conducted walkdowns in the selected FAs/FZs to determine if the credited components relied upon for SSD would still be available given a fire in the FA/FZs. For instances where cables traversed through the selected FAs/FZs, the inspectors performed more detailed circuit analysis to verify fire induced damage would not adversely impact the credited SSD methodology.

Additionally, a review was conducted of routing information for credited active fire protection and SSD components to determine if a fire in the selected FA/FZs would impact the credited defense-in-depth systems. The inspectors reviewed the licensee's evaluations for spurious circuit failure scenarios (single and/or multiple) specified in the circuit analysis to determine if the sample list of components challenged the assumptions made in the SSA. The inspectors reviewed the licensee's electrical coordination study calculations to determine if power supplies were susceptible to fire damage, which would potentially affect the credited components for the FAs/FZs selected for review. The specific components and references reviewed are listed in the Attachment.

b. Findings

No findings were identified.

.07 Communications

a. Inspection Scope

The inspectors reviewed the communication capabilities (telephone/page, PABX and sound powered phones (SPP) systems) required to support plant personnel in the performance of OMAs to achieve and maintain SSD, as credited in UFSAR Section 9.5.2. The inspectors verified the capability of the SPP system, and verified that cables for communication equipment would not be affected by a fire in the selected FAs/FZs. The inspectors reviewed preventative maintenance and surveillance test records to verify that the communication equipment was being properly maintained. Additionally, the inspectors assessed the operators' ability to communicate based upon observation of a licensee-conducted communications test with the SSD SPPs and fire brigade radios. The inspectors also verified that the design and location of communications equipment, such as repeaters and transmitters, would not cause a loss of communications during a fire.

b. Findings

No findings were identified.

.08 Emergency Lighting

a. Inspection Scope

The inspectors reviewed maintenance and design aspects of the fixed 8-hour battery pack emergency lighting units (ELUs) required by the licensee's FPP. The inspectors performed plant walkdowns of the post-fire SSD procedures for the selected FAs/FZs to observe the placement and coverage area of the ELUs throughout the selected FAs/FZs. The inspectors also evaluated the adequacy of the ELUs to illuminate access and egress pathways, and any equipment requiring local operation and/or instrumentation monitoring for post-fire SSD. Licensee personnel performed in-plant functional tests of the ELUs providing light for OMAs listed in the post-fire SSD procedures for the selected FAs/FZs to verify ELU operation. The inspectors reviewed preventive maintenance procedures and completed surveillance tests to verify that adequate surveillance testing was in place. The inspectors reviewed vendor manuals to

ensure that the ELUs were being maintained consistent with manufacturer's recommendations.

b. Findings

No findings were identified.

.09 Cold Shutdown Repairs

a. Inspection Scope

The inspectors reviewed the FHA, UFSAR and plant procedures for responding to fires and implementing SSD activities in order to determine if any repairs were required to achieve cold shutdown. One system and two rooms were identified as having potential repairs required to achieve cold shutdown.

The licensee had designated the Train "B" Emergency Diesel Generator Fuel Oil Transfer Pumps for potentially requiring repair, in the form of a control circuit emergency jumper, in order to reach cold shutdown based on the SSD methodology implemented. The inspectors verified that the jumper was readily available and that the procedure to install it was adequate. The licensee had also designated the CB-313 Chiller Room and CB-226 Auxiliary Relay Room for potentially requiring repair, in the form of setting up temporary ventilation, in order to reach cold shutdown based on the SSD methodology implemented. The inspectors verified that the exhaust fans and temporary blowers were readily available and that the procedure to set them up was adequate.

The inspectors also evaluated whether cold shutdown could be achieved within the required time period using the licensee's procedures and repair methods to walk-down the cold shutdown repair actions. Specific documents reviewed by the inspectors are listed in the Attachment.

b. Findings

No findings were identified.

.10 Compensatory Measures

a. Inspection Scope

Compensatory Measures for Degraded Fire Protection Components

The inspectors reviewed the administrative controls for out-of-service, degraded and/or inoperable fire protection features (e.g. detection and suppression systems, and passive fire barriers) to verify that short-term compensatory measures were adequate for the degraded function or feature until appropriate corrective actions could be taken. The inspectors reviewed impairment and compensatory measures forms for fire watch tours to confirm they were being performed within the allowable time frames.



### Operator Manual Actions as Compensatory Measures for Safe Shutdown

The inspectors reviewed applicable sections of Calculation X4C2301S026, "Fire Event Safe Shutdown Evaluation (FESSE) Control Building," Calculation X4C2301S311, "VEGP Multiple Spurious Operations Analysis," and Procedure 17103-C, "Annunciator Response Procedures for Fire Alarm Computer," to identify OMAs credited for SSD. In cases where local OMAs were credited in lieu of cable protection or separation of SSD equipment, the inspectors performed walk downs of those applicable OMAs to verify that the OMAs were feasible, utilizing the guidance of NRC IP 71111.05T, paragraph 02.02.j.2.

b. Findings

No findings were identified.

