



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

October 23, 2008

Mr. Jeffrey B. Archie
Vice President, Nuclear Operations
South Carolina Electric & Gas Company
Virgil C. Summer Nuclear Station
Post Office Box 88
Jenkinsville, SC 29065

SUBJECT: VIRGIL C. SUMMER NUCLEAR STATION, UNIT NO. 1, ISSUANCE OF
AMENDMENT REGARDING "CONTROL ROOM HABITABILITY"
(TAC NO. MD7907)

Dear Mr. Archie:

The U.S. Nuclear Regulatory Commission (NRC) has issued the enclosed Amendment No. 180 to Renewed Facility Operating License No. NPF-12 for the Virgil C. Summer Nuclear Station, Unit No. 1. The amendment changes the renewed operating license Appendix A Technical Specifications (TS) and the Appendix C Additional Conditions in response to your letters dated January 17, and August 15, 2008 (Agencywide Document and Management System (ADAMS) Accession No. ML080220067 and ML082320059, respectively). The proposed amendment would revise Appendices A and C to adopt TSTF-448, Revision 3, "Control Room Habitability." This improvement was made available by the NRC on January 17, 2007, (72 FR 2022) as part of the consolidated line item improvement process (CLIP). The amendment also includes a Ventilation Filter Testing Program (VFTP) and aligns the TS surveillance requirements to the VFTP.

A copy of the related Safety Evaluation is enclosed. Notice of Issuance will be included in the Commission's next Biweekly *Federal Register* notice.

Sincerely,

A handwritten signature in cursive script that reads "Robert E. Martin".

Robert E. Martin, Senior Project Manager
Plant Licensing Branch II-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-395

Enclosures:

1. Amendment No. 180 to NPF-12
2. Safety Evaluation

cc w/enclosures: Distribution via ListServ

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 Vice President, Nuclear Operations
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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SOUTH CAROLINA ELECTRIC & GAS COMPANY

SOUTH CAROLINA PUBLIC SERVICE AUTHORITY

DOCKET NO. 50-395

VIRGIL C. SUMMER NUCLEAR STATION, UNIT NO. 1

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 180
Renewed License No. NPF-12

1. The U.S. Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by South Carolina Electric & Gas Company (the licensee), dated January 17, 2008, as supplemented August 15, 2008, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Appendix A Technical Specifications, and the Appendix C Additional Conditions, as indicated in the attachment to this license amendment; and paragraphs 2.C.(2) and 2.J of Renewed Facility Operating License No. NPF-12 are hereby amended to read as follows:

2.C(2) Technical Specifications and Environmental Protection Plan

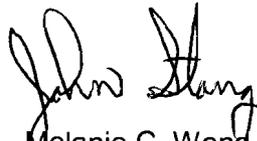
The Technical Specifications contained in Appendix A, as revised through Amendment No. 180, and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the license. South Carolina Electric & Gas Company shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

2.J Additional License Conditions

The Additional Conditions contained in Appendix C, as revised through Amendment No. 180, are hereby incorporated into this renewed license. South Carolina Electric & Gas Company shall operate the facility in accordance with the Additional Conditions.

3. This amendment is effective as of its date of issuance and shall be implemented within 90 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Melanie C. Wong, Chief For
Plant Licensing Branch II-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachments: Changes to the Technical
Specifications and to the
Additional Conditions

Date of Issuance: October 23, 2008

ATTACHMENT TO LICENSE AMENDMENT NO. 180
TO RENEWED 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.

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Appendix C

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Appendix C

- (3) SCE&G, pursuant to the Act and 10 CFR Part 70, to receive, possess and use at any time special nuclear material as reactor fuel, in accordance with the limitations for storage and amounts required for reactor operation, as described in the Final Safety Analysis Report, as amended through Amendment No. 33;
- (4) SCE&G, pursuant to the Act and 10 CFR Parts 30, 40 and 70 to receive, possess and use at any time any byproduct, source and special nuclear material as sealed neutron sources for reactor startup, sealed neutron sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required;
- (5) SCE&G, pursuant to the Act and 10 CFR Parts 30, 40, and 70, to receive, possess and use in amounts as required any byproduct, source or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus of components; and
- (6) SCE&G, pursuant to the Act and 10 CFR Parts 30, 40, and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility.

