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10 CFR 50.90

ATTN: Document Control Desk  
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Virgil C. Summer Nuclear Station (VCSNS) Units 2 and 3  
Combined License Nos. NPF-93 and NPF-94  
Docket Nos. 52-027 & 52-028

Subject: LAR 13-26: VCSNS Units 2&3 Emergency Plan Revision to Comply with  
Emergency Preparedness Final Rule

In accordance with the provisions of 10 CFR 50.90, South Carolina Electric & Gas Company (SCE&G) requests an amendment to the Virgil C. Summer Nuclear Station (VCSNS) Units 2 and 3 Combined Licenses (COLs) (License Nos. NPF-93 and NPF-94, respectively). In accordance with 10 CFR 50, Appendix E, section I.5, this amendment request proposes changes to the VCSNS Units 2&3 Emergency Plan to facilitate compliance with the Final Rule for Emergency Planning and Preparedness published on November 23, 2011.

Several changes to the VCSNS Units 2&3 Emergency Plan are required in order to comply with regulatory changes enacted by the Nuclear Regulatory Commission (NRC) in the Final Rule. These changes include the addition of text that 1) clarifies the distance of the Emergency Operations Facility (EOF) from the site, 2) updates the content of exercise scenarios to be performed at least once each exercise cycle, and 3) requires the Evacuation Time Estimate (ETE) to be updated annually between decennial censuses. This amendment request also proposes a new license condition to ensure the completion of a staffing analysis of on-shift personnel responsibilities no later than 180 days before fuel load.

The Description, Technical Evaluation, Regulatory Evaluation (including Significant Hazards Consideration), and Environmental Considerations for the proposed changes to the VCSNS Units 2&3 Emergency Plan and Combined Licenses are contained in Enclosure 1 of this letter. The markups depicting the requested changes to the plan are contained in Enclosure 2. Enclosure 3 identifies the text of the proposed license condition, and Enclosure 4 identifies the Final Rule items that did not require a change to the Emergency Plan to demonstrate compliance with the Final Rule.

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SCE&G requests NRC staff review and approval of the proposed license amendment by November 28, 2014. This license amendment will be implemented by SCE&G within 180 days of approval.

In accordance with 10 CFR 50.91, SCE&G is notifying the State of South Carolina of this LAR by transmitting a copy of this letter and its enclosures to the designated State Official.

Should you have any questions, please contact me by telephone at (803) 941-9876, or by email at [apaglia@scana.com](mailto:apaglia@scana.com).

I declare under penalty of perjury that the foregoing is true and correct.

Executed on this 17 day of DECEMBER, 2013.

Sincerely,



Alfred M. Paglia  
Manager, Nuclear Licensing  
New Nuclear Deployment

DK/RAJ/dk

- Enclosure 1: Virgil C. Summer Nuclear Station Units 2&3 License Amendment Request: Final Rule Items Requiring Changes to the Virgil C. Summer Nuclear Station Units 2&3 Emergency Plan (LAR 13-26)
- Enclosure 2: Virgil C. Summer Nuclear Station Units 2&3 Proposed Changes to Licensing Basis Documents (LAR 13-26)
- Enclosure 3: Virgil C. Summer Nuclear Station Units 2&3 Proposed License Conditions for Combined License Numbers NPF-93 and NPF-94 (LAR 13-26)
- Enclosure 4: Virgil C. Summer Nuclear Station Units 2&3 Final Rule Items Requiring No Changes to the Virgil C. Summer Nuclear Station Units 2&3 Emergency Plan (LAR 13-26)

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**South Carolina Electric & Gas Company**

**NND-13-0637**

**Enclosure 1**

**Virgil C. Summer Nuclear Station Units 2&3**

**License Amendment Request:**

**Final Rule Items Requiring Changes  
to the Virgil C. Summer Nuclear Station  
Units 2&3 Emergency Plan**

**(LAR 13-26)**

NND-13-0637

Enclosure 1

LAR 13-26: Virgil C. Summer Nuclear Station Units 2&3 Emergency Plan Revision

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## **1. Summary Description**

On November 23, 2011 the Nuclear Regulatory Commission (NRC) published the Final Rule associated with Emergency Planning and Preparedness in the Federal Register (76FR72560) titled "Enhancements to Emergency Preparedness Regulations." These regulatory changes required compliance on a fixed implementation schedule for current licensees and offered provisions for Licensees under Part 52 to defer compliance with the Final Rule requirements through a license amendment request.

Pursuant to 10 CFR 50, Appendix E, section I.5, and in accordance with 10 CFR 50.90, South Carolina Electric & Gas Company (SCE&G) hereby requests an amendment to Combined License (COL) Nos. NPF-93 and NPF-94 for the Virgil C. Summer Nuclear Station (VCSNS) Units 2 and 3, respectively. This license amendment request facilitates the VCSNS compliance with the Emergency Preparedness and Planning regulations revised in the Final Rule. It includes a proposed license condition that requires SCE&G to perform a detailed staffing analysis pursuant to 10 CFR 50, Appendix E, section IV.A.9, and proposed changes to the VCSNS Units 2&3 Emergency Plan that address the new regulations.

## **2. Detailed Description and Technical Evaluation**

In section 50.54, "Conditions of licenses," of Title 10, Part 50, of the Code of Federal Regulations "Domestic Licensing of Production and Utilization Facilities," paragraph (q) states that, "A licensee authorized to possess and operate a nuclear power reactor shall follow and maintain in effect emergency plans which meet the standards in §50.47(b) and the requirements in Appendix E of this part."

The Virgil C. Summer Nuclear Station (VCSNS) Nuclear Operations Radiation Emergency Plan (Emergency Plan) establishes the concepts, evaluation and assessment criteria, and protective actions that are necessary in order to limit and mitigate the consequences of potential or actual radiological emergencies. It has been prepared to establish the procedures and practices for management control over unplanned or emergency events that may occur at VCSNS. It also provides the necessary prearrangements, directions, and organization so that all nuclear emergencies can be effectively and efficiently resolved.

The VCSNS Units 2&3 Emergency Plan addresses guidance and adheres to the intent of the criteria established and provided within NUREG-0654/FEMA-REP-1 Rev. 1 (NUREG-0654), which is a joint NRC and Federal Emergency Management Agency (FEMA) document. This document was created to provide guidance to state and local governments and nuclear facility operators in the development of radiological emergency response plans and preparedness in support of nuclear power plants. Regulatory Guide 1.101, "Emergency Planning and Preparedness for Nuclear Power Reactors," endorses the criteria and recommendations in NUREG-0654 as methods acceptable to the NRC staff for complying with the standards in 10 CFR 50.47.

The Nuclear Regulatory Commission has amended certain emergency preparedness (EP) requirements in its regulations that govern domestic licensing of nuclear power plants. The Final Rule codifies certain voluntary protective measures contained in NRC Bulletin 2005-02, "Emergency Preparedness and Response Actions for Security Based Events," and generically applicable requirements similar to those previously imposed by Commission Orders.

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Enclosure 1

LAR 13-26: Virgil C. Summer Nuclear Station Units 2&3 Emergency Plan Revision

After the terrorist attacks of September 11, 2001, the NRC determined that it was necessary to require certain modifications of EP programs for operating power reactor licensees to ensure adequate protection of the public health and safety. These modifications were issued to licensees by NRC Order EA-02-026 "Order for Interim Safeguards and Security Compensatory Measures" on February 25, 2005. Post Order EP program inspections further identified several EP issues that required further action to better respond to the post-September 11, 2001 threat environment.

As directed by the May 4, 2005 Staff Requirements Memorandum (SRM) to SECY-05-0010, the NRC staff performed a comprehensive review of the EP regulatory structure, including reviews of regulations and guidance documents, and presented their findings to the Commission in September 2006. The staff's research and analysis led to the identification of 12 issues as areas for improvement with a high priority, including six security EP issues and six non-security EP issues. In SECY-06-0200 the NRC staff recommended that the Commission approve rulemaking as the most effective and efficient means to ensure that the high priority EP issues were resolved. The Commission, in its SRM to SECY-06-0200, dated January 8, 2007, approved the NRC staff's recommendation to pursue rulemaking and guidance changes for enhancements to the EP program.

On November 23, 2011 the NRC published the Final Rule associated with Emergency Preparedness in the Federal Register (76FR72560) titled "Enhancements to Emergency Preparedness Regulations." Revisions to the emergency planning regulations implemented in the Final Rule included the twelve areas for improvement identified by the NRC staff, as well as provisions for those Licensees electing to defer compliance with the Final Rule by submitting a license amendment request. As stated in 10 CFR 50, Appendix E, section I.5, a Licensee under part 52, whose application was docketed before December 23, 2011, may defer compliance with any change to emergency preparedness regulations under the Final Rule issued November 23, 2011. If that Licensee chooses to defer compliance, it shall subsequently request to amend the combined license to comply with those changes no later than December 31, 2013. Notwithstanding any Commission finding under 10 CFR 52.103(g) regarding the Licensee's facility, the combined license holder may not operate the facility until the NRC has approved the license amendment demonstrating compliance with the Final Rule.

