

Stephen A. Byrne  
Senior Vice President, Nuclear Operations  
803.345.4622



May 8, 2002  
RC-02-0092

Document Control Desk  
U. S. Nuclear Regulatory Commission  
Washington, DC 20555

ATTN: G. E. Edison

Gentlemen:

Subject: VIRGIL C. SUMMER NUCLEAR STATION  
DOCKET NO. 50/395  
OPERATING LICENSE NO. NPF-12  
LICENSE AMENDMENT REQUEST - LAR 02-1450  
CONTROL ROOM NORMAL AND EMERGENCY AIR HANDLING SYSTEM -  
EXCLUSION OF SPECIFICATION 3.0.4 REQUIREMENTS FROM TS 3/4.7.6 IN  
MODES 5 AND 6

Pursuant to 10 CFR 50.90, South Carolina Electric & Gas Company (SCE&G), acting for itself and as agent for South Carolina Public Service Authority, hereby requests an amendment to the Virgil C. Summer Nuclear Station (VCSNS) Technical Specifications (TS).

The proposed change will exclude the control room normal and emergency air handling system from the requirement to apply Specification 3.0.4 to actions required by LCO 3.7.6 in Modes 5 and 6. Pursuant to 10 CFR 50.91, the enclosed analyses provides a determination that the proposed Technical Specifications change poses no significant hazard as delineated by 10 CFR 50.92.

SCE&G requests approval of the proposed amendment by November 8, 2002.

If you have any questions or require additional information, please contact Mr. Melvin N. Browne at (803)-345-4141.

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

Very truly yours,

A handwritten signature in black ink, appearing to read "Stephen A. Byrne", written in a cursive style.

Stephen A. Byrne

JT/SAB/dr

A003

Enclosures:

Evaluation of the proposed change

Attachment(s): 3

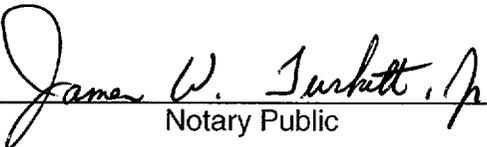
1. Proposed Technical Specification Change - Mark-up
2. Proposed Technical Specification Change - Retyped
3. List of Regulatory Commitments

c: N. O. Lorick  
N. S. Carns  
T. G. Eppink (w/o Attachments)  
R. J. White  
L. A. Reyes  
K. R. Cotton  
W. R. Higgins  
NRC Resident Inspector  
P. Ledbetter  
K. M. Sutton  
T. P. O'Kelley  
RTS (LAR 02-1450)  
File (813.20)  
DMS (RC-02-0092)

**STATE OF SOUTH CAROLINA** :  
: **TO WIT :**  
**COUNTY OF FAIRFIELD** :

I hereby certify that on the 8<sup>TH</sup> day of May 2002, before me, the subscriber, a Notary Public of the State of South Carolina personally appeared Stephen A. Byrne, being duly sworn, and states that he is Senior Vice President, Nuclear Operations of the South Carolina Electric & Gas Company, a corporation of the State of South Carolina, that he provides the foregoing response for the purposes therein set forth, that the statements made are true and correct to the best of his knowledge, information, and belief, and that he was authorized to provide the response on behalf of said Corporation.

**WITNESS** my Hand and Notarial Seal

  
Notary Public

My Commission Expires

OCTOBER 2, 2010  
Date

**Subject: LICENSE AMENDMENT REQUEST – LAR 02-1450  
CONTROL ROOM NORMAL AND EMERGENCY AIR HANDLING SYSTEM -  
EXCLUSION OF SPECIFICATION 3.0.4 REQUIREMENTS FROM TS 3/4.7.6 IN  
MODES 5 AND 6**

## **1.0 DESCRIPTION**

South Carolina Electric & Gas Company (SCE&G) proposes an amendment to revise the Virgil C. Summer Nuclear Station (VCSNS) Technical Specifications (TS) to revise Specification 3.7.6. The proposed change will exclude the control room normal and emergency air handling system from having to include Specification 3.0.4 requirements when applying the action requirements of LCO 3.7.6 in modes 5 and 6.