C. This renewed license shall be deemed to contain, and is subject to, the conditions specified in the Commission's regulations set forth in 10 CFR Chapter I and is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:

(1) Maximum Power Level

SCE&G is authorized to operate the facility at reactor core power levels not in excess of 2900 megawatts thermal in accordance with the conditions specified herein and in Attachment 1 to this renewed license. The preoccupation tests, startup tests and other items identified in Attachment 1 to this renewed license shall be completed as specified. Attachment 1 is hereby incorporated into this renewed license.

(2) Technical Specifications and Environmental Protection Plan

The technical Specifications contained in Appendix A, as revised through Amendment No. 180, and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the renewed license. South Carolina Electric & Gas Company shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

- F. This renewed license is subject to the following additional condition for the protection of the environment:

Before engaging in activities that may result in a significant adverse environmental impact that was not evaluated or that is significantly greater than that evaluated in the Final Environmental Statement, SCE&G shall provide a written notification of such activities to the NRC Office of Nuclear Reactor Regulation and receive written approval from that office before proceeding with such activities.

- G. Reporting to the Commission:

- (1) SCE&G shall report any violations of the requirements contained in Section 2, Items C(1), C(3) through (33), E, F, K, and L of this renewed license within twenty-four (24) hours by telephone and confirm by telegram, mailgram, or facsimile transmission to the NRC Regional Administrator, Region II, or designee, not later than the first working day following the violation, with a written followup report within fourteen (14) working days.
- (2) SCE&G shall notify the Commission, as soon as possible but not later than one hour, of any accident at this facility which could result in an unplanned release of quantities of fission products in excess of allowable limits for normal operation established by the Commission.

- H. The licensees shall have and maintain financial protection of such type and in such amounts as the Commission shall require in accordance with Section 170 of the Atomic Energy Act of 1954, as amended, to cover public liability claims.

- I. In accordance with the Commission's direction in its Statement of policy, Licensing and Regulatory Policy and Procedures for Environmental Protection: Uranium Fuel Cycle Impacts, October 29, 1982, this license is subject to the final resolution of the pending litigation involving Table S-3. See, Natural Resources Defense Council v. NRC, No. 74-1586 (April 27, 1982).

- J. Additional License Conditions

The Additional Conditions contained in Appendix C, as revised through Amendment No. 180 are hereby incorporated into this renewed license. South Carolina Electric & Gas Company shall operate the facility in accordance with the Additional Conditions.

- K. Updated Final Safety Analysis Report

The South Carolina Electric & Gas Company Updated Final Safety Analysis Report supplement, submitted pursuant to 10 CFR 54.21(d), describes certain future activities to be completed prior to the period of extended operation. The

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CONTAINMENT SYSTEMS

3/4.6.3 PARTICULATE IODINE CLEANUP SYSTEM

LIMITING CONDITION FOR OPERATION

3.6.3 Two independent groups of HEPA filter banks (associated with the OPERABLE reactor building cooling units of Specification 3.6.2.3) with at least one filter bank in each group, shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With only one group of HEPA filter banks OPERABLE, restore one of the inoperable banks in the other group 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.

SURVEILLANCE REQUIREMENTS

4.6.3 The two groups of HEPA filter banks shall be demonstrated OPERABLE:

- a. At least once per 31 days by initiating, from the control room, flow through the HEPA filters and verifying that the system operates for at least 15 minutes.
- b. By performing required filter testing in accordance with the Ventilation Filter Testing Program (VFTP).
- c. At least once per 18 months by:
 1. Verifying that the filter bypass damper can be opened by operator action.
 2. Verifying that the filter bypass damper closes on a Safety Injection Test Signal.