SCE&G requests NRC review and approval of the following proposed changes to Combined License Numbers NPF-93 and NPF-94 and to the VCSNS Units 2&3 Emergency Plan to facilitate compliance with the additional requirements to 10 CFR 50, Appendix E, section IV, and 10 CFR 50.47(b) identified in the Final Rule, pursuant to 10 CFR 50, Appendix E, Section I.5:

1. On-Shift Staffing Analysis:

In the Final Rule, the NRC added a new paragraph, A.9, to section IV of Appendix E to 10 CFR Part 50. This new paragraph requires nuclear power reactor licensees to perform a detailed analysis to show that on-shift personnel assigned emergency plan implementation functions are not assigned any responsibilities that would prevent them from performing their assigned emergency plan functions when needed.

Because the construction of VCSNS Units 2&3 facilities is not yet complete, and because the abnormal and emergency operating procedures that would be used in such an analysis are not yet complete, the required staffing analysis cannot be effectively conducted. To ensure completion of the required analysis no later than 180 days before

initial fuel load, and to allow time for the procedures to be developed, a license condition is proposed for VCSNS Units 2&3 combined license numbers NPF-93 and NPF-94 respectively.

The proposed license condition is intended to provide assurance that revised emergency preparedness regulations in 10 CFR 50, Appendix E, section IV.A.9 will be met. It does not involve a physical change to the design, construction, or operation of the nuclear plants. The staffing analysis required in the proposed license condition will demonstrate that on-shift personnel can implement the Emergency Plan effectively without having competing responsibilities that could prevent them from performing their primary emergency plan tasks. Successful fulfillment of the proposed license condition ensures Licensee compliance with 10 CFR 50.47(b)(2) and to 10 CFR 50, Appendix E, section IV.A.9

The text of proposed license condition 2.D(12)(c)2 is provided in Enclosure 3, "Proposed License Condition for Combined License Numbers NPF-93 and NPF-94."

2. Emergency Response Organization Augmentation and Alternative Facilities:

10 CFR 50, Appendix E, section IV.E.8.b incorporates Emergency Operations Facility (EOF) distance criteria, specifying that an EOF must be located within 10 to 25 miles of each nuclear power reactor site that the facility serves or, if the EOF is located less than 10 miles from a nuclear power reactor site, then a backup facility must be provided within 10 to 25 miles of the site. If the EOF is greater than 25 miles from the site, the Licensee shall make provisions for locating the NRC and offsite responders closer to the nuclear power reactor site so that NRC and offsite responders can interact face-to-face with emergency response personnel entering and leaving the nuclear power reactor site.

Section H.2 of the VCSNS Units 2&3 Emergency Plan currently indicates that the EOF is greater than 10 miles from the site Technical Support Center (TSC). However, the Emergency Plan is silent on whether the EOF is less than 25 miles from the site. To explicitly comply with the distance range added in the Final Rule, the VCSNS Units 2&3 Emergency Plan is revised with the proposed text "and less than 25 miles" to section H.2 of the plan to indicate that the EOF is indeed located less than 25 miles from the TSC. This fact was not explicitly stated in the Emergency Plan. The geographical location of the TSC has not changed to comply with the Final Rule, only the language of the plan is revised to affirm that the current location of the EOF complies with the distance criteria identified in the Final Rule. This proposed change is shown in Enclosure 2 "Proposed Changes to Licensing Basis Documents".

To comply with 10 CFR 50, Appendix E, section IV.E.8.b, a small amount of text is proposed to be added to section H.2 of the VCSNS Units 2&3 Emergency Plan clarifying that the EOF is less than 25 miles from the site. This minor addition to the VCSNS Units 2&3 Emergency Plan makes it explicitly compliant with 10 CFR 50, Appendix E, section IV.E.8.b and 10 CFR 50.47(b).

3. Challenging Drills and Exercises:

In the Final Rule, the NRC amended 10 CFR 50, Appendix E, section IV.F.2.d to reflect exercise cycle requirements for states with respect to ingestion pathway and hostile action exercises. The Final Rule addresses exercises in states with multiple nuclear power reactor plume exposure pathway EPZs by providing that states should periodically participate in full or partial participation hostile action exercises and should rotate state participation among the licensees.

A revision to Section N.1 of the VCSNS Units 2&3 Emergency Plan was necessary to comply with 10 CFR 50, Appendix E, section IV.F.2.d. This revision indicates that the station participates on a rotating basis with other fixed nuclear facilities in the state of South Carolina for both ingestion pathway exercises and hostile action exercises which involve the integration of offsite resources with onsite response. The revision also indicates that these exercises occur at least once during each exercise cycle. A mark-up depicting the proposed changes to section N.1 of the Emergency Plan is included in Enclosure 2 "Proposed Changes to Licensing Basis Documents."

In the Final Rule the NRC added 10 CFR 50, Appendix E, section IV.F.2.i to require all nuclear power reactor licensees to include hostile action in biennial evaluated exercises.

Section N.1 of the VCSNS Units 2&3 Emergency Plan describes exercises. It states that exercises are conducted to ensure that all major elements of the emergency plan and preparedness program are demonstrated at least once in each exercise cycle. Text was added to section N.1 of the VCSNS Units 2&3 Emergency Plan to comply with the requirements of 10 CFR 50, Appendix E, section IV.F.2.i. This revision indicates that each exercise contains a hostile action component which involves the integration of offsite resources with onsite response. A mark-up depicting the proposed changes to section N.1 of the Emergency Plan is included in Enclosure 2 "Proposed Changes to Licensing Basis Documents."

In the Final Rule, the NRC added 10 CFR 50, Appendix E, section IV.F.2.j to the regulations to require that nuclear power reactor licensees conduct exercises that provide ERO members the opportunity to demonstrate proficiency in the skills necessary to implement the principal emergency response functional areas identified in section IV.F.2.b, and in every eight year exercise cycle, to demonstrate those skills required to respond to the following scenario elements: hostile action directed at the plant site, no radiological release or an unplanned minimal radiological release that does not require public protective actions, an initial classification of or rapid escalation to a Site Area Emergency or General Emergency and integration of offsite resources with onsite response.

Section N of the VCSNS Units 2&3 Emergency Plan affirms that the drill and exercise program is designed to verify the adequacy of the Emergency Preparedness Program and to develop, maintain, and evaluate the capabilities of the ERO to respond to emergency conditions and safeguard the health and safety of station personnel and the general public.

Section N.1 of the VCSNS Units 2&3 Emergency Plan was also revised to comply with the requirements of 10 CFR 50, Appendix E, section IV.F.2.j. The proposed revision

identifies the minimum contents of an exercise scenario. These requirements include hostile action against the plant, an initial classification of, or a rapid escalation to, Site Area Emergency or General Emergency and no radiological release or an unplanned minimal radiological release that requires the site to declare a Site Area Emergency, but does not escalate to a General Emergency. The reference to a six year exercise cycle was also removed from this section. The proposed changes are depicted in Enclosure 2 "Proposed Changes to Licensing Basis Documents".

To ensure compliance with the Final Rule requirements for "Challenging Drills and Exercises", the VCSNS Units 2&3 Emergency Plan was revised. This revision aligned the plan with the requirements for ingestion pathway and hostile action exercises that involve participation on a rotating basis with other fixed nuclear facilities in the state of South Carolina. Also, it ensured that biennial exercises will contain hostile action once in each exercise cycle and that ERO personnel are given the opportunity to demonstrate proficiency in key skills necessary to respond to the scenarios identified in 10 CFR 50, Appendix E, section IV.F.2.j. With the implementation of the proposed Emergency Plan changes, the Emergency Plan complies with 10 CFR 50, Appendix E and 10 CFR 50.47(b).

#### 4. Evacuation Time Estimate Updating:

In the Final Rule, the NRC amended 10 CFR 50.47(b)(10) and 10 CFR 50, Appendix E, Section IV, to require licensees to periodically review and update Evacuation Time Estimates (ETEs) and to provide conditions under which population changes between decennial censuses require an update to the Licensee's ETE analysis. At the time of publication of the Final Rule, VCSNS Units 2 and 3 had not yet been granted Combined Licenses. The Final Rule anticipated this circumstance, requiring applicants that became Licensees under Part 52 to conduct one review of any changes in the population of its EPZ at least 365 days before the licensee's scheduled fuel load.

The Final Rule also specified that the licensee shall perform an estimate of EPZ permanent resident population changes using the most recent U.S. Census Bureau annual resident population estimate and state/local government population data, if available. If the EPZ permanent resident population increases such that it causes the longest ETE value for the 2-mile zone or 5-mile zone, including all affected Emergency Response Planning Areas, or for the entire 10-mile EPZ, to increase by 25 percent or 30 minutes, whichever is less, from the licensee's currently approved ETE, the Licensee shall update the ETE analysis to reflect the impact of that population increase. The Licensee is required to submit the updated ETE analysis to the NRC for review under 10 CFR 50.4 no later than 365 days before the licensee's scheduled fuel load.

To comply with 10 CFR 50.47(b)(10) and 10 CFR 50, Appendix E, section IV, the VCSNS Units 2&3 Emergency Plan was revised to require that the ETE be conducted within 365 days of the availability of the decennial census data from the U.S. census Bureau. In addition, proposed text is also added to require the EPZ permanent resident population to be estimated annually between the decennial censuses. The proposed text is shown in the mark-up to Appendix 5 of the VCSNS Units 2&3 Emergency Plan found in Enclosure 2 "Proposed Changes to Licensing Basis Documents."

With the Final Rule requirements for ETE updating fulfilled through the proposed changes to Appendix 5 of the VCSNS Units 2&3 Emergency Plan, the plan meets the requirements of 10 CFR 50 Appendix E and 10 CFR 50.47(b).