.11 Review and Documentation of Fire Protection Program Changes

a. Inspection Scope

The inspectors reviewed modifications associated with the FPP to verify that changes were in accordance with the fire protection license condition and had no adverse effect on the ability to achieve SSD. Modifications reviewed are listed in the Attachment.

b. Findings

No findings were identified.

.12 Control of Transient Combustibles and Ignition Sources

a. Inspection Scope

The inspectors conducted walkdowns of numerous plant areas that were important to reactor safety, including the selected FAs, to verify the licensee's implementation of fire protection requirements as described in procedures 92015-C, Use, Control and Storage of Flammable/Combustible Materials, NMP-ES-035-007, Fleet Hot Work Instructions and NMP-ES-035-012, Fire Protection Work Reviews. The inspectors verified that the licensee had properly evaluated transient fire hazards, controlled hot-work activities, and maintained general housekeeping consistent with administrative control procedures and the fire hazards analysis. For the selected FAs, the inspectors evaluated the potential for fires and explosions, and potential fire severity. Fire watch and craft personnel were interviewed for familiarity with job requirements. No hot work was observed as part of the inspection activities within the selected fire areas.

b. Findings

No findings were identified.

.13 B.5.b Inspection Activities

a. Inspection Scope

The inspectors reviewed, on a sample basis, the licensee's mitigation measures for spent fuel pool external makeup utilizing the portable pump for large fires and explosions to verify that the measures were feasible, personnel were trained to implement the strategies, and equipment was properly staged and maintained. The inspectors reviewed the licensee's established program, applicable SERs and submittals which supported the elements outlined by the license condition. The inspectors reviewed inventory, surveillance testing, and maintenance records of required equipment to verify that the licensee continued to meet the requirements of their B.5.b license condition and 10 CFR 50.54 (hh)(2). Through discussions with plant staff, documentation review, and plant walkdowns, the inspectors verified the engineering basis to establish reasonable assurance that the makeup capacity could be provided using the specified equipment and water sources. The inspectors reviewed the licensee's capability to provide a reliable and available water source and the ability to provide the minimum fuel supply. The inspectors performed a walk-down of the storage and staging areas for the B.5.b equipment to verify that equipment identified for use in the current procedures was available and maintained. The inspectors reviewed training records of the licensee's staff to verify that operations and security personnel training/familiarity with the strategy objectives and implementing guidelines were accomplished according to the established training procedures.

b. Findings

No findings were identified.

**4. OTHER ACTIVITIES**

40A2 Problem Identification and Resolution

a. Inspection Scope

The inspectors reviewed a sample of recent licensee independent audits, CRs, self-assessments, and system/program health reports for thoroughness, completeness and conformance to FPP requirements described in the VEGP UFSAR and FPP. The inspectors also reviewed Corrective Action Program (CAP) documents, including completed corrective actions documented in selected CRs, to verify that fire protection deficiencies were adequately identified, evaluated, and that appropriate corrective actions were implemented. The CRs were reviewed with regard to the attributes of timeliness and apparent cause determination to ensure that proposed corrective actions addressed the apparent cause, reportability and operability determinations. In addition, operating experience program documents were also reviewed to verify that industry-identified fire protection problems, potentially or actually affecting VEGP were appropriately entered into and resolved by the CAP process and the inspectors evaluated the effectiveness of the corrective actions for the identified issues. Specific documents reviewed by the inspectors are listed in the Attachment. Specifically, the ELU System 10 CFR 50.65 a(1) Maintenance Rule Status Plan was reviewed and found to be adequate based on the licensee has complied with 10 CFR 50.65 a(1) by taking adequate corrective actions. Specifically, the licensee has placed the system in a(1)

status, set ELU System maintenance performance goals, examined their MR performance criteria definition, and has adequate maintenance corrective actions in place. CRs were entered into the CAP for ELU functional failures and discharge test failures. The inspectors determined the Status Plan to be adequate in order to return the system to a(2) status in a timely manner.

b. Findings

No findings were identified.

4OA6 Meetings, Including Exit

On July 31, 2015, the lead inspector presented the preliminary inspection results and findings to Mr. D. Myers, VEGP Plant Manager, and other members of the licensee's staff. The licensee acknowledged the findings. Proprietary information is not included in this inspection report.