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PLANT SYSTEMS

3/4.7.6 CONTROL ROOM EMERGENCY FILTRATION SYSTEM (CREFS)

LIMITING CONDITION FOR OPERATION

3.7.6 Two CREFS trains shall be OPERABLE.*

APPLICABILITY: ALL MODES

ACTION:

a. MODES 1, 2, 3 and 4:

1. With one CREFS train inoperable for reasons other than ACTION 3.7.6.a.2, restore the inoperable train 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.
2. With one or more CREFS trains inoperable due to an inoperable control room envelope (CRE) boundary, immediately initiate action to implement mitigating actions and verify within 24 hours that the mitigating actions ensure CRE occupant exposures to radiological, chemical, and smoke hazards will not exceed limits and restore CRE boundary to OPERABLE status within 90 days. Otherwise be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
3. With both CREFS trains inoperable for reasons other than ACTION 3.7.6.a.2, immediately enter LCO 3.0.3.

b. MODES 5 and 6:

1. With one CREFS train inoperable for reasons other than an inoperable CRE boundary, restore the inoperable train to OPERABLE status within 7 days, or immediately place the OPERABLE CREFS train in the emergency mode of operation or immediately suspend movement of irradiated fuel assemblies.
2. With both CREFS trains inoperable or one or more CREFS trains inoperable due to an inoperable CRE boundary, immediately suspend movement of irradiated fuel assemblies.

SURVEILLANCE REQUIREMENTS

4.7.6 Each CREFS train 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 by initiating, from the control room, flow through the HEPA filters and charcoal adsorbers and verifying that the CREFS train operates for at least 15 minutes.
- c. By performing required CREFS filter testing in accordance with the Ventilation Filter Testing Program (VFTP).

* The control room envelope (CRE) boundary may be opened intermittently under administrative control.

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- d. At least once per 18 months by verifying that on a simulated SI or high radiation test signal, each CREFS train automatically switches into an emergency mode of operation with flow through the HEPA filters and charcoal adsorber banks.
- e. By performing required CRE unfiltered air inleakage testing in accordance with the Control Room Habitability Program.

PLANT SYSTEMS

3/4.7.11 SPENT FUEL POOL VENTILATION SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.11 Two independent spent fuel pool ventilation sub-systems shall be OPERABLE with at least one sub-system in operation.

APPLICABILITY: Whenever irradiated fuel is being moved in the spent fuel pool and during crane operation with loads over the pool.

ACTION:

- a. With one spent fuel pool ventilation sub-system inoperable, fuel movement within the spent fuel pool or crane operation with loads over the spent fuel pool may proceed provided the OPERABLE spent fuel pool ventilation sub-system is capable of being powered from an OPERABLE emergency power source and is in operation and discharging through at least one train of HEPA filters and charcoal adsorbers.
- b. With no spent fuel pool ventilation sub-system OPERABLE, suspend all operations involving movement of fuel within the spent fuel pool or crane operation with loads over the spent fuel pool.
- c. The provisions of Specification 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.7.11 The above required spent fuel pool ventilation sub-systems shall be demonstrated OPERABLE:

- a. At least once per 31 days by initiating, from the control room, flow through the HEPA filters and charcoal adsorbers and verifying that each sub-system operates for at least 15 minutes.
- b. By performing required filter testing in accordance with the Ventilation Filter Testing Program (VFTP).
- c. At least once per 18 months by:
 1. Verifying that on a loss of offsite power test signal, the system automatically starts.
 2. Verifying that the system maintains the spent fuel pool area at a negative pressure greater than or equal to 1/8 inches Water Gauge relative to the outside atmosphere during system operation.

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ADMINISTRATIVE CONTROLS

location of flaws to which the tubes may be susceptible and, based on this assessment, to determine which inspection methods need to be employed and at what locations.

- a) Inspect 100% of the tubes in each SG during the first refueling outage following SG replacement.
- b) Inspect 100% of the tubes at sequential periods of 144, 108, 72 and thereafter, 60 effective full power months. The first sequential period shall be considered to begin after the first inservice inspection of the SGs. In addition, inspect 50% of the tubes by the refueling outage nearest the midpoint of the period and the remaining 50% by the refueling outage nearest the end of the period. No SG shall operate for more than 72 effective full power months or three refueling outages (whichever is less) without being inspected.
- c) If crack indications are found in any SG tube, then the next inspection for each SG for the degradation mechanism that caused the crack indication shall not exceed 24 effective full power months or one refueling outage (whichever is less). If definitive information, such as from examination of a pulled tube, diagnostic non-destructive testing, or engineering evaluation indicates that a crack-like indication is not associated with a crack(s), then the indication need not be treated as a crack.