### Summary

The proposed changes to the VCSNS Units 2&3 Emergency Plan and the proposed new License Condition provide assurance of compliance with the regulatory changes published in the November 23, 2011 Federal Register Notice (76FR72560), "Enhancements to Emergency Preparedness Regulations." As noted above, the proposed changes do not affect the design, construction or operation of the nuclear plants. Therefore, based on the technical evaluation above and the regulatory analysis provided in section 4.1 below, the proposed changes to the VCSNS Units 2&3 Emergency Plan and the new License Condition are acceptable.

### **3. Technical Evaluation (Incorporated Into Section 2 Above)**

### **4. Regulatory Evaluation**

#### **4.1 Applicable Regulatory Requirements/Criteria**

10 CFR 50.47(b) requires that the onsite emergency response plan meet the requirements of 16 planning standards. 10 CFR 50, Appendix E, section IV, sets requirements for the content of emergency plans.

- 10 CFR 50, Appendix E, section IV.A.9. This new paragraph requires nuclear power reactor licensees to perform a detailed analysis to show that on-shift personnel assigned emergency plan implementation functions are not assigned any responsibilities that would prevent them from performing their assigned emergency plan functions when needed.

To comply with 10 CFR 50, Appendix E, section IV.A.9, SCE&G proposes License Condition 2.D(12)(c)2 for VCSNS Units 2&3 Combined Operating License numbers NPF-93 and NPF-94. This license condition requires SCE&G to perform the required staffing analysis in accordance with NEI 10-05 "Assessment of On-shift Emergency Response Organization Staffing Capabilities" no later than 180 days before fuel load for each unit, and to submit the analysis to the NRC.

- 10 CFR 50, Appendix E, section IV.E.8.b requires that the Licensee's EOF be located greater than 10 miles and less than 25 miles straight line distance from the site. If the EOF is less than 10 miles from the nuclear power reactor site, then an alternate facility located between 10 and 25 miles from the site shall be provided by the Licensee. Likewise, if the EOF is located greater than 25 miles from the site, provisions must be made for locating the NRC and offsite responders closer to the nuclear power reactor site during an emergency so that NRC and offsite responders can interact face-to-face with emergency response personnel entering and leaving the site.

To explicitly comply with this distance range added in the Final Rule, the VCSNS Units 2&3 Emergency Plan was revised by adding the proposed text "and less than 25 miles" to section B.2 of the plan to indicate that the EOF is indeed located less

than 25 miles from the TSC. This fact was not explicitly stated in the Emergency Plan. The geographical location of the TSC has not changed to comply with the Final Rule, only the language of the plan is revised to affirm that the current location of the EOF complies with the distance criteria identified in the Final Rule.

- 10 CFR 50, Appendix E, section IV.F.2.d addresses exercises in states with multiple nuclear power reactor plume exposure pathway EPZs by providing that states should periodically participate in full or partial participation hostile action exercises and should rotate state participation among the licensees.

A proposed revision to section N.1 of the VCSNS Units 2&3 Emergency Plan indicates that VCSNS participates on a rotating basis with other fixed nuclear facilities in the state of South Carolina for both ingestion pathway exercises and hostile action exercises which involve the integration of offsite resources with onsite response. This revision also indicates that these exercises occur at least once during each exercise cycle.

- 10 CFR 50, appendix E, section IV.F.2.i requires all nuclear power reactor licensees to include hostile action in biennial evaluated exercises in each exercise cycle.

Proposed text was added to section N.1 of the VCSNS Units 2&3 Emergency Plan to indicate that each exercise contains a hostile action component which involves the integration of offsite resources with onsite response.

- 10 CFR 50, Appendix E, section IV.F.2.j requires that licensees conduct exercises that provide ERO members the opportunity to demonstrate proficiency in the skills necessary to respond to specific scenarios identified in section IV.F.2.j.

Section N.1 of the VCSNS Units 2&3 Emergency Plan was revised with proposed text to include an identification of the minimum required contents of an exercise scenario so as to comply with 10 CFR 50, Appendix E, section IV.F.2.j.

- 10 CFR 50.47(b)(10) and 10 CFR 50, Appendix E, section IV, requires Licensees to periodically review and update Evacuation Time Estimates (ETEs). These regulations require Licensees to perform a review of EPZ permanent resident population changes using the most recent U.S. Census Bureau annual resident population estimate and state/local government population data, if available. If the EPZ permanent resident population increases such that it causes the longest ETE value for the 2-mile zone or 5-mile zone, including all affected Emergency Response Planning Areas, or for the entire 10-mile EPZ, to increase by 25 percent or 30 minutes, whichever is less, from the licensee's current ETE, the Licensee is required to update the ETE analysis to reflect the impact of that population increase. The Licensee is also required submit the updated ETE analysis to the NRC for review under 10 CFR 50.4 no later than 365 days before the licensee's scheduled fuel load.

To comply with 10 CFR 50.47(b)(10) and 10 CFR 50, Appendix E, section IV, the VCSNS Units 2&3 Emergency Plan was revised with proposed text to require that the ETE be conducted within 365 days of the availability of the decennial census

data from the U.S. census Bureau. In addition, proposed text is also added to require the EPZ permanent resident population to be estimated annually between the decennial censuses.

10 CFR 50, Appendix E provides additional requirements for emergency planning and emergency preparedness. In this Appendix, section I.5, requires that holders of a combined license request a license amendment by December 31, 2013, to comply with the revised emergency preparedness regulations. The submittal of this license amendment request satisfies the requirements of 10 CFR 50, Appendix E for VCSNS Units 2&3.

#### **4.2 Precedent**

No precedent is identified.

#### **4.3 Significant Hazards Consideration Determination**

The requested changes would revise the combined licenses for Virgil C. Summer Nuclear Station (VCSNS) Units 2&3 by adding a license condition to require a staffing analysis be completed no later than 180 days before initial fuel load. In addition the requested changes modify the VCSNS Units 2&3 Emergency Plan to bring it into conformance with the regulatory changes published in the November 23, 2011 Federal Register Notice (76FR72560), "Enhancements to Emergency Preparedness Regulations." There is no proposed change to the design, construction or operation of the plants.

10 CFR 50, Appendix E, section I.5, requires that holders of a combined license request a license amendment by December 31, 2013, to comply with the revised emergency preparedness regulations. An evaluation to determine whether or not a significant hazards consideration is involved with the proposed amendment was completed by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of Amendment," as discussed below:

##### **4.3.1 Does the proposed amendment involve a significant increase in the probability or consequences of an accident previously evaluated?**

Response: No

The VCSNS Units 2&3 Emergency Plan provides assurance that the requirements of emergency preparedness regulations are met. The changes do not affect the design, construction, or operation of the nuclear plant, so there is no change to the probability or consequences of an accident previously evaluated. Adding a license condition related to an emergency preparedness staffing analysis and changing the VCSNS Units 2&3 Emergency Plan does not affect prevention and mitigation of abnormal events, e.g., accidents, anticipated operational occurrences, earthquakes, floods and turbine missiles, or their safety or design analyses as the purpose of the plan is to implement emergency preparedness regulations. No safety-related structure, system, component (SSC) or function is adversely affected. The change does not involve nor interface with any SSC accident initiator or initiating sequence of events, and thus, the probabilities of the accidents evaluated in the UFSAR are not affected. Because the changes do not involve any SSC or function used to mitigate an accident, the consequences of the accidents evaluated in the UFSAR are not affected.

Therefore, the requested amendment does not involve a significant increase in the probability or consequences of an accident previously evaluated.

**4.3.2 Does the proposed amendment create the possibility of a new or different kind of accident from any accident previously evaluated?**

Response: No

The VCSNS Units 2&3 Emergency Plan provides assurance that the requirements of emergency preparedness regulations are met. The changes do not affect the design, construction, or operation of the nuclear plant, so there is no new or different kind of accident from any accident previously evaluated. The changes do not affect safety-related equipment, nor do they affect equipment which, if it failed, could initiate an accident or a failure of a fission product barrier. In addition, the changes do not result in a new failure mode, malfunction or sequence of events that could affect safety or safety-related equipment.

Therefore, the requested amendment does not create the possibility of a new or different kind of accident from any accident previously evaluated.

**4.3.3 Does the proposed amendment involve a significant reduction in a margin of safety?**

Response: No

The VCSNS Units 2&3 Emergency Plan provides assurance that the requirements of emergency preparedness regulations are met. The changes do not affect the assessments or the plant itself. The changes do not affect safety-related equipment or equipment whose failure could initiate an accident, nor does it adversely interface with safety-related equipment or fission product barriers. No safety analysis or design basis acceptance limit or criterion is challenged or exceeded by the requested change.

Therefore, the requested amendment does not involve a significant reduction in a margin of safety.

**4.4 Conclusion**

In conclusion, based on the considerations discussed above, (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public. Pursuant to 10 CFR 50.92, the requested change does not involve a Significant Hazards Consideration.

**5. Environmental Considerations**

This amendment request proposes changes to the Virgil C. Summer Nuclear Station (VCSNS) Units 2&3 Emergency Plan. In addition, the amendment request proposes to add a license condition to the VCSNS Units 2&3 Combined Licenses related to an emergency preparedness staffing analysis.

The VCSNS Units 2&3 Emergency Plan provides assurance that the requirements of emergency preparedness regulations 10 CFR 50.47 and 10 CFR 50, Appendix E, are met. There is no physical change to the plant; there is no effect on how the plant is designed,

constructed, or operated. Therefore, the changes do not affect the assessments or the plant itself.