ATTACHMENT: SUPPLEMENTARY INFORMATION

## SUPPLEMENTARY INFORMATION

### KEY POINTS OF CONTACT

#### Licensee Personnel

T. Baker, Security Manager  
B. Coker, Engineering Programs Manager  
J. Covington, Fire Protection Engineer  
R. Daniel, Fire Marshall  
B. Frey, Maintenance Director  
G. Gunn, Regulatory Affairs Manager  
S. Harris, Work Control Manager  
J. Hemena, Engineering Programs Supervisor  
J. Klecha, Operations Director  
J. Lattner, Principal Fire Protection Engineer  
R. Linebarger, Fire Protection (Units 3 and 4)  
K. Morrow, Licensing Engineer  
D. Myers, Plant Manager  
A. Parton, Nuclear Oversight Manager  
J. Singleton, Fire Protection Engineer  
J. Summy, Engineering Director  
D. Sutton, Site Projects Manager  
M. Sykes, Safe Shutdown Engineer  
J. Thomas, Work Management Director  
K. Walden, Licensing Engineer

#### NRC Personnel

A. Alen, Resident Inspector  
M. Cain, Senior Resident Inspector  
S. Shaeffer, Chief, Engineering Branch 2, Division of Reactor Safety, Region II

### LIST OF REPORT ITEMS

#### Opened and Closed

05000424, 425/2015007-01	NCV	Failure to Fully Close and Latch Plant Fire Doors (Section 1R05.02.b(1))
05000424/2015007-02	NCV	Failure to Identify and Repair a Degraded Fire Penetration Seal (Section 1R05.02.b(2))

## LIST OF DOCUMENTS REVIEWED

### LIST OF FIRE BARRIER FEATURES INSPECTED (Refer Report Section 1R05.02 and 1R05.03)

#### Fire Door Identification

V22108L1A67  
V12111L1238  
V12111L1A41

#### Description

Room 75 to 96  
Room 225 to 230  
Room 43 to 51

#### Fire Barrier Penetration Seal Identification

1-11-759A  
1-11-125  
1-11-122  
1-11-124

#### Description

1-CB-LA-F to 1-CB-LA-N  
1-CB-LA-K to 1-CB-LA-P  
1-CB-LA-K to 1-CB-LA-P  
1-CB-LA-K to 1-CB-LA-P

#### Wall, Ceiling, Floor Identifications

Fire Zone 94, Unit 1-Train "A" Auxiliary Relay Room  
Fire Zone 103, Unit 1-Train "A" Shutdown Panel Room  
Fire Zone 105-1 Unit 1 Main Control Room  
Fire Zone 120, Unit 1-Train "B" Cable Spreading Room

#### Description

All Walls, Floor & Ceiling  
All Walls, Floor & Ceiling  
All Walls, No Floor or Ceiling  
All Walls, Floor and Ceiling

**LIST OF COMPONENTS REVIEWED**  
**(Refer to Report Section 1R05.01 / 1R05.06 – Circuit Analyses)**

<b><u>Component Identification</u></b>	<b><u>Description</u></b>
1PV-456A	PRZ PORV
1LV-112E	RWST Outlet to CCP MOV
1HV-8149A	Letdown Orifice Isolation MOV
1HV-8149B	Letdown Orifice Isolation MOV
1HV-8149C	Letdown Orifice Isolation MOV
11217P4001	“A” Train Auxiliary CCW Pump
11217P4002	“B” Train Auxiliary CCW Pump
11805S3BBD	480V Motor Control Center 1BBD
1HV-1978	ACCW Thermal Barrier HX Isolation MOV
1HV-1979	ACCW Thermal Barrier HX Isolation MOV
1HV-19051	Thermal Barrier HX Discharge MOV
1HV-19053	Thermal Barrier HX Discharge MOV
1HV-19055	Thermal Barrier HX Discharge MOV
1HV-19057	Thermal Barrier HX Discharge MOV
1HV-8103A	Seal Injection for RCP #1 MOV
1HV-8103B	Seal Injection for RCP #2 MOV
1HV-8103C	Seal Injection for RCP #3 MOV
1HV-8103D	Seal Injection for RCP #4 MOV
1HV-5132	Train “B” AFW Discharge MOV
1HV-5134	Train “B” AFW Discharge MOV
1HV-1974	ACCW Return Flow Thermal Barrier MOV
1HV-1975	ACCW Return Flow Thermal Barrier MOV
1HV-9002B	Containment Spray Pump Suction MOV
1HV-9003B	Containment Spray Pump Suction MOV
1HV-9002A	Containment Spray Pump Suction MOV
1HV-9003A	Containment Spray Pump Suction MOV