The change will allow operation in a manner that is already permitted by TS 3.7.6. For example, if one train of service water (i.e., a control room ventilation support system) became inoperable with the core defueled, core reload could commence and continue for seven days. After that time, the plant could continue operation in Mode 5 or 6 with one operable control room emergency air cleanup system in recirculation mode indefinitely. The exclusion of the requirements of Specification 3.0.4 is consistent with that of NUREG-1431, STANDARD TECHNICAL SPECIFICATIONS, WESTINGHOUSE PLANTS (STS).

## **2.0 PROPOSED CHANGE**

Specifically the proposed changes would revise the following:

2.1 TS 3.7.6 under MODES 5 and 6:

Add statement "c"; The provisions of Specification 3.0.4 are not applicable.

### **3.0 BACKGROUND**

Current Specification 3.7.6 Mode 5 and 6 action states that with one control room normal and emergency air handling system inoperable, restore the inoperable system to operable status within 7 days or initiate and maintain operation of the remaining operable control room normal and emergency air handling system in the recirculation mode, or, if both control room normal and emergency air handling systems are inoperable, or, if the remaining operable system that is on recirculation is not capable of being powered by an operable emergency power source, that all operations involving core alterations or positive reactivity changes must be suspended.

The proposed change is consistent with the requirements of the currently approved NUREG-1431 (STS) LCO 3.0.4 which states:

When an LCO is not met, entry into a mode or other specified condition in the Applicability shall not be made except when the associated actions to be entered permit continued operation in the mode or other specified condition in the Applicability for an unlimited period of time. This Specification shall not prevent changes in modes or other specified conditions in the Applicability that are required to comply with actions or that are part of a shutdown of the unit. Exceptions to this Specification are stated in the individual Specifications. LCO 3.0.4 is only applicable for entry into a mode or other specified condition in the Applicability in modes 1, 2, 3, and 4.

Since action "a" for modes 5 and 6 in the VCSNS TS allows unlimited operation with one operable control room emergency air cleanup system in recirculation and since the modes in question are specifically excluded from the STS 3.0.4, there is approved NRC precedence for this change.

The change will state that the requirements of Specification 3.0.4 are not applicable to Specification 3.7.6 in Modes 5 and 6.

### **4.0 TECHNICAL ANALYSIS**

The existing VCSNS TS apply a HOT STANDBY to COLD SHUTDOWN action when the control room normal and emergency air handling system is inoperable and not restored within the allowable outage time (AOT) of Specification 3.7.6. The current specification addresses actions to be taken during operations involving CORE ALTERATIONS or positive reactivity changes when AOTs associated with the control room normal and emergency air handling system are not met. However, no provision is made for the exclusion of the requirements of Specification 3.0.4. The exclusion of the requirements of Specification 3.0.4 is consistent with that of NUREG-1431.

The AOTs associated with the control room normal and emergency air handling system within NUREG-1431 are consistent with the current VCSNS specification. Within NUREG-1431, the provisions of Specification 3.0.4 are not applicable, allowing start of fuel handling activities if one control room normal and emergency air handling system is inoperable, assuming the

associated actions are being met. These actions are consistent with those normally associated with shutdown mode equipment operability and with the control room normal and emergency air handling system. Since action "a" for modes 5 and 6 in the VCSNS TS allows unlimited operation with one operable control room emergency air cleanup system in recirculation and since the modes in question are specifically excluded from the STS 3.0.4, there is approved NRC precedence for this change.

The proposed change has been evaluated in accordance with 10 CFR 50.91(a)(1) using criteria in 10 CFR 50.92(c) and it has been determined that this change involves no significant hazards considerations.

## **5.0 REGULATORY SAFETY ANALYSIS**

### **5.1 No Significant Hazards Consideration**

South Carolina Electric & Gas Company (SCE&G) has evaluated the proposed changes to the VCSNS TS described above against the significant Hazards Criteria of 10CFR50.92 and has determined that the changes do not involve any significant hazard. The following is provided in support of this conclusion.

1. Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

Response: No.

The proposed change to Technical Specification 3.7.6 does not contribute to the initiation of any accident previously evaluated. The actions within the VCSNS TS associated with the control room normal and emergency air handling system during shutdown (i.e., Modes 5, 6, and defueled) and during the handling of irradiated fuel does not require any physical modification to plant components or systems. Implementing the proposed action has no impact on the probability of an accident.

2. Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

Response: No.

The proposed change to Technical Specification 3.7.6 does not contribute to the initiation of any accident previously evaluated. The actions within the VCSNS TS associated with the control room normal and emergency air handling system during shutdown (i.e., Modes 5, 6, and defueled) and during the handling of irradiated fuel do not introduce any new accident initiator mechanisms. The exclusion of the provisions of Specification 3.0.4 requirements from Specification 3.7.6 Mode 5 and 6, action requirements does not cause the initiation of any

accident nor create any new credible limiting single failure nor result in any event previously deemed incredible being made credible. As such, it does not create the possibility of an accident different than any evaluated in the FSAR.

3. Does this change involve a significant reduction in margin of safety?

Response: No.

When invoked, the proposed change will allow operational transitions involving Modes 5 and 6 within the remedial measures currently defined in the specification, including the following when one train is inoperable:

- A 7-day AOT to restore an inoperable train to OPERABLE status.
- Operation of the OPERABLE control room emergency air cleanup system in the recirculation mode.

Although the overall reliability of the system is reduced because a single failure in the OPERABLE train could result in a loss of function, the 7-day AOT provides adequate margins of safety because of the low probability of a design basis accident (DBA) occurring during this time period and the ability of the remaining train to provide the required capability. Adequate margins of safety are also provided by the alternative action that places the unit in a protected condition because this ensures the remaining train is operating, that no failure preventing automatic actuation will occur, and that any active failure can be readily detected.

With two trains inoperable, action must be taken immediately to suspend activities that could result in a release of radioactivity that might enter the control room. This places the unit in a condition that minimizes accident risk. This does not preclude the movement of fuel to a safe position.

Given the degree of protection provided by the current specification, exclusion from of the provisions of Specification 3.0.4 is judged to not result in a significant reduction in the margin of safety as described in the bases of any Technical Specification.

Pursuant to 10 CFR 50.91, the preceding analyses provides a determination that the proposed Technical Specifications change poses no significant hazard as delineated by 10 CFR 50.92.

## 5.2 Applicable Regulatory Requirements/Criteria

Appendix A, "General Design Criteria for Nuclear Power Plants," to 10 CFR 50, "Domestic Licensing of Production and Utilization Facilities," establishes the principal design criteria for the design, fabrication, construction, testing, and performance requirements for structures, systems, and components important to safety.

General Design Criterion 19 (GDC-19), "Control Room," of Appendix A requires that a control room be provided from which actions can be taken to operate the nuclear reactor safely under normal operating conditions and maintain the reactor in a safe condition under accident conditions, including a loss-of-coolant accident (LOCA). Adequate radiation protection is to be provided to permit access and occupancy of the control room under accident conditions without personnel receiving radiation exposures in excess of specified values.

The proposed change does not violate any requirement or recommended method for assuring the operability of the control room normal and emergency air handling system and maintaining the plant design and licensing basis. The change provides an exclusion from the provisions of Specification 3.0.4 during Mode 5 and 6.

### 5.2.1 Regulations

The regulatory basis for TS 3.7.6, "Control Room Normal and Emergency Air Handling System," operability is to ensure that 1) the ambient temperature does not exceed the allowable temperature for continuous duty rating for the equipment and instrumentation cooled by this system and 2) the control room will remain habitable for operations personnel during and following all credible accident conditions. The operability of this system in conjunction with control room design provisions is based on limiting the radiation exposure to personnel occupying the control room to 5 rem or less whole body, or its equivalent. This limitation is consistent with the requirements of General Design Criterion 19 of Appendix "A", 10 CFR 50.