The proposed amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.21 and 10 CFR 51.22(c)(9), in that:

(i) *There is no significant hazards consideration.*

As documented in section 4.3, Significant Hazards Consideration Determination, of this license amendment request, an evaluation was completed to determine whether or not a significant hazards consideration is involved by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment." As noted above, the proposed change will not affect how the plant is designed, constructed or operated. The Significant Hazards Consideration determined that; (1) the proposed amendment does not involve a significant increase in the probability or consequences of an accident previously evaluated; (2) the proposed amendment does not create the possibility of a new or different kind of accident from any accident previously evaluated; and (3) the proposed amendment does not involve a significant reduction in a margin of safety. Therefore, it is concluded that the proposed amendment does not involve a significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and accordingly, a finding of "no significant hazards consideration" is justified.

(ii) *There is no significant change in the types or significant increase in the amounts of any effluents that may be released offsite.*

The requested amendment proposes changes to the VCSNS Units 2&3 Emergency Plan. In addition, the amendment request proposes to add a license condition to the VCSNS Units 2&3 combined licenses related to an emergency preparedness staffing analysis. As noted above, the proposed change will not affect how the plant is designed, constructed, or operated as the change is needed to bring the VCSNS Units 2&3 Emergency Plan into conformance with revised emergency preparedness regulations. The VCSNS Units 2&3 Emergency Plan is unrelated to any aspects of plant construction or operation that would introduce any changes to effluent types (e.g., effluents containing chemicals or biocides, sanitary system effluents, and other effluents) or affect any plant radiological or non-radiological effluent release quantities. Furthermore, these changes do not diminish the functionality of any design or operational features that are credited with controlling the release of effluents during plant operation. Therefore, the proposed amendment does not involve a significant change in the types or a significant increase in the amounts of any effluents that may be released offsite.

(iii) *There is no significant increase in individual or cumulative occupational radiation exposure.*

The proposed change to the VCSNS Units 2&3 Emergency Plan and the proposed addition of a license condition to the VCSNS Units 2&3 Combined Licenses brings the Emergency Plan into conformance with revised emergency preparedness regulations. As noted above, the proposed change will not affect how the plant is designed, constructed, or operated. Consequently, the changes to the VCSNS Units 2&3 Emergency Plan and the addition of the license condition have no effect on individual or cumulative occupational radiation exposure during plant operation. Therefore, the

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proposed amendment does not involve a significant increase in individual or cumulative occupational radiation exposure.

Based on the above review of the proposed amendment, it has been determined that anticipated construction and operational effects of the proposed amendment does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluents that may be released offsite, or (iii) a significant increase in the individual or cumulative occupational radiation exposure. Accordingly, the proposed amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), an environmental impact statement or environmental assessment of the proposed amendment is not required.

## **6. References**

None

**South Carolina Electric & Gas Company**

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**Enclosure 2**

**Virgil C. Summer Nuclear Station Units 2&3**

**Proposed Changes to  
Licensing Basis Documents**

**(LAR 13-26)**

### **Mark-up of Section H.2 of the VCSNS Units 2&3 Emergency Plan:**

Figure B-1b illustrates the staffing and organization for the OSC

Each OSC is equipped with communication links to the Control Rooms and the TSC (see Section F). A limited inventory of supplies will be kept in the OSCs or accessible to the OSCs. This inventory will include respirators, protective clothing, flashlights, and portable survey instruments.

Refer to the Unit Annexes for additional information regarding the OSCs.

A Back-up OSC is included in the configuration and sizing of the Technical Support Center and a Remote OSC is included in the Joint Information Center Building, which also houses the EOF. The Back-up OSC includes a designated command area, work areas for OSC groups, and staging areas (break room/kitchen) for OSC Damage Control personnel.

The Remote OSC is designed to allow evaluators and decision makers access to plant data and network computer systems to support event evaluations and development of mitigation strategies and mission while planning for return to the site. The facility also has access to communications systems, such as telephone (land based and satellite) systems and radio systems with direct links to the onsite personnel. Using these systems, communications may be established with the Units' Control Rooms, the EOF, and TSC. The building provides work space for staging damage control teams and has access to plant drawings, system information, and plant procedures. A limited number of hard copies of procedures are provided for reference or as back-up to network systems.

## **2. Emergency Operations Facility**

The EOF is the location where the ECO will direct a staff in evaluating and coordinating the overall company activities involved with an emergency. Activation of the EOF is mandatory upon declaration of an Alert or higher classification. The EOF is located in Richland County near the intersection of Bickley Road and SC Hwy 176 and is outside the 10 Mile Emergency Planning Zone and greater than 10 miles and less than 25 miles from the Technical Support Center (TSC). The EOF provides for:

- Management of overall emergency response
- Performance of the non-delegable emergency notification and PAR development and notification functions when in command and control
- Notification of appropriate corporate and station management
- Coordination of offsite radiological and environmental assessments
- Determination of recommended public protective actions
- Management of recovery operations from an Alert or higher classification
- Coordination of emergency response activities with federal, state, and county agencies

The EOF was designed with the following considerations:

- The EOF is provided with access limiting devices when not in use and assigned security personnel during activation to ensure that only authorized personnel are permitted to enter the facility.

## Mark-up of Section N.1 of the VCSNS Units 2&3 Emergency Plan:

### Section N: Drill and Exercise Program

This section describes the Drill and Exercise Program that VCSNS has implemented to:

- Verify the adequacy of the Emergency Preparedness Program
- Develop, maintain, and evaluate the capabilities of the ERO to respond to emergency conditions and safeguard the health and safety of station personnel and the general public
- Identify deficiencies in the Emergency Plan and its associated procedures, or in the training of response personnel, and ensure that they are promptly corrected
- Identify deficiencies in the relationship between the Emergency Plan and the VCSNS Security Plan and ensure that they are promptly corrected.
- Ensure the continued adequacy of emergency facilities, supplies, and equipment, including communications networks

#### 1. Exercises

Exercises provide an opportunity to evaluate the ability of participating organizations to implement a coordinated response to postulated emergency conditions. Provisions will be made for qualified personnel from VCSNS, other commercial nuclear facilities, or federal, state, or local governments to observe and critique each exercise as appropriate. Exercises are conducted to ensure that all major elements of the emergency plan and preparedness program are demonstrated at least once in each exercise cycle. Each scenario variation shall be demonstrated at least once during the cycle and shall include, but not limited to, the following:

- An off-hours exercise between 6:00 p.m. and 4:00 a.m.. Weekends and holidays are also considered off-hour periods
- Hostile action directed at the plant site involving the integration of offsite resources with onsite response; VCS participates on a rotating basis with other fixed nuclear facilities in the state of South Carolina
- An initial classification of, or rapid escalation to, Site Area Emergency or General Emergency
- No radiological release or an unplanned minimal radiological release that requires the site to declare a Site Area Emergency, but does not require declaration of General Emergency

An ingestion pathway exercise ; VCSNS participates on a rotating basis with the other fixed nuclear facilities in the state of South Carolina. The station shall conduct at least one off-hours exercise between 6:00 p.m. and 4:00 a.m. every cycle (6 years). Weekends and holidays are also considered off-hour periods. Ingestion Pathway Exercises are conducted on a six-year cycle. VCSNS participates on a rotating basis with the other fixed nuclear facilities in the State of South Carolina.

**Mark-up of Section N.1.a of the VCSNS Units 2&3 Emergency Plan:**

a. Biennial Exercises

Federally prescribed exercises are conducted at the station in order to test the adequacy of timing and content of implementing procedures and methods; to test emergency equipment and communication networks; and to ensure that emergency personnel are familiar with their duties. Exercises involving offsite agency participation, required under Sections F.2.b., F.2.c., & F.2.d. to 10 CFR 50 Appendix E, are conducted at the station based on FEMA guidance and the respective state and county emergency response plans.

Full participation exercises will include appropriate offsite local and state authorities and VCSNS personnel physically and actively taking part in testing the integrated capability to adequately assess and respond to a declared emergency at the station. Additionally, full participation exercises will include testing the major observable portions of the onsite and offsite emergency plans and mobilization of state, local, and VCSNS personnel and other resources in sufficient numbers to verify the capability to respond to the accident scenario. Some of the offsite response actions may be provided for evaluation in an out-of-sequence manner. These exercises are to be scheduled in an attempt to provide or simulate various weather conditions.

Ingestion pathway exercises are conducted ~~on a six-year~~ within each exercise cycle. VCSNS participates on a rotating basis with the other fixed nuclear facilities in the state of South Carolina. These exercises are usually conducted in conjunction with a full participation exercise as the state chooses.

Where full participation by offsite agencies occurs, the sequence of events simulates an emergency that may result in the release of radioactivity to the offsite environs or the threat of such a release, sufficient in magnitude to warrant a response by offsite authorities. The sequence of events will be submitted to the NRC and FEMA in a timely fashion to ensure that the scenario is judged to provide adequate opportunity for demonstration of the agreed upon objectives and extent of play.