## LIST OF DOCUMENTS REVIEWED

### Procedures

70100-D, "Guidance for Procedure Changes That Potentially May Be Excluded From the 50.59 Process or Other Identified Processes, Version 1.0  
NMP-AD-008, "Applicability Determinations", Version 19.0  
NMP-AD-008-F01, "Applicability Determination", Version 10.1  
NMP-ES-035-006, "Fire Protection Program Impact Screen and Detailed Reviews", Version 7.0  
NMP-AP-001, "Development and Control of Southern Nuclear Procedures", Version 15.2  
NMP-EP-404, Plant Vogtle Emergency Management Guideline (EMG), Version 13  
17103-C, "Annunciator Response Procedures for Fire Alarm Computer", Version 39.3  
18038-1, "Operation From Remote Shutdown Panels", Version 33.7  
19000-C, "E-0 Reactor Trip or Safety Injection", Version 37.3  
19010-C, "E-1 Loss of Reactor or Secondary Coolant", Version 35.1  
19100-C, "ECA-0.0, Loss of all AC Power", Version 40  
70100-D, "Guidance For Procedure Changes That Potentially May Be Excluded From the 50.59 Process Or Other Identified Processes", Version 1.0  
14958-C, "Fire Brigade Equipment-Quarterly Inspection", Version 43  
19001-C, "ES-0.1 Reactor Trip Response", Version 35.1  
14445-1, U1 Remote Shutdown Monitoring Instrumentation Channel Check, Version 7.1  
14445-2, U2 Remote Shutdown Monitoring Instrumentation Channel Check, Version 5.2  
14961-C, Emergency Lighting Surveillance, Version 40.0  
18038-2, Operation From Remote Shutdown Panels, Version 26.5  
20236-C, Breaker Maintenance Program, Version 6  
27579-C, Emergency Diesel Generator Fuel Oil Pump Control Circuit Emergency Jumper Installation, Rev. 3.3  
27720-C, 4.16 KV/13.8 KV Switchgear Cubicle Maintenance, Version 31  
29101-C, Emergency Lighting Surveillance, Version 47.4  
92005-C, Fire Response Procedure, Version 32.2  
92040-C, Fire Protection Operability and LCO Requirements, Version 42  
NMP-OS-007-001, Conduct of Operations Standards and Expectations, Version 14.3  
NMP-ES-002, System Monitoring and Health Reporting, Version 18  
NMP-ES-005, Scoping and Importance Determination for Equipment Reliability, Version 14  
NMP-AP-003, Procedure and Work Instruction Use and Adherence, Version 3  
NMP-ES-035-007-F01, Hourly Fire Watch, Version 2  
NMP-MA-010, Erecting, Modifying, and Disassembling Scaffolding, Version 3.1  
NMP-MA-010-001, Permanent Scaffolding Installation, Modification, and Removal Process, Version 1.3  
NMP-AD-010, 10CFR50.59 Screening/Evaluation, Version 7.0  
NMP-ES-035-002, Fire Protection Program Notebooks, Version 4.0  
NMP-ES-035-004, Fire Protection Documentation of Engineering Judgments and Calculations, Version 3.1  
NMP-TR-425, Fire Drill Program, Version 7.3  
NMP-TR-426-F01, Fire Training Program, Version 1.1  
00352-C, General Housekeeping and Control of In Process Materials, Version 17  
11877-1, Cold Weather Checklist, Version 25.3  
13903-C, Fire Protection System Operation, Version 44.3  
14958-C, Fire Brigade Equipment Quarterly Inspection, Version 43  
29123-C, Semi-Annual Fire Door Inspection, Version 11  
29124-C, Fire Doors Inspection, Version 25.4

29144-C, Fire Boundaries and Fire Rated Penetration Seals 18 Month Visual Inspection, Version 29

92000-C, Fire Protection Program, Version 7.3

92005-C, Fire Response Procedure, Version 32.2

92015C, Use, Control and Storage of Flammable/Combustible Materials, Version 35.1

92025-C, Fire Protection Surveillance Program, Version 19.5

92040-C, Fire Protection Operability and LCO Requirements, Version 42

#### Completed Surveillances and Work Orders (WO)

WO SNC449590, 18-Month Diesel Generator Building Emergency Lighting Surveillance, 8/29/2014

WO SNC504654, 18-Month Radwaste Processing Facility Emergency Lighting Surveillance, 7/8/2014

WO SNC531833, MCR Lighting LOSP, 11/6/2014

WO SNC573984, MCR Emergency Lighting Discharge Test, 2/18/2015

WO SNC592754, Monthly U1 Remote Shutdown Monitoring Instrumentation Channel Check, 2/11/2015

WO SNC592755, Monthly U2 Remote Shutdown Monitoring Instrumentation Channel Check, 2/11/2015

WO SNC 386226, Fire Dampers Control Building, dated 11/12/2012

WO SNC 398078, Fire Boundaries and Fire Rated Penetration Seals 18 Month Visual Inspection, dated 3/18/2014

WO SNC 405079, Fire Dampers Control Building, dated 10/30/2014

WO SNC 407553, Fire Dampers Control Building, dated 4/20/2014

WO SNC 437730, 18 Month Fire Door Inspection, dated 2/22/2015

WO SNC 447848, Fire Boundaries and Fire Rated Penetration Seals 18 Month Visual Inspection, dated 1/27/2015

WO SNC 449641, 18 Month Fire Detection Operational Test, dated 3/25/2015

WO SNC 449672, Fire Dampers Control Building, dated 7/25/2014

WO SNC 463720, 18 Month Fire Detection Operational Test, dated 8/07/2013

WO SNC 475070, Portable Fire Extinguisher Inspection, dated 4/22/2014

WO SNC 449624, 18 Month Automatic Fire Detection Operational Test, dated 2/17/2015