5. Provisions for monitoring operational primary-to-secondary leakage.

I. Ventilation Filter Testing Program (VFTP)

A program shall be established to implement the following required testing of Engineered Safety Feature (ESF) filter ventilation systems at the frequencies specified in accordance with Regulatory Guide 1.52, Revision 2 and ASME N510-1989.

1. Demonstrate for each of the ESF systems that an in-place test of the high efficiency particulate air (HEPA) filters shows a penetration and system bypass < 0.05% when tested in accordance with Regulatory Guide 1.52, Revision 2, and ASME N510-1989 at the system flowrate specified below $\pm 10\%$.

ESF Ventilation System	Flowrate
Control Room Emergency Filtration System	21,270 SCFM
Spent Fuel Pool Ventilation System	30,000 ACFM
Reactor Building Cooling Units	60,270 ACFM

ADMINISTRATIVE CONTROLS

2. Demonstrate for each of the ESF systems that an in place test of the charcoal adsorber shows a penetration and system bypass < 0.05% when tested in accordance with Regulatory Guide 1.52, Revision 2, and ASME N510-1989 at the system flowrate specified below \pm 10%.

ESF Ventilation System	Flowrate
Control Room Emergency Filtration System	21,270 SCFM
Spent Fuel Pool Ventilation System	30,000 ACFM

3. Demonstrate for each of the ESF systems that a laboratory test of a sample of the charcoal adsorber, when obtained as described in Regulatory Guide 1.52, Revision 2, shows the methyl iodide penetration less than the value specified below when tested in accordance with ASTM D3803-1989 at a temperature of 30°C (86°F) and the relative humidity specified below.

ESF Ventilation System	Penetration	RH	Face Velocity (fps)
Control Room	<2.5%	70%	0.667
Spent Fuel Pool	<2.5%	95%	0.667

4. Demonstrate for each of the ESF systems that the pressure drop across the combined HEPA filters, the prefilters, and the charcoal adsorbers is less than the value specified below when tested in accordance with Regulatory Guide 1.52, Revision 2, and ASME N510-1989 at the system flowrate specified below \pm 10%.

ESF Ventilation System	Delta P	Flowrate
Control Room	<6 in. W.G.	21,270 SCFM
Spent Fuel Pool	<6 in. W.G.	30,000 ACFM
Reactor Building Cooling Units	<3 in. W.G.	60,270 ACFM

The provisions of SR 4.0.2 and SR 4.0.3 are applicable to the VFTP test frequencies.

m. Control Room Envelope Habitability Program

A Control Room Envelope (CRE) Habitability Program shall be established and implemented to ensure that CRE habitability is maintained such that, with an OPERABLE Control Room Emergency Filtration System (CREFS), CRE occupants can control the reactor safely under normal conditions and maintain it in a safe condition following a radiological event, hazardous chemical release, or a smoke challenge. The program shall ensure that adequate radiation protection is provided to permit access and occupancy of the CRE under design basis accident (DBA) conditions without personnel receiving radiation exposures in excess of 5 rem whole body or its equivalent to any part of the body for the duration of the accident. The program shall include the following elements:

ADMINISTRATIVE CONTROLS

1. The definition of the CRE and the CRE boundary.
2. Requirements for maintaining the CRE boundary in its design condition including configuration control and preventive maintenance.
3. Requirements for (i) determining the unfiltered air leakage past the CRE boundary into the CRE in accordance with the testing methods and at the Frequencies specified in Sections C.1 and C.2 of Regulatory Guide 1.197, "Demonstrating Control Room Envelope Integrity at Nuclear Power Reactors," Revision 0, May 2003, and (ii) assessing CRE habitability at the Frequencies specified in Sections C.1 and C.2 of Regulatory Guide 1.197, Revision 0.
4. Measurement, at designated locations, of the CRE pressure relative to all external areas adjacent to the CRE boundary during the pressurization mode of operation by one train of the CREFS, operating at the flow rate required by the Ventilation Filter Testing Program (VFTP), at a Frequency of 36 months on a STAGGERED TEST BASIS such that one train is tested every 18 months. The results shall be trended and used as part of the 18 month assessment of the CRE boundary.
5. The quantitative limits on unfiltered air leakage into the CRE. These limits shall be stated in a manner to allow direct comparison to the unfiltered air leakage measured by the testing described in paragraph 6.8.4.m.3. The unfiltered air leakage limit for radiological challenges is the leakage flow rate assumed in the licensing basis analyses of DBA consequences. Unfiltered air leakage limits for hazardous chemicals must ensure that exposure of CRE occupants to these hazards will be within the assumptions in the licensing basis.
6. The provisions of SR 4.0.2 are applicable to the Frequencies for assessing CRE habitability, determining CRE unfiltered leakage, and measuring CRE pressure and assessing the CRE boundary as required by paragraphs 6.8.4.m.3 and 6.8.4.m.4, respectively.