In the event of an inadequate demonstration of the offsite response, VCSNS will participate and support the conduct of activities that are designed to address the deficient or weak demonstrations.

b. Off-Year Exercises

An Off-Year Exercise is conducted at the station during the calendar year when an NRC Evaluated Exercise is not scheduled. An Off-Year Exercise shall involve the station and its facilities in order to demonstrate at least the functions of management and coordination of emergency response, accident assessment, protective action decision-making, or plant system repair and corrective actions. Off-Year Exercises involve no or limited participation by offsite agencies, although a routine offer is made to determine the extent of participation by the offsite authorities. Emphasis is placed on development and conduct of an exercise that is more mechanically and operationally realistic. Players may be able, by implementing appropriate procedures and corrective actions, to determine the outcome of the scenario to a greater extent than when core damage and the release of radioactivity that are prerequisites for demonstration of all objectives which may include security response activities.

**Mark-up of Section N.2.g of the VCSNS Units 2&3 Emergency Plan:**

- f. Health Physics Drills: Health Physics drills involving a response to, and analysis of, simulated elevated airborne and liquid samples and direct radiation measurements within the plant are conducted semiannually in each Protected Area.
- g. Augmentation Drills: Augmentation drills serve to demonstrate the capability of the process to augment the on-shift staff with a TSC, OSCs, EOF, and JIC after declaration of an emergency. These drills are conducted using the following methods:
  - Semiannually, an unannounced off-hours ERO augmentation drill where no actual travel is required
  - At least once per exercise cycle (~~every 6 years~~), an off-hours unannounced activation of the ERO Notification System with actual response to the emergency facilities is conducted to support the response of the ERO
- h. Accountability Drills: Accountability drills are conducted annually for each Protected Area. The drill includes ascertaining the names of all missing individuals within that protected area and accounting for all individuals within the Protected Area continuously throughout the event.

**3. Conduct of Drills and Exercises**

Advance knowledge of the scenario will be kept to a minimum to allow "free-play" decision making and to ensure realistic participation by those involved. Before the drill or exercise, a package will be distributed to the Controllers and Evaluators that will include the scenario, a list of performance objectives, and a description of the expected responses.

Drills will be provided to ensure that each member of the ERO will have an opportunity to participate in a drill in their assigned facility at least once in a two-year period. Drills will be rotated among the Units and their specific ERFs to provide the needed opportunities for the members of the ERO.

For each emergency preparedness exercise or drill conducted, a scenario package is developed that includes at least the following:

- a. The basic objective(s) of the drill or exercise and the appropriate evaluation criteria
- b. The date(s), time period, place(s), and participating organizations
- c. The simulated events
- d. A list of anticipated Drill/Exercise Performance (DEP) opportunities including classification, notifications and PARs
- e. A time schedule of real and simulated initiating events
- f. A narrative summary describing the conduct of the scenario to include such things as simulated casualties, offsite fire department assistance, rescue of personnel, use of protective clothing, deployment of radiological monitoring teams, and public information activities
- g. A list of qualified participants

**Mark-up of Appendix 5 of the VCSNS Units 2&3 Emergency Plan:**

**Appendix 5 - Evacuation Time Estimate Study**

The Evacuation Time Estimate Study was prepared by KLD Associates, Inc. This controlled document, in its entirety, is filed under separate cover and has been distributed to designated locations. The ETE is to be conducted within 365 days of the availability of the decennial census data from the U.S. Census Bureau.

In accordance with 10 CFR 50 Appendix E, Section IV.5-7, the EPZ permanent resident population must be estimated annually between the decennial censuses. This document is to be a controlled document under separate cover and distributed to designated locations.

**South Carolina Electric & Gas Company**

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**Enclosure 3**

**Virgil C. Summer Nuclear Station Units 2&3**

**Proposed License Conditions for Combined License**

**Numbers NPF-93 and NPF-94**

**(LAR 13-26)**

**Mark-up of License Condition 2.D(12)(c) of Combined License  
Number NPF-93 for VCSNS Unit 2.**

(12) Site- and Unit-specific Conditions

- (a) Before commencing installation of individual piping segments and connected components in their final locations, SCE&G shall complete the as-designed pipe rupture hazards analysis for compartments (rooms) containing those segments in accordance with the criteria outlined in the AP1000 DCD, Rev. 19, Sections 3.6.1.3.2 and 3.6.2.5, and shall inform the Director of NRO, or the Director's designee, in writing, upon the completion of this analysis and the availability of the as-designed pipe rupture hazards analysis reports.
- (b) Before commencing installation of individual piping segments identified in AP1000 DCD, Rev. 19, Section 3.9.8.7, and connected components in their final locations in the facility, SCE&G shall complete the analysis of the as-designed individual piping segments and shall inform the Director of NRO, or the Director's designee, in writing, upon the completion of these analyses and the availability of the design reports for the selected piping packages.
- (c) No later than 180 days before initial fuel load, SCE&G shall submit to the Director of NRO, or the Director's designee, in writing:
  - 1. a A fully developed set of plant-specific emergency action levels (EALs) for VCSNS Unit 2 in accordance with Nuclear Energy Institute (NEI) 07-01, "Methodology for Development of Emergency Action Levels Advanced Passive Light Water Reactors," Revision 0, with no deviations. The EALs shall have been discussed and agreed upon with State and local officials.
  - 2. An assessment of emergency response staffing performed in accordance with NEI 10-05, "Assessment of On-Shift Emergency Response Organization Staffing and Capabilities," Revision 0.

**Mark-up of License Condition 2.D(12)(c) of Combined License  
Number NPF-94 for VCSNS Unit 3.**

(12) Site- and Unit-specific Conditions

- (a) Before commencing installation of individual piping segments and connected components in their final locations, SCE&G shall complete the as-designed pipe rupture hazards analysis for compartments (rooms) containing those segments in accordance with the criteria outlined in the AP1000 DCD, Rev. 19, Sections 3.6.1.3.2 and 3.6.2.5, and shall inform the Director of NRO, or the Director's designee, in writing, upon the completion of this analysis and the availability of the as-designed pipe rupture hazards analysis reports.
- (b) Before commencing installation of individual piping segments identified in AP1000 DCD, Rev. 19, Section 3.9.8.7, and connected components in their final locations in the facility, SCE&G shall complete the analysis of the as-designed individual piping segments and shall inform the Director of NRO, or the Director's designee, in writing, upon the completion of these analyses and the availability of the design reports for the selected piping packages.
- (c) No later than 180 days before initial fuel load, SCE&G shall submit to the Director of NRO, or the Director's designee, in writing:
  - 1. a A fully developed set of plant-specific emergency action levels (EALs) for VCSNS Unit 3 in accordance with Nuclear Energy Institute (NEI) 07-01, "Methodology for Development of Emergency Action Levels Advanced Passive Light Water Reactors," Revision 0, with no deviations. The EALs shall have been discussed and agreed upon with State and local officials.
  - 2. An assessment of emergency response staffing performed in accordance with NEI 10-05, "Assessment of On-Shift Emergency Response Organization Staffing and Capabilities," Revision 0.

**South Carolina Electric & Gas Company**

**NND-13-0637**

**Enclosure 4**

**Virgil C. Summer Nuclear Station Units 2&3**

**Final Rule Items Requiring No  
Changes to the Virgil C. Summer Nuclear  
Station Units 2&3 Emergency Plan**

**(LAR 13-26)**

On November 23, 2011 the Nuclear Regulatory Commission (NRC) published the Final Rule associated with Emergency Planning and Preparedness in the Federal Register (76FR72560) titled "Enhancements to Emergency Preparedness Regulations." The Final Rule added some new regulations to 10 CFR 50, Appendix E, 10 CFR 50.47(b) and 10 CFR 50.54(q) and modified some existing regulations. Those Final Rule changes that do not require a revision to the Virgil C. Summer Nuclear Station (VCSNS) Units 2&3 Emergency Plan or combined operating licenses (COL) to demonstrate compliance with the requirements added in the Final Rule are presented in this enclosure. Those Final Rule changes that do require a revision of the VCSNS Units 2&3 Emergency Plan or the respective combined licenses to demonstrate compliance with the requirements added in the Final Rule are presented in Enclosure 1.

1. Emergency Action Levels for Hostile Action:

The in 10 CFR 50, Appendix E, section IV.B, the Final Rule requires that licensees develop and implement emergency action levels (EALs) that include hostile actions.

The VCSNS Units 2&3 COLs each currently contain a license condition addressing the requirements in this section of the Final Rule. VCSNS Units 2&3 License Condition 2.D(12)(c) requires that SCE&G submit a fully developed set of plant-specific EALs, developed in accordance with NEI 07-01 "Methodology for Development of Emergency Action Levels Advanced Passive Light Water Reactors", to the Director of NRO no later than 180 days before initial fuel load. In addition the EALs shall have been discussed and agreed upon with State and local officials.

When South Carolina Electric & Gas Company (SCE&G) develops the required EALs, which will include hostile actions, and submits them in accordance with the VCSNS Units 2&3 license condition as described above, the VCSNS Units 2&3 Emergency Plan will be in compliance with 10 CFR 50, Appendix E, and 10 CFR 50.47(b). Compliance with this section of the Final Rule does not require a change to the VCSNS Units 2&3 Emergency Plan or the COLs.

2. Emergency Response Organization Augmentation and Alternative Facilities:

In the Final Rule the NRC re-designates the former language of Appendix E, section IV.E.8 as section IV.E.8.a and adds new sections IV.E.8.b, IV.E.8.c, IV.E.8.d, and IV.E.8.e.

10 CFR 50, Appendix E, section IV.E.8.a in the Final Rule adds the requirement that nuclear power reactor licensees must provide an Operations Support Center (OSC).