WO SNC 504315, Annual Electric Fire Pump Test, dated 7/3/2014

WO SNC 515993, Annual Diesel #2 Fire Pump Test, dated 6/05/2014

WO SNC 527136, Annual Diesel #1 Fire Pump Test, dated 8/24/2014

WO SNC 522770, 6 Month Halon System Visual Inspection, dated 7/02/2014

WO SNC 568656, Portable Fire Extinguisher Inspection, dated 5/09/2015

WO SNC 566225, Fire Brigade Equipment Quarterly Inspection, dated 12/16/2014

WO SNC 579332, Monthly Electric Fire Pump Test, dated 12/18/2014

WO SNC 586411, Monthly Electric Fire Pump Test, dated 1/15//2015

14956-C, Fire Suppression System 5 Year Flow Verification, dated 6/12/2012

29152-305-C100078261, 3 Year Fire Hose station Flow Verification and Hydrostatic Inspection

29107-102-1061991401, Halon System Visual PM Checklist

#### Work Orders / Technical Evaluations

WO SNC573495, EMERGENCY AUDIT PSDA & PSDB U1, Rev. 0

WO SNC591011, EMERGENCY AUDIT PSDA & PSDB U2, Rev. 0

WO SNC531833, 14961-C Quarterly Surveillance, 11/6/2014

WO SNC647654, Correct Fire Alarm in U2 Containment for RCP #3, 3/23/2015

TE 853915, Blackout Test Needed for 3 Rooms, 8/14/2014



Vendor Manuals

ELF-LED 0811, BIRNS Model 4710 Emergency Light Fixture-LED Data Sheet, Rev. 0  
 BIRNS Model 4710 Emergency Light Fixture-LED Technical Data Sheet, Rev. 0  
 MAN-4701-102, INSTRUCTION MANUAL for the BIRNS Emergency Lighting Fixture Model 4701, 6/18/2003  
 AX3AN03-16, Holophane M-19, 12 Volt DC Power Pack Instrumentation & Maintenance, 8/30/1985

Engineering Changes and Calculations

DCP SNC408900, U2 E-Lights for MSO Operator Actions, Version 1  
 DCP SNC408903, U1 E-Lights for MSO Operator Actions, Version 1  
 X4C2301S026, "Fire Event Safe Shutdown Evaluation (FESSE) Control Building," Version 14.0  
 Fire Event Safe Shutdown Evaluation Report "The Book," Rev. 2  
 Fire Event Safe Shutdown Evaluation Summary Report, Rev. 4  
 X4C2301S311, "VEGP Multiple Spurious Operations Analysis", Version 2.0  
 X3C708, Fire Event Safe Shutdown Circuit Analysis, Version 27  
 X4C2301S306, B.5.b Mitigation Strategy Flow Verification, Version 4.0  
 X4C2301S309, Safety Related Cable Tray Suppression Coverage, Version 1.0  
 SNC317274, Wet-Pipe Overpressure Protection, dated 10/29/2013  
 SNC476229, North Fire Water Tank Level Control, dated 7/23/2013  
 SNC97VAM039, Minor Design Change-Electric Fire Pump Impeller Replacement, 8/1/1997  
 X6CXC32, Flooding Analysis-Control Building, Level A, Version 7  
 X4C2301S006, Most Demanding Sprinkler System for Tech Spec 3.7.10.1, Version 4  
 2X4AX03-05877, Walter Kidde Halon 1301 Evaluation, Hazard 2-2304-R4-001, dated 10/20/1988  
 AX1AG11-00024, ICMS Fire Test Plant Vogtle, dated 4/4/1983

Drawings

1X4DB100, "P&ID's And Flow Diagram Legend", Version 22.0  
 1X4DB112, "P&I Diagram Reactor Coolant System, System No. 1201", Version 43.0  
 1X4DB114, "P&I Diagram Chemical & Volume Control System, System No, 1208", Version 41.0  
 1X4DB116-1, "P&I Diagram Chemical & Volume Control System, System No. 1208", Version 53.0  
 1X4DB116-2, "P&I Diagram Chemical & Volume Control System, System No. 1208", Version 37.0  
 1X3DB138-1, "P&I Diagram Auxiliary Component Cooling Water System, System No. 1217", Version 30.0  
 1X3DB138-2, "P&I Diagram Auxiliary Component Cooling Water System, System No. 1217", Version 19.0  
 1X4DB159-2, "P&I Diagram Main Steam System, System No. 1301", Version 34.0  
 AX3DG031, Lighting Fixture Schedule, Version 24  
 1X3DG302, Lighting & Communication Plan Area 0, EL 200', Level A Control Bldg, Version 11  
 1PV-0456A, Reactor Coolant System, Rev. 9  
 1X3D-BD-BO3F, Elementary Diagram RCS 1PV-0456A, Rev. 9  
 1X3D-BD-CO4L, Elementary Diagram CVCS 1HV-8103A, Rev. 6  
 1X3D-BD-CO4H, Elementary Diagram CVCS 1HV-8103B, Rev. 5  
 1X3D-BD-CO4J, Elementary Diagram CVCS 1HV-8103C, Rev. 6  
 1X3D-BD-CO4U, Elementary Diagram CVCS 1HV-8103D, Rev. 5  
 1X3D-BD-CO2J, Elementary Diagram CVCS 1LV-0112E, Rev. 8  
 1X3D-BD-LO3H, Elementary Diagram NSCW System 1HV-1978, Rev. 9