APPENDIX C

ADDITIONAL CONDITIONS
RENEWED OPERATING LICENSE NO. NPF-12

South Carolina Electric & Gas Company (the term licensee in Appendix C refers to South Carolina Electric & Gas Company) shall comply with the following conditions on the schedules noted below:

Amendment Number	Additional Condition	Implementation Date
137	<p>The licensee is authorized to relocate certain Technical Specification requirements to licensee-controlled documents. Implementation of this amendment shall include the relocation of those technical specification requirements to the appropriate documents, as described in the licensee's application dated November 14, 1995, as supplemented by letters dated July 11, 1996, and July 24, 1997, and evaluated in the staff's Safety Evaluation attached to this amendment.</p>	<p>The amendment shall be implemented within 180 days from August 13, 1997.</p>
180	<p>Upon implementation of Amendment No. 180 adopting TSTF-448, Revision 3, the determination of control room envelope (CRE) unfiltered air inleakage as required by Surveillance Requirement SR 4.7.6.e. in accordance with TS 6.8.4.m.3.(i), the assessment of CRE habitability as required by Specification 6.8.4.m.3.(ii), and the measurement of CRE pressure as required by Specification 6.8.4.m.4, shall be considered met. Following implementation:</p> <p>(a) The first performance of SR 4.7.6, in accordance with Specification 6.8.4.m.3.(i), shall be within the specified frequency of 6 years, plus the 18-month allowance of SR 4.0.2, as measured from March 25, 2005, the date of the most recent successful tracer gas test, as stated in the November 18, 2005 letter response to Generic Letter 2003-01, or within the next 18 months if the time period since the most recent successful tracer gas test is greater than 6 years.</p> <p>(b) The first performance of the periodic assessment of CRE habitability, specification 6.8.4.m.3.(ii), shall be within 3 years, plus the 9-month allowance of SR 4.0.2, as measured from March 25, 2005, the date of the most recent successful tracer gas test, as stated in the November 18, 2005 letter response to Generic Letter 2003-01, or within the next 9 months if the time period since the most recent successful tracer gas test is greater than 3 years.</p> <p>The first performance of the periodic measurement of CRE pressure, specification 6.8.4.m.4, shall be within 18 months, plus the 138 days allowance of SR 4.0.2, as measured from September 28, 2006, the date of the most recent successful pressure measurement test, or within 138 days if not performed previously.</p>	<p>As stated in the Additional Condition</p>



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 180 TO

RENEWED FACILITY OPERATING LICENSE NO. NPF-12

SOUTH CAROLINA ELECTRIC & GAS COMPANY

SOUTH CAROLINA PUBLIC SERVICE AUTHORITY

VIRGIL C. SUMMER NUCLEAR STATION, UNIT NO. 1

DOCKET NO. 50-395

1.0 INTRODUCTION

By application dated January 17, 2008, to the U.S. Nuclear Regulatory Commission (NRC) (Agencywide Documents Access and Management System (ADAMS) Accession No. ML080220067), South Carolina Electric and Gas Company (SCE&G, the licensee) requested changes to the Appendix A Technical Specifications (TS) and to the Appendix C Additional Conditions for the Virgil C. Summer Nuclear Station (VCSNS), Unit No. 1. The supplement dated August 15, 2008 (ADAMS Accession No. ML082320059), provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the staff's original proposed no significant hazards consideration determination as published in the *Federal Register* on February 12, 2008 (73 FR 8071).