### 5.2.2 Design Bases (FSAR)

#### FSAR 3.1, Conformance with NRC General Design Criteria

Safe occupancy of the Control Room under normal, abnormal, and accident conditions is assured by the design. The Control Room is located in a Seismic Category I structure. Adequate shielding is provided to maintain tolerable radiation levels in the Control Room in the event of a design basis accident or postulated maximum hypothetical accident (MHA). Redundant equipment is provided in the Control Room Ventilation System which permits recirculation of

Control Room air through HEPA and charcoal filters. This equipment also permits control room air to be drawn from outside through roughing and HEPA filters and to be discharged outside or for the use of various combinations of outside and recirculated air. Radiation and smoke detectors are provided for the Control Room Ventilation System. Excessive concentrations of any one of these contaminants causes an alarm in the Control Room.

#### Regulatory Guide 1.52, "Design, Testing, and Maintenance Criteria for Engineered Safety Feature Atmospheric Cleanup System Air Filtration and Adsorption Units of Light-Water-Cooled Nuclear Power Plants

This guide presents methods acceptable to the NRC staff for implementing the Commission's regulations in Appendix A to 10 CFR 50 with regard to design, testing, and maintenance criteria for air filtration and adsorption units of engineered-safety-feature (ESF) atmospheric cleanup systems in light-water-cooled nuclear power plants.

#### Regulatory Guide 1.78, "Assumptions for Evaluating the Habitability of a Nuclear Power Plant Control Room During a Postulated Hazardous Chemical Release

This guide presents assumptions acceptable to the NRC staff for evaluation of chemical releases in the control room.

### 5.2.3 Approved Methodologies

Regulatory Guide 1.52, "Design, Testing, and Maintenance Criteria for Engineered Safety Feature Atmospheric Cleanup System Air Filtration and Adsorption Units of Light-Water-Cooled Nuclear Power Plants," describes methods acceptable to the NRC for determining control room normal and emergency air handling system performance.

### 5.2.4 Analysis

Analysis for the VCSNS control room normal and emergency air handling system is discussed in the VCSNS FSAR Sections 6, 9, 13, and 15. Safe occupancy of the Control Room under normal, abnormal, and accident conditions is assured by the design. The Control Room is located in a Seismic Category I structure. Adequate shielding is provided to maintain tolerable radiation levels in the Control Room in the event of a design basis accident or postulated maximum hypothetical accident (MHA). Redundant equipment is provided in the Control Room Ventilation System which permits recirculation of Control Room air through HEPA and charcoal filters. This equipment also permits control room air to be drawn from outside through roughing and HEPA filters and to be

discharged outside or for the use of various combinations of outside and recirculated air. Radiation and smoke detectors are provided for the Control Room Ventilation System. Excessive concentrations of any one of these contaminants cause an alarm in the Control Room.

The control room normal and emergency air handling system analysis presented in FSAR Chapter 15 conforms to General Design Criterion 19 of Appendix A of 10 CFR 50.

#### 5.2.5 Conclusion

The technical analysis performed by SCE&G demonstrates that the proposed amendment has no impact on the control room normal and emergency air handling system performance in Modes 5, 6. Therefore, the proposed License amendment is in compliance with GDC 19.

Since action "a" for modes 5 and 6 in the VCSNS TS allows unlimited operation with one operable control room emergency air cleanup system in recirculation and since the modes in question are specifically excluded from the STS 3.0.4, there is approved NRC precedence for this change.

## 6.0 ENVIRONMENTAL CONSIDERATION

SCE&G has determined that the proposed amendment would change requirements with respect to the installation or use of a facility component located within the restricted area, as defined in 10 CFR 20 (Reference 3), or would change an inspection or surveillance requirement. SCE&G has evaluated the proposed change and has determined that the change does not involve, (i) a significant hazards consideration, (ii) a significant change in the types of or significant increase in the amounts of any effluents that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. As discussed above, the proposed changes do not involve a significant hazards consideration. Accordingly, the proposed change meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51 (Reference 4), specifically 10 CFR 51.22(c)(9). Therefore, pursuant 10 CFR 51.22(b), an environmental assessment of the proposed change is not required.