1X3D-BD-LO3F, Elementary Diagram ACCW System 1HV-1974, Rev. 9  
 1X3DF304, Conduit and Tray Plan Area 0, EL. 240', LVL 2 Control Building, Unit 1, Rev. 17  
 92794-1, FZ 94-CB-Level A Fire Fighting Pre-Plan, Version 3  
 CX4DB173-1, P & ID-Fire Protection-Yard Piping-System No. 2301, Version 43.0  
 CX4DB173-2, P & ID-Fire Protection-Yard Piping-System No. 2301, Version 29.0  
 1X4DB100, P & ID and Flow Diagram Legend, Rev. 22  
 1X4DB101, P & ID Diagram Instrument Identification and Symbols, Rev. 5  
 1X4DB142-2, P & I Diagram, Control Building Drain System No. 1225, Rev.8  
 1X4DB174-3, P & I Diagram, Fire Protection Water Systems, System No. 2301, Version 26.0  
 1X4DB174-4, P & I Diagram, Fire Protection Water Systems, System No. 2301, Version 24.0  
 1X1D11H010, Control Building Architectural Penetration Seal Floor Plan, Level A Unit 1, Rev. 9  
 1X1D11H019, Control Building Architectural Penetration Seal Floor Plan, Level 2 Unit 1, Rev. 5  
 1X1D11J032, Control Building Architectural Interior Elevations, Level A Unit 1, Rev. 10  
 1X1D11H033, Control Building Architectural Interior Elevations, Level A Unit 1, Rev. 9  
 1K2-2301-335-01, Fire Protection Water System Fabrication Isometric, Control Building Area 2E  
 LVL 1, Rev. 4  
 1K2-2301-071-02, Fire Protection Water System Fabrication Isometric, Control Building Area 2E  
 2F and 5C LVL A, Rev. 7  
 1K2-2301-071-03, Fire Protection Water System Fabrication Isometric, Control Building Area  
 2E, LVL A, Rev. 8  
 1K2-2301-263-01, Fire Protection Water System Fabrication Isometric, Control Building Area 2E  
 LVL A1, Rev. 8  
 1K4-2301-263-01, Fire Protection Water System Fabrication Isometric, Control Building Area 4E  
 LVL 1, Rev. 4  
 1K2-2301-335-01, Fire Protection Water System Fabrication Isometric, Control Building Area  
 2E, LVL 1, Rev. 4  
 1K2-2301-335-03, Fire Protection Water System Fabrication Isometric, Control Building Area 2E  
 LVL A, Rev. 3  
 1K4-2301-263-01, Fire Protection Water System Fabrication Isometric, Equipment Building Area  
 4E, LVL. 1

#### Licensing Basis Documents

VEGP UFSAR, Section 9.5.1, Fire Protection Program, Rev. 19  
 VEGP UFSAR, Section 9.5.2, Communication Systems, Rev. 19  
 VEGP UFSAR, Section 9.5.3, Lighting Systems, Rev. 19  
 VEGP-FSAR Table 9.5.1-2, Fire Protection System Component Data, Rev. 13  
 VEGP-FSAR Table 9.5.1-9, Exception to NFPA Codes, Rev. 16  
 VEGP-FSAR Table 9.5.1-10, Fire Protection Functional Responsibilities, Rev. 19  
 VEGP UFSAR, APPENDIX 9A, Fire Hazards Analysis, Fire Area 1-CB-L2-B, Rev. 14  
 VEGP UFSAR, APPENDIX 9A, Fire Hazards Analysis, Fire Area 1-CB-L1-A, Rev. 17  
 VEGP UFSAR, APPENDIX 9A, Fire Hazards Analysis, Fire Area 1-CB-LA-N, Rev. 14  
 VEGP UFSAR, APPENDIX 9A, Fire Hazards Analysis, Fire Area 1-CB-LA-G, Rev. 14  
 VEGP UFSAR, APPENDIX 9B, Comparison of VEGP U1 & U2 with Requirements of the BTP  
 CMEB 9.5-1, Rev. 19  
 VEGP Renewed Facility Operating License Unit 1, NPF-68  
 VEGP Renewed Facility Operating License Unit 2, NPF-81  
 VEGP Units 1 & 2 SERs Related to Operation of Vogtle Electric Generating Plant, Units 1 & 2,  
 Docket Nos. 50-424 and 50-425, dated June 1985 and Supplements 1 through 9