On August 8, 2006, the commercial nuclear electrical power generation industry owners group Technical Specifications Task Force (TSTF) submitted a proposed change, TSTF-448, Revision 3, to the improved standard technical specifications (STS) (NUREGs 1430-1434) on behalf of the industry (TSTF-448, Revisions 0, 1, and 2 were prior draft iterations). TSTF-448, Revision 3, is a proposal to establish more effective and appropriate action, surveillance, and administrative STS requirements related to ensuring the habitability of the control room envelope (CRE).

In NRC Generic Letter 2003-01 (Reference 1), licensees were alerted to findings at facilities that existing TS surveillance requirements for the Control Room Emergency Filtration System (CREFS) may not be adequate. Specifically, the results of ASTM E741 (Reference 2) tracer gas tests to measure CRE unfiltered inleakage at facilities indicated that the differential pressure surveillance is not a reliable method for demonstrating CRE boundary operability. Licensees were requested to address existing TS as follows:

Provide confirmation that your technical specifications verify the integrity [i.e., operability] of the CRE [boundary], and the assumed [unfiltered] inleakage rates of potentially contaminated air. If you currently have a differential pressure

surveillance requirement to demonstrate CRE [boundary] integrity, provide the basis for your conclusion that it remains adequate to demonstrate CRE integrity in light of the ASTM E741 testing results. If you conclude that your differential pressure surveillance requirement is no longer adequate, provide a schedule for: 1) revising the surveillance requirement in your technical specification to reference an acceptable surveillance methodology (e.g., ASTM E741), and 2) making any necessary modifications to your CRE [boundary] so that compliance with your new surveillance requirement can be demonstrated.

If your facility does not currently have a technical specification surveillance requirement for your CRE integrity, explain how and at what frequency you confirm your CRE integrity and why this is adequate to demonstrate CRE integrity.

To promote standardization and to minimize the resources that would be needed to create and process plant-specific amendment applications in response to the concerns described in the generic letter, the industry and the NRC proposed revisions to CRE habitability system requirements contained in the STS, using the STS change traveler process. This effort culminated in Revision 3 to traveler TSTF-448, "Control Room Habitability," which the NRC staff approved on January 17, 2007.

Consistent with the traveler as incorporated into NUREG -1431, the licensee proposed revising action and surveillance requirements in Specification 3/4.7.6, "Control Room Emergency Filtration System (CREFS)," and adding a new administrative controls program, Specification 6.8.4.m, "Control Room Envelope Habitability Program." The purpose of the changes is to ensure that CRE boundary operability is maintained and verified through effective surveillance and programmatic requirements, and that appropriate remedial actions are taken in the event of an inoperable CRE boundary.

In addition, the licensee proposed revising surveillance requirements in Specification 3/4.6.3 "Containment Systems – Particulate Iodine Cleanup System", Specification 3/4.7.6, "Control Room Emergency Filtration System (CREFS)", and Specification 3/4.7.11 "Plant Systems – Spent Fuel Pool Ventilation System", and adding a new administrative controls program, Specification 6.8.4.l "Ventilation Filter Testing Program (VFTP)". The purpose of the changes is to adopt the Ventilation Filter Testing Program description consistent with NUREG-1431, Revision 3 and to align Specifications 3/4.6.3, 3/4.7.6, and 3/4.7.11 surveillance requirements with the VFTP.

Some editorial and plant specific changes were incorporated into this safety evaluation resulting in minor deviations from the model safety evaluation text in TSTF-448, Revision 3.

2.0 REGULATORY EVALUATION

2.1 Control Room and Control Room Envelope

NRC Regulatory Guide 1.196, "Control Room Habitability at Light-Water Nuclear Power Reactors," Revision 0, May 2003, (Reference 4) uses the term "control room envelope" in addition to the term "control room" and defines each term as follows:

Control Room: The plant area, defined in the facility licensing basis, in which actions can be taken to operate the plant safely under normal conditions and to maintain the reactor in a safe condition during accident situations. It encompasses

the instrumentation and controls necessary for a safe shutdown of the plant and typically includes the critical document reference file, computer room (if used as an integral part of the emergency response plan), shift supervisor's office, operator wash room and kitchen, and other critical areas to which frequent personnel access or continuous occupancy may be necessary in the event of an accident.