Section H of the VCSNS Units 2&3 Emergency Plan indicates that the Licensee has established one OSC in each unit. Section 4.1.B of Annex 2 in the Emergency Plan identifies that the Unit 2 OSC is located in the Control Support Area in the Annex Building on 417'-6" elevation and is separated from the Control Room. Section 4.1.A of Annex 3 in the Emergency Plan identifies that the Unit 3 OSC is located in the Control Support Area in the Annex Building on the 417'-6" elevation and is also separate from the Control Room. Both OSCs fully comply with NUREG-0696 "Functional Criteria for Emergency Response Facilities" and have location related Inspections, Tests, Analyses and Acceptance Criteria, (ITAAC) number C.3.8.01.05.01.06 to confirm that there is an

OSC located inside the Unit, and that it is separate from the Control Room and within the Protected Area.

10 CFR 50, Appendix E, section IV.E.8.c in the Final Rule provides performance based criteria applicable to all EOFs. These functions are addressed in Final Rule issue number 7 in Enclosure 3 of this letter as VCSNS Units 2&3 compliance with this regulation did not require a change to the VCSNS Units 2&3 Emergency Plan.

Section IV.E.8.d in the Final Rule requires licensees to provide an alternate facility that would be accessible even if the site is under threat of or experiencing hostile action to function as a staging area for augmentation of emergency response staff and collectively having the following characteristics: the capability for communications with the EOF, control room, and plant security; the capability to perform offsite notifications; and the capability for engineering assessment activities, including damage control team planning and preparation, for use when onsite emergency facilities cannot be safely accessed during hostile action.

Section B.5.a of the VCSNS Units 2&3 Emergency Plan identifies that, for security-related events that would prevent the emergency responders from reaching the site, the augmented TSC, OSC, and Control Room responders would be directed to respond to the EOF or another designated offsite location. TSC/OSC/Control Room staffs will provide any possible assistance from this offsite staging area until such time as site access is restored. In addition, the EOF meets the functional requirements of an alternate facility identified in section IV.E.8.d as described in section H.2 of the Emergency Plan.

Section IV.E.8.e in the Final Rule states that a licensee shall not be subject to the requirements of paragraph 8.b of 10 CFR 50, Appendix E, section IV.E, for an existing emergency operations facility approved as of December 23, 2011. This regulation is not applicable to VCSNS Units 2&3 since the distance criteria provided in paragraph 8.b are met with the current location of the EOF as identified in section H.2 of the VCSNS Units 2&3 Emergency Plan.

The VCSNS Units 2&3 Emergency Plan addresses the Final Rule requirements in 10 CFR 50, Appendix E, section IV.E.8.a-e above. The details demonstrate that the VCSNS Units 2&3 Emergency Plan complies with 10 CFR 50, Appendix E and 10 CFR 50.47(b) with respect to these issues.

3. Licensee Coordination with Offsite Response Organizations During Hostile Action:

The Final Rule, in Part 50, Appendix E, section IV.A.7, adds a requirement to ensure that the Licensee's Emergency Plan identifies and describes the assistance expected from appropriate state, local, and federal agencies including responsibilities for coping with emergencies due to hostile action at the site.

Section A.3 of the VCSNS Units 2&3 Emergency Plan addresses the agreements between the station and Offsite Response Organizations (OROs). It indicates that written agreements exist between the Licensee and OROs and they identify the emergency measures to be provided, the mutually accepted criteria for implementation,

and the arrangements for exchange of information. A list of Letters of Agreement is provided in Appendix 2 of the Emergency Plan, while the actual letters are maintained on file at the station.

Because VCSNS has established Letters of Agreement with OROs that describe the assistance provided to the station in the event of hostile action, and the list of those OROs appears in an Appendix of the Emergency Plan, the plan complies with 10 CFR 50, Appendix E and 10 CFR 50.47(b) with respect to this issue. Compliance with this section of the Final Rule did not require a change to the VCSNS Units 2&3 Emergency Plan.

4. Protection for Onsite Personnel:

In the Final Rule, the NRC added section IV.I to Appendix E which requires nuclear power reactor Licensees to provide an expanded range of protective measures for onsite personnel that are appropriate for protection against hostile action and ensure the continued ability of the Licensee to safely shut down the reactor and perform the functions of the Licensee's emergency plan. This new requirement does not direct any specific actions, but will allow licensees flexibility to determine the most effective protective measures for onsite personnel protection on a site-specific basis.

Section 5.1 of Annexes 2 and 3, for Units 2&3 respectively, of the VCSNS Units 2&3 Emergency Plan identifies appropriate protective action instructions that will be provided to personnel from the Control Room or the TSC during emergencies, which may include hostile action. Protective actions for site personnel include taking immediate cover, assembly, evacuation of an area, or the site. Protective actions will be issued by themselves or in combination based on the health and safety of site personnel. "Take immediate cover" may be used in a security threat situation where there is little or no time to relocate personnel or in conjunction with a protective action to evacuate the Protected Area.

In addition, VCSNS station procedure EPP-027 "Hostile Action" describes the method for plant operators to communicate specific instructions to station personnel, and the content of those instructions, during a hostile action. The procedure also provides predetermined instructions that are to be provided to site personnel by plant operators.

Because the VCSNS Units 2&3 Emergency Plan provides protective measures for personnel during a hostile action, and additional details about those actions are described in station implementing procedure EPP-027, the Emergency Plan complies with 10 CFR 50, Appendix E, and 10 CFR 50.47(b) with respect to this issue. Compliance with this section of the Final Rule did not require a change to the VCSNS Units 2&3 Emergency Plan.

5. Backup Means for Alert and Notification System:

In the Final Rule, the NRC has amended Section IV.D.3 of Appendix E to require that the public alert and notification system required by this section additionally has backup methods for both the alert and notification functions without specifying which backup measures should be used.

The backup method of alerting and notification must be capable of providing warning signals and instructional messages to the population in the entire plume exposure pathway EPZ when the primary Alert and Notification System (ANS) is unavailable during an emergency (i.e., the primary ANS cannot alert or notify all or portions of the plume exposure pathway EPZ population). The new requirement for a backup method applies to both the alerting function and notification function of the FEMA approved ANS.

For nuclear power plant sites that already have provisions for ANS backup means in FEMA approved ANS designs, licensees and offsite officials will need to confirm that the backup methods meet the Final Rule requirements and submit revised ANS designs for FEMA approval if changes were deemed necessary. New section IV.D.4 in Appendix E to 10 CFR Part 50 sets forth the deadlines for these implementation phases.

Section E.6 of the VCSNS Units 2&3 Emergency Plan addresses the backup ANS system. It identifies that upon failure of part or all of the Alert Notification System, the State of SC will direct notification methods in accordance with their plan.

FEMA, in the Department of Homeland Security, has issued a letter to the South Carolina Emergency Management Division, dated November 28, 2012, indicating that the VCSNS backup ANS was approved and implemented before December 23, 2011.

Because the South Carolina Emergency Management Division has received this letter from the Department of Homeland Security, FEMA, indicating that the backup VCSNS Alert and Notification system was approved and implemented, the requirements of 10 CFR 50 Appendix E and 10 CFR 50.47(b) are met. Compliance with this section of the Final Rule did not require a change to the VCSNS Units 2&3 Emergency Plan.

6. Emergency Declaration Timeliness:

In the Final Rule, the NRC has amended Part 50, Appendix E, section IV.C, to add a capability criterion, specifying that nuclear power reactor licensees have and maintain the capability to assess, classify, and declare an emergency condition within 15 minutes after the availability of indications to plant operators that an emergency action level has been exceeded and to promptly declare the emergency condition upon identification of the appropriate emergency classification level (ECL).

Section B.1 of the VCSNS Units 2&3 Emergency Plan identifies that the initial phases of an emergency situation at VCSNS will most likely involve a relatively small number of individuals. These individuals must be capable of (1) determining that an emergency exists, (2) providing initial classification and assessment, (3) promptly notifying offsite authorities and individuals in the emergency organization, and (4) making protective action recommendations (PAR) as needed.

The same section of the Emergency Plan identifies the Shift Supervisor as having the responsibility and the authority to declare an emergency. Upon declaration, that individual becomes the Interim Emergency Director (IED). In that role, the IED will initiate the appropriate immediate action in accordance with written procedures, mitigate the consequences of the emergency, activate the full ERO at an Alert or higher classification, and notify offsite support and government agencies, as appropriate.

VCSNS Units 2&3 Emergency Plan Procedure EPP-001 "Activation and Implementation of Emergency Plan" indicates in section 5.2 that the IED is responsible to determine the EAL by comparing verified plant parameters or conditions to the initiating condition for each emergency action level (EAL) within 15 minutes. Within this period, the IED declares the appropriate EAL classification (Unusual Event, Alert, Site Area Emergency, or General Emergency) and performs additional actions in accordance with the Emergency Operating Procedures (EOP) and the appropriate Emergency Plan Procedures (EPP).

Emergency Plan Implementing Procedures, which must be submitted in accordance with ITAAC C.3.8.01.09.01 to the NRC for review 180 days prior to fuel load, will detail the requirement that an emergency classification be made within 15 minutes of indications to plant operators that an emergency action level has been exceeded. A demonstration of this capability will be a part of the full participation exercise conducted prior to fuel load and the results verified in ITAAC C3.8.01.08.01.01.