#### Applicable Codes and Standards

NFPA 13-1983, Sprinkler Systems

NFPA 14-1983, Standpipes and Hose Systems  
 NFPA 20-1983, Fire Pumps  
 NFPA 24-1984, Private Fire Service Mains and Their Appurtenances  
 NFPA 80-1983 Fire Doors and Windows

#### Miscellaneous Documents

VEGP Maintenance Rule – Emergency Lights Status, System 1808  
 NMP-ES-002-F01, System Health Tiered Approach, Version 2.0  
 VEGP Design Manual DC-1813, Fire Detection System, Version 5  
 VEGP Design Manual DC-2301, Fire Protection Water System, Version 10  
 VEGP Design Manual DC-2303, Fire Protection Seismic Water System, Version 4  
 VEGP Design Manual DC-2304, Fire Protection Halon System, Version 4  
 NMP-GM-003-F19, TFPI Focus Area Self-Assessment Report, Version 1.0  
 Nuclear Oversight Audit of Fire Protection – Fleet FP 2014, 9/24/2014  
 NEI 96-07, “Guidelines for 10 CFR 50.59 Evaluations,” Rev. 1  
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 NRC Triennial Fire Protection Inspection Report 05000424/2012007 and 05000425/2012007, dated August 24, 2012  
 Hot Work Permit 11501846, dated 5/11/2015  
 Hot Work Permit 11501847, dated 5/14/2015  
 Hot Work Permit 21501022, dated 5/15/2015  
 Hot Work Permit 21501025, dated 5/19/2015  
 Hot Work Permit 21501026, dated 5/19/2015  
 Transient Combustible Permit 20150145, dated 5/25/2015  
 Transient Combustible Permit 20150146, dated 5/25/2015  
 Transient Combustible Permit 20150147, dated 5/25/2015  
 Transient Combustible Permit 20150148, dated 5/25/2015  
 Transient Combustible Permit 20150152, dated 5/30/2015  
 LCO 1-15-060, Fire Protection Operability and LCO Requirements, 4/17/2015  
 LCO 1-15-079, Fire Protection Operability and LCO Requirements, 6/7/2015  
 LCO 1-15-080, Fire Protection Operability and LCO Requirements, 6/19/2015  
 V-OPS-EDMS-Curriculum Status Group, Extensive Damage Mitigation Guidelines, 7/24/2015  
 V-OPS-FBM-Curriculum Status Group, Fire Brigade Team Member, dated 7/17/2015  
 S-FP-101-Curriculum Status Group, Introduction to Fire Fighting, dated 7/16/2015  
 Burke County Emergency Management Agency Mutual Aid Agreement, dated 10/10/2014  
 Viking Technical Data Sheet for Check Valve 815A, dated May 9, 2013  
 Fire Drill VNP Unit 1 & 2 SNC Course Completion Record ORDTKTNO 100216332, Fire Drills, dated 5/1/2015

#### Fire Protection Pre-Plans

92794-1, Zone 94- Control Building-Level A Fire Fighting Preplan, Version 3  
 92798-1, Zone 98- Control Building-Level A Fire Fighting Preplan, Version 3  
 92803-1, Zone 103-Control Building-Level A Fire Fighting Preplan, Revision 2.1  
 92805-1, Zone 105- Control Building-Level A Fire Fighting Preplan, Version 5  
 92820-1, Zone 120- Control Building-Level 2 Fire Fighting Preplan, Version 7

#### Audits and Self-Assessment Reports

System Health Report, Fire Protection Water System, Q1-2014 and Q2-2014  
 System Health Report, Fire Detection Systems, Q1-2014 and Q2-2014

Engineering Programs Health Reports and Notebooks, Fire Protection Program Specific Performance Indicator Reports, Q1-2015 and Q2-2015  
 NMP-GM-003-F19, Focused Area Self-Assessment-Triennial Fire Protection Inspection Focused Area Self-Assessment report, dated 2/24/2015