## 7.0 REFERENCES

1. FSAR Section(s) 1.2.3, 6.4, 9.4.1, and 15
2. 10 CFR 50, Appendix A, GDC 19
3. 10 CFR 20
4. 10 CFR 51

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ATTACHMENT 1

PROPOSED TECHNICAL SPECIFICATION CHANGES (MARK-UP)

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Attachment to License Amendment No. XXX  
To Facility Operating License No. NPF-12  
Docket No. 50-395

Replace the following pages of the Appendix A Technical Specifications with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Remove Pages

3/4 7-14

Insert Pages

3/4 7-14

**SCE&G -- EXPLANATION OF CHANGES**

<u>Page</u>	<u>Affected Section</u>	<u>Bar #</u>	<u>Description of Change</u>	<u>Reason for Change</u>
3/4 7-14	3.7.6	1	Add – c. The provisions of Specification 3.0.4 are not applicable.	As previously approved in NUREG-1431, the mode restriction imposed by Specification 3.0.4 is not warranted since the remedial measures currently defined in Specification 3.7.6 provide adequate protection for plant operation in Modes 5 and 6.

PLANT SYSTEMS

3/4.7.6 CONTROL ROOM NORMAL AND EMERGENCY AIR HANDLING SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.6 Two independent control room normal and emergency air handling systems shall be OPERABLE.

APPLICABILITY: ALL MODES

ACTION:

MODES 1, 2, 3 and 4:

With one control room normal and emergency air handling system inoperable, restore the inoperable system to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

MODES 5 and 6:

- a. With one control room normal and emergency air handling system inoperable, restore the inoperable system to OPERABLE status within 7 days or initiate and maintain operation of the remaining OPERABLE control room emergency air cleanup system in the recirculation mode.
- b. With both control room emergency air cleanup systems inoperable, or with the OPERABLE control room emergency air cleanup system, required to be in the recirculation mode by ACTION (a), not capable of being powered by an OPERABLE emergency power source, suspend all operations involving CORE ALTERATIONS or positive reactivity changes.
- c. The provisions of Specification 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.7.6 Each control room normal and emergency air handling system shall be demonstrated OPERABLE:

- a. At least once per 12 hours by verifying that the control room air temperature is less than or equal to 85°F.
- b. At least once per 31 days on a STAGGERED TEST BASIS by initiating, from the control room, flow through the HEPA filters and charcoal adsorbers and verifying that the system operates for at least 15 minutes.
- c. At least once per 18 months or (1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (2) following painting, fire or chemical release in any ventilation zone communicating with the system by:

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**ATTACHMENT 2**

**PROPOSED TECHNICAL SPECIFICATION CHANGES (RETYPE)**

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## PLANT SYSTEMS

### 3/4.7.6 CONTROL ROOM NORMAL AND EMERGENCY AIR HANDLING SYSTEM

#### LIMITING CONDITION FOR OPERATION

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APPLICABILITY: ALL MODES

ACTION:

MODES 1, 2, 3 and 4:

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MODES 5 and 6:

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- b. With both control room emergency air cleanup systems inoperable, or with the OPERABLE control room emergency air cleanup system, required to be in the recirculation mode by ACTION (a), not capable of being powered by an OPERABLE emergency power source, suspend all operations involving CORE ALTERATIONS or positive reactivity changes.
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- c. At least once per 18 months or (1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (2) following painting, fire or chemical release in any ventilation zone communicating with the system by:

**ATTACHMENT 3**

**LIST OF REGULATORY COMMITMENTS**

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There are no regulatory commitments created due to this License Amendment Request. The proposed change precludes the implementation of actions which are not applicable to the operational mode being addressed.