Because section B.1 of the Emergency Plan indicates that the shift Supervisor has the authority and responsibility to declare an emergency classification, and that Emergency Plan Implementing Procedures require that a declaration be made within 15 minutes of exceeding an emergency action level, the VCSNS Units 2&3 Emergency Plan meets the requirements of 10 CFR 50 Appendix E and 10 CFR 50.47(b). Compliance with this section of the Final Rule did not require a change to the VCSNS Units 2&3 Emergency Plan.

7. Emergency Operations Facility Performance Based Approach:

In the Final Rule, the NRC provided criteria in section IV.E.8, of Appendix E, regarding EOF distance from a nuclear power reactor site and for a performance based approach for EOFs. The criteria specify that the EOF meet certain functional requirements rather than being located within a requisite distance from the site.

As described in Final Rule issue number two in Enclosure 1, the VCSNS Units 2&3 Emergency Plan indicates in section H.2 that the EOF is located greater than 10 miles and less than 25 miles straight line distance from the station TSC. This location meets the requirements of 10 CFR 50, Appendix E, section IV.E.8.b and exempts VCSNS from any requirements for an alternate facility due to an EOF being less than 10 miles or greater than 25 miles from the site.

In addition to distance criteria, the Final Rule included requirements in section IV.E.8.c for a performance base approach to the capabilities of all EOFs. The functions that an EOF must address include the following:

- (1) The capability for obtaining and displaying plant data and radiological information for each reactor at a nuclear power reactor site and for each nuclear power reactor site that the facility serves;

The VCSNS EOF serves only a single nuclear power reactor site. Section H.2 of the VCSNS Units 2&3 Emergency Plan indicates that the functional capabilities of the EOF meet the criteria of NUREG-0696, "Functional Criteria for Emergency Response Facilities" regarding location, structure, habitability, size, communications,

instrumentation, data system equipment, power supplies, technical data, records availability, and management.”

The design of the station’s EOF is included in the scope of the AP1000 Human Factors Engineering Program as identified in UFSAR section 18.2.1.3 and is in accordance with Westinghouse document APP-GW-GLR-136, “AP1000 Human Factors Program Implementation for the Emergency Operations Facility and Technical Support Center.” This document captures the method by which the AP1000 Human Factors Engineering Program Plan will be applied to TSCs and EOFs that support an AP1000 Plant.

Emergency Plan implementing procedures (EPIPs) will address the station change from a single unit to a multi unit site with respect to data collected and displayed in the EOF by making singular references such as “plant data” into plural references. In appendix C of the COL, ITAAC number C3.8.01.09.01 requires the Licensee to submit detailed implementing procedures for the onsite Emergency Plan to the NRC no less than 180 days prior to fuel load.

- (2) The capability to analyze plant technical information and provide technical briefings on event conditions and prognosis to licensee and offsite response organizations for each reactor at a nuclear power reactor site and for each nuclear power reactor site that the facility serves;

Section B.5.c of the VCSNS Units 2&3 Emergency Plan identifies a sub-group of the Emergency Response Organization (ERO) called the Emergency Public Information Organization (EPIO). This sub-group is dedicated to the dissemination of information regarding a station or plant emergency. The EPIO consists of corporate and station personnel who are involved with emergency response efforts necessary to coordinate VCSNS public notices with offsite agency public information updates. This organization operates out of the Joint Information Center (JIC) which adjoins the EOF.

As identified in section B.5.c of the Emergency Plan, The EPIO personnel include a Company Spokesperson that directs EPIO, coordinates with the other responders, and provides news information to the media. In addition the EPIO includes two Technical Assistants (one from each of the site’s protected areas) responsible for obtaining technical and plant status information for use in news releases and media briefings, and supports discussions regarding the technical issues during the emergency, and a Public Information Liaison coordinating the flow of information between the EOF and JIC. The structure of the EPIO organization can be seen in figure B-1.d of Emergency Plan.

Section G.3.a.2 of the Emergency plan describes the facility, identified as the JIC, established for the media personnel to gather during an emergency and to receive approved news releases for dissemination to the public. The JIC is equipped with appropriate seating, lighting, and visual aids to allow for public announcements and briefings to be given to the news media. News releases are coordinated between the EOF and JIC personnel and state and/or federal representatives in the JIC. Public information personnel operate from the EOF and the JIC, which is under the direction of the Company Spokesperson and functions as the single point of contact to interface with federal, state, and local authorities who are responsible for disseminating information to the public. The JIC also provides work space and phones for public information personnel from the state, counties, NRC, FEMA, and industry-related organizations

ITAAC C.3.8.01.04.01 ensures that the Licensee has provided has provided space which may be used for a limited number of the news media in the Joint Information Center. This space provides the needed equipment per approved administrative procedures.

- (3) The capability to support response to events occurring simultaneously at more than one nuclear power reactor site if the emergency operations facility serves more than one site;

The VCSNS EOF only serves a single site. VCSNS is currently is a single unit site that will become a multi-unit site when Unit 2 loads fuel in September 2016 according to the current construction schedule, but there are no other sites served by the EOF.

Section IV.E.8.d in the Final Rule requires nuclear power reactor licensees to identify an alternative facility (or facilities) that would be accessible even if the site is under threat of or experiencing hostile action, to function as a staging area for augmentation of ERO staff during hostile action to minimize delays in emergency response and provide for a swift, coordinated augmented response.

Section B.5.a of the VCSNS Units 2&3 Emergency Plan identifies that for security-related events that would prevent the emergency responders from reaching the site, the augmented TSC, OSC, and Control Room responders would be directed to respond to the EOF or another designated offsite location. TSC/OSC/Control Room staff will provide any possible assistance from this offsite staging area until such time as site access is restored.

Because the VCSNS Units 2&3 Emergency Plan provides for an OSC, an EOF that complies with the distance criteria in the Final Rule, an EOF that meets all of the performance based criteria applicable to all EOFs, and also identifies an alternate location for staging of the augmented ERO, the Licensee's Emergency Plan complies with 10 CFR 50, Appendix E and 10 CFR 50.47(b) with respect to these issues.

#### 8. Amended Emergency Plan Change Process:

In the Final Rule the NRC amended the Emergency Plan change process by specifying that the license amendment process of 10 CFR 50.90 is to be used when submitting a proposed emergency plan change that the licensee has determined constitutes a reduction in effectiveness of the plan.

Changes to the VCSNS Units 2&3 Emergency Plan are made without NRC approval only if such changes do not decrease the effectiveness of the Plan, in accordance with 10 CFR 50.54(q) and station procedure SAP-0127 "Emergency Preparedness", and the Plan, as changed, continues to meet the standards of 10 CFR 50.47(b) and the requirements of 10 CFR 50, Appendix E. Proposed changes that reduce or have a potential to reduce the effectiveness of the approved Plan are not implemented without prior approval by the NRC through the license amendment process, in accordance with station procedure SAP-0127 and 10 CFR 50.54(q).

In the Final Rule, a licensee under Part 52, after the Commission makes the finding under 10 CFR 52.103(g), is required by 10 CFR 50.54(q)(2) to follow and maintain the effectiveness of its emergency plan.

The VCSNS Units 2&3 Emergency Plan, in section P.4, affirms that plan effectiveness is maintained. The Emergency Plan, the Appendices and Unit Annexes, and supporting agreements are reviewed on an annual basis. The annual Emergency Plan review/update includes required changes, as directed by management, and those changes identified during audits, assessments, training, drills, and exercises. The Manager, Emergency Planning is responsible for determining which recommended changes are incorporated into an Emergency Plan or emergency procedure revision. The Emergency Plan and the Appendices and Unit Annexes shall be revised as needed, in accordance with SAP-0127 and 10 CFR 50.54(q). The most current approved revisions shall remain in effect so long as they are verified as current.

Section 50.54(q)(3) of the Final Rule grants authority to the holder of a license to make changes to its emergency plan without prior NRC approval only if an analysis demonstrates that the changes do not reduce the effectiveness of the plan, and it would continue to meet the requirements in 10 CFR 50, Appendix E, and 10 CFR 50.47(b) after the change is implemented.

Section P.4 of the VCSNS Units 2&3 Emergency Plan addresses this requirement of the Final Rule. Changes to the Emergency Plan can be made without NRC approval only if such changes are determined not to reduce the effectiveness of the Plan in accordance with 10 CFR 50.54(q) and station procedure SAP-0127. In addition, the procedure specifies that the Emergency Plan as changed must continue to meet the standards of 10 CFR 50.47(b) and the requirements of 10 CFR 50, Appendix E. Station procedure SAP-0127 requires an evaluation of the proposed change to determine if it constitutes a reduction in effectiveness of the Emergency Plan. If the proposed change is determined through the SAP-0127 not to be a reduction in effectiveness, the procedure directs the user to report the change to the NRC within 30 days after it is made, in accordance with procedure NND-LIC-0005 and 10 CFR 50.54(q)(5).

The Final Rule, in § 50.54(q)(4), defines the process by which a licensee requests prior approval of a change to the Emergency Plan that the licensee has determined constitutes a reduction in effectiveness of the plan. Pursuant to § 50.54(q)(4), the license amendment request must include all emergency plan pages affected by the change, a forwarding letter identifying the change, the reason for the change, and the basis for concluding that the licensee's emergency plan, as revised, will continue to meet the requirements of Appendix E, and for nuclear power reactor licensees, the planning standards of § 50.47(b).