CRs Reviewed

CR 10096811, Procedure 17103A-C Revision Required  
 CR 10031534, TFPI FASA Deficiency #3  
 CR 10031535, TFPI FASA Deficiency #4  
 CR 2007108715, Potential hot short issue involving Unit 1 containment spray valves  
 CR 2007108716, Potential hot short issue involving Unit 2 containment spray valves  
 CR 10057102, MOV Hot Short Analysis (IN 92-18)  
 CR 2010109122, JPMs associated with 18038-1/2 should be revised  
 CR 2010110025, Issue with procedure 17103A-C noted during table top review  
 CR 2010110026, Issue with procedure 17103A-C noted during table top review  
 CR 2010110072, ELU lumen level questioned for areas associated with procedure 17103A-C  
 CR 2010110074, Problems noted with procedure 17103A-C during walk through  
 CR 2010110075, Procedure 17103A-C clarify meaning of "locally verify" valve position  
 CR 2010110195, Procedure 17103A-C has inadequate guidance for de-energizing bus  
 CR 2010112114, CRFASE analysis does not match simulator response for control room fire  
 CR 472823, 17103A-C  
 CR 480128, TFPI 2012 Zone 80 Fire Watch  
 CR 482614, 2012 TFPI calculation enhancement  
 CR 562463, A review of the ammeter cable impact is needed to confirm whether it should be addressed by FESSE...  
 CR 512740, Fire Protection Radio Not Working  
 CR 871723, Fire Door Will Not Close  
 CR 881409, ELUs 1NLP36-4-1 & 1NLP36-4-2 Failed Emergency Lighting Surveillance  
 CR 0882322, Unit 1 MCR Emergency Lighting Failure During Surveillance  
 CR 0884234, Procedural Revision Request for 14961-C  
 CR 0884236, Procedural Revision Request for 29101-C  
 CR 1000163, Inoperable Emergency Lights  
 CR 10013914, E-Light 2NLP35-13-4 Will Not Light  
 CR 10030989, Door Not Latching Completely  
 CR 10035653, Failed Raceway Fire Barrier  
 CR 10004023, Inoperable ELU 2NLP10-1  
 CR 10004038, Unsat Emergency Light  
 CR 10042522, Gap Noticed in Fire Barrier  
 CR 10044307, Fire Alarm in U2 Containment for RCP #3  
 CR 10005256, Emergency Light Failed Surveillance  
 CR 10054963, Emergency Lighting Fixture Not Working  
 CR 10055613, Fire Door Will Not Latch  
 CR 10067247, Fire Door Condition Not Evaluated Promptly  
 CR 10070678, Fire Door Inoperable  
 CR 10070680, Fire Door Inoperable  
 CR 10094216, Notification of Unusual Event-Fire Alarm in Containment

CRs Generated During This Inspection

CR 10095869, 27579-C EDG Fuel Oil Pump Jumper Install Enhancement  
 CR 10096004, Tape on Door Latch

CR 10096008, Halon Door Seal  
CR 10096023, Control Room Kitchen Ceiling Tile out of Position  
CR 10096277, Fire Extinguisher Bracket in Control Room  
CR 10096923, Degraded Penetration Seals in Diesel Fire Pump House  
CR 10096948, Update 29144-C to include Diesel Fire Pump Fire Barrier Wall  
CR 10097172, Loose Damming Board  
CR 10097511, Fire Protection Tag is Incorrect  
CR 10099719, ELU Correction to Equipment Reliability Checklist  
CR 10101194, Equipment tag Faded on B.5.b Hose Connection  
CR 10101295, E-Light Drawing is Incorrect  
CR 10101770, Procedure Revision Required for 14961-C  
CR 10101858, Inspection Tasks Not Retained as QA Record of SSD Storage Inventory  
CR 10101952, 29124-C Procedure Change Request  
CR 10101957, 29123-C Procedure Change Request  
CR 10101996, Potential Life Safety Hazard from Improper Door Configuration  
CR 10102010, Broken Penetration Seal Damming Board  
CR 10102011, Pen Seal 933A A SSDP Room Found Not to Meet Seal Detail  
CR 10102012, Pen Seal 938A A SSDP Room Does Not Meet Seal Detail  
CR 10102275, B.5.b Diesel Fuel Sampling  
CR 10102289, Full Trash Can Located Under Train A Safety Related Cable Tray  
CR 10102298, Review procedure 17103A-C for enhancements  
CR 10102315, Procedure revision required for 17103A-C  
CR 10103001, Revise Calculation X4C23011S311  
CR 10103018, Scaffolding in U1 Control Building Room 227 needs to be removed

## LIST OF ACRONYMS AND ABBREVIATIONS

B.5.b	Refers to a section of Interim Compensatory Measures Order, EA-02-026
BTP	Branch Technical Position
CAP	Corrective Action Program
CFR	<i>Code of Federal Regulations</i>
CMEB	Chemical Engineering Branch
CR	Condition Report
ELU	Emergency Lighting Unit
FA	Fire Area
FESSE	Fire Event Safe Shutdown Evaluation
FHA	Fire Hazards Analysis
FPP	Fire Protection Program
FZ	Fire Zone
HVAC	Heating, Ventilation, and Air Conditioning
IMC	Inspection Manual Chapter
IP	Inspection Procedure
MCR	Main Control Room
MSO	Multiple Spurious Operation
NCV	Non-cited Violation
NFPA	National Fire Protection Association
NRC	Nuclear Regulatory Commission
OMA	Operator Manual Action
P&ID	Piping and Instrumentation Drawing
SDP	Significance Determination Process
SER	Safety Evaluation Report
SNC	Southern Nuclear Operating Company
SPP	Sound Powered Phone
SSD	Safe Shutdown
UFSAR	Updated Final Safety Analysis Report
VEGP	Vogtle Electric Generating Plant