In accordance with section P.4 of the VCSNS Units 2&3 Emergency Plan, when the Licensee proposes a change to the Emergency Plan that involves a reduction in effectiveness of the plan, a license amendment request is required to obtain prior NRC approval. When the individual proposing the change makes the determination that a license amendment request is required, the controlling procedure, SAP-0127, refers the user to procedure NND-AP-0202, "License Amendment Requests". In following this procedure to process the amendment request, an individual making the request will

meet the requirements for license amendment request content identified in 10 CFR 50.54(q)(4).

10 CFR 50.54(q)(5) in the Final Rule requires that licensees retain a record of all changes to the Emergency Plan made without prior NRC approval for a period of three years from the date of change. This section also requires the Licensee to submit, in accordance with 10 CFR 50.4, a report of each such change, including a summary description of its evaluation, within 30 days of the change being put into effect.

Section P of the VCSNS Units 2&3 Emergency Plan addresses changes to the plan. For those changes determined, through a required SAP-0127 evaluation, not to be a reduction in effectiveness, section 6.0 "Record Retention" in enclosure 6.3 of the procedure requires that the completed screens and evaluations conducted for such changes made without prior NRC approval are retained for a period of 3 years from the date of the change. As stated above, changes made to the Emergency Plan without prior NRC approval are reported to the NRC within 30 days after the change is made, in accordance with NND-LIC-0005 and 10 CFR 50.54(q)(5).

10 CFR 50.54(q)(6) in the Final Rule requires a licensee of a nuclear power reactor to retain the emergency plan and each change for which prior NRC approval was obtained under 10 CFR 50.54(q)(4) as a record until the Commission terminates the license for the nuclear power reactor.

Section P of the VCSNS Units 2&3 Emergency Plan addresses changes to the plan. In enclosure 6.3 of station procedure SAP-0127, in section 6.0 "Record Retention", both the Emergency Plan and changes to the plan for which prior NRC approval is required and obtained are required to be kept as a permanent records until the Commission terminates the plant license.

The VCSNS Units 2&3 Emergency Plan addresses changes to itself in a high level fashion in section P. The details of how a proposed change to the Emergency Plan is determined to be, or not to be, a reduction in effectiveness, how the change is evaluated, documented, recorded and reported to the NRC is addressed in station procedure SAP-0127 "Emergency Preparedness". In appendix C of the COL, ITAAC number C3.8.01.09.01 requires the Licensee to submit detailed implementing procedures for the onsite Emergency Plan to the NRC no less than 180 days prior to fuel load. Given the content of the VCSNS Units 2&3 Emergency Plan and the implementing procedures, the VCSNS Units 2&3 Emergency Plan meets the requirements for changes to the emergency plan identified in 10 CFR 50 Appendix E and 10 CFR 50.47(b) as amended in the Final Rule. Compliance with this section of the Final Rule did not require a change to the VCSNS Units 2&3 Emergency Plan.

9. Challenging Drills and Exercises:

The NRC has added a new requirement through the Final Rule to 10 CFR 50, Appendix E, section IV.F.2.a to require nuclear power reactor licensees to submit, for NRC review, scenarios for full participation exercises required by Appendix E, section IV.F.2.a. This requirement enables the NRC to ensure that licensees implement in their exercise scenarios the new requirements of sections IV.F.2.i and IV.F.2.j of Appendix E, including hostile action and a variety of challenges to reduce preconditioning of responders.

Section N.1.a of the VCSNS Units 2&3 Emergency Plan requires the Licensee to submit full participation exercise scenarios for NRC review in a timely fashion.

In addition, VCSNS Units 2&3 Emergency Plan Implementing Procedure EPP-105 "Conduct of Drills and Exercises" includes specific instructions in section 4.13 indicating that the Licensee shall submit exercise scenarios to the NRC for review 60 days prior to use in the exercise.

The NRC has also revised 10 CFR 50, Appendix E, section IV.F.2.b to require nuclear power reactor licensees to submit scenarios for their onsite biennial exercises under 10 CFR 50.4, and that they be submitted 60 days prior to use.

As described above, the VCSNS Units 2&3 Emergency Plan identifies that the Licensee shall submit exercise scenarios "in a timely fashion" to the NRC for review. In addition, in implementing procedure EPP-105 "Conduct of Drills and Exercises", section 4.13, scenarios are to be submitted to the NRC 60 days prior to use. This guidance also applies to biennial exercises conducted by the Licensee pursuant to 10 CFR 50, Appendix E, section IV.F.2.b.

In the Final Rule, the NRC has expanded the list of principal functional areas of emergency response, for inclusion in drills, in paragraph IV.F.2.b of Appendix E to include event classification, notification of offsite authorities, assessment of the impact of onsite and offsite radiological releases, and development of protective action recommendations.

The VCSNS Units 2&3 Emergency Plan addresses drill content in section N. This section explicitly identifies that a drill scenario package contains the objectives for a given drill. However, the Emergency Plan does not identify details of drill content. Station procedure EPP-105 "Conduct of Drills and Exercises", in section 4.11, specifically addresses the requirements of 10 CFR 50, Appendix E, section IV.F.2.b, as revised in the Final Rule, by requiring that the content of drills align exactly with the principal functional areas of emergency response identified in section IV.F.2.b.

In the Final Rule the NRC has also added section IV.F.2.c.(4) and (5) to clarify requirements for nuclear power reactor licensees at co-located sites to conduct hostile action exercises of its emergency plan in each exercise cycle, and to participate in an off-site biennial full or partial participation hostile action exercise in alternating exercise cycles.

VCSNS is not a co-located site, and does not meet the criteria for a co-located site provided in 10 CFR 50, Appendix E, section F.2.c, note 6. As a result, the change identified in this section due to the Final Rule does not apply to this VCSNS.

The NRC is amending section IV.F.2.f to add a second situation when remedial exercises are required. The Final Rule explains that remedial exercises will be required if the emergency plan is not satisfactorily tested during the biennial exercise, such that the NRC, in consultation with FEMA, cannot find reasonable assurance that adequate protective measures can be taken in response to an emergency or determine that key ERO skills have been maintained.

Section N of the VCSNS Units 2&3 Emergency Plan confirms that the drill and exercise program is designed to verify the adequacy of the Emergency Preparedness Program and to develop, maintain, and evaluate the capabilities of the ERO to respond to emergency conditions and safeguard the health and safety of station personnel and the general public. In addition, it identifies deficiencies in the Emergency Plan and its associated procedures, or in the training of personnel, and ensures that they are promptly corrected.

Pursuant to section N.1.a of the Emergency Plan, the Licensee, in the event of an inadequate demonstration of the offsite response during the biennial exercise, will participate and support the conduct of activities that are designed to address the deficient or weak demonstrations. Station procedure EPP-105 "Conduct of Drills and Exercises" provides more detailed information regarding the critique of drills and exercises and correction of deficiencies in them.

The NRC is also revising section IV.F.2.g to require licensees to correct any weaknesses or deficiencies identified during exercises, drills, or training. This change explicitly states the regulatory intent that licensees must formally critique performance opportunities that develop, maintain, or demonstrate key skills in exercises, drills, and training, and correct any weaknesses or deficiencies identified in a critique.

In sections N.4 and N.5 of the VCSNS Units 2&3 Emergency Plan, the Licensee identifies that critiques are performed after every drill and exercise. A formal written critique report is prepared by the Manager, Emergency Planning following a drill or exercise involving the evaluation of designated objectives or following the final simulator session with ERO participation. The report will evaluate the ability of the ERO to respond to a simulated emergency situation or sequence of events. The report will also contain corrective actions and recommendations for improvement.

Biennially, representatives from the NRC observe and evaluate the licensee's ability to conduct an adequate self-critical critique. For full offsite participation exercises, both the NRC and FEMA will observe, evaluate, and critique.

The critique and evaluation process is used to identify areas of the Emergency Preparedness Program that require improvement. The Manager, Emergency Planning is responsible for evaluation of recommendations and comments to determine which items will be incorporated into the program or require corrective actions, and for the scheduling, tracking, and evaluation of the resolution to the items.

Implementing procedure EPP-105 "Conduct of Drills and Exercises", in section 5.7 provides implementing details for critiques which occur after every drill and exercise as specified in the Emergency Plan sections N.4 and N.5.

Because the VCSNS Units 2&3 Emergency Plan and its implementing procedures has included provisions for submitting scenarios for full participation exercises to the NRC 60 days prior to use, completely incorporated the expanded list of emergency response functional areas added in the Final Rule, described how the emergency plan is tested and critiqued for effectiveness, indicated how to correct deficiencies in the plan or procedures, incorporated hostile actions as one of the minimum requirements for an

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exercise scenario and provided an opportunity for ERO personnel to demonstrate proficiency in the key skills needed to implement the principal emergency response functions identified in Appendix E, section IV.F.2.b, the plan complies with 10 CFR 50, Appendix E and 10 CFR 50.47(b). Compliance with this section of the Final Rule did not require a change to the VCSNS Units 2&3 Emergency Plan.

10. Removal of Completed One Time Requirements:

In this section of the Final Rule, the NRC is eliminating several regulatory provisions that required holders of licenses to take certain one-time actions to improve the state of EP following the Three Mile Island incident in 1979. These actions are complete and the requirements are no longer binding on any current licensee. No actions are required by VCSNS and compliance with this section of the Final Rule did not require a change to the VCSNS Units 2&3 Emergency Plan.