Control Room Envelope: The plant area, defined in the facility licensing basis that in the event of an emergency, can be isolated from the plant areas and the environment external to the CRE. This area is served by an emergency ventilation system, with the intent of maintaining the habitability of the control room. This area encompasses the control room, and may encompass other non-critical areas to which frequent personnel access or continuous occupancy is not necessary in the event of an accident.

NRC Regulatory Guide 1.197, "Demonstrating Control Room Envelope Integrity At Nuclear Power Reactors," Revision 0, May 2003 (Reference 5), also contains these definitions, but uses the term CRE to mean both. This is because the protected environment provided for operators varies with the nuclear power facility. At some facilities this environment is limited to the control room; at others, it is the CRE. In this safety evaluation, consistent with the proposed changes to the STS, the CRE will be used to designate both. For consistency, facilities should use the term CRE with an appropriate facility-specific definition derived from the above CRE definition.

2.2 Control Room Emergency Filtration System (CREFS)

The CREFS (the term used at Virgil C. Summer Nuclear Station for the Control Room Envelope Emergency Ventilation System, CREEVS) provides a protected environment from which operators can control the unit, during airborne challenges from radioactivity, hazardous chemicals, and fire byproducts, such as fire suppression agents and smoke, during both normal and accident conditions.

The CREFS is designed to maintain a habitable environment in the control room envelope for 30 days of continuous occupancy after a Design Basis Accident (DBA) without exceeding a 5 rem whole body dose or its equivalent to any part of the body.

The CREFS consists of two independent, redundant trains, each capable of maintaining the habitability of the CRE. The CREFS is considered operable when the individual components necessary to limit operator exposure are operable in both trains. A CREFS train is considered operable when the associated:

- Fan is operable;
- High efficiency particulate air (HEPA) filters and charcoal adsorbers are not excessively restricting flow, and are capable of performing their filtration functions;
- Ductwork, valves, and dampers are operable, and air circulation can be maintained; and
- CRE boundary is operable (the single boundary supports both trains).

The CRE boundary is considered operable when the measured unfiltered air inleakage is less than or equal to the inleakage value assumed by the licensing basis analyses of design basis accident consequences to CRE occupants.

2.3 Regulations Applicable to Control Room Habitability

In Appendix A, "General Design Criteria for Nuclear Power Plants," to 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities," General Design Criteria (GDC) 1, 2, 3, 4, 5, and 19 apply to CRE habitability. A summary of these GDCs follows.

GDC 1, "Quality Standards and Records," requires that structures, systems, and components (SSCs) important to safety be designed, fabricated, erected, and tested to quality standards commensurate with the importance of the safety functions performed.

GDC 2, "Design Basis for Protection Against Natural Phenomena," requires that SSCs important to safety be designed to withstand the effects of earthquakes and other natural hazards.

GDC 3, "Fire Protection," requires SSCs important to safety be designed and located to minimize the effects of fires and explosions.

GDC 4, "Environmental and Dynamic Effects Design Bases," requires SSCs important to safety to be designed to accommodate the effects of and to be compatible with the environmental conditions associated with normal operation, maintenance, testing, and postulated accidents, including loss-of-coolant accidents (LOCAs).

GDC 5, "Sharing of Structures, Systems, and Components," requires that SSCs important to safety not be shared among nuclear power units unless it can be shown that such sharing will not significantly impair their ability to perform their safety functions, including, in the event of an accident in one unit, the orderly shutdown and cooldown of the remaining units.

GDC 19, "Control Room," requires that a control room be provided from which actions can be taken to operate the nuclear reactor safely under normal conditions and to maintain the reactor in a safe condition under accident conditions, including a 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.

Prior to incorporation of TSTF-448, Revision 3, the STS requirements addressing CRE boundary operability resided only in the following CRE ventilation system specifications:

- NUREG-1430, TS 3.7.10, "Control Room Emergency Ventilation System (CREVS);"
- NUREG-1431, TS 3.7.10, "Control Room Emergency Filtration System (CREFS);"
- NUREG-1432, TS 3.7.11, "Control Room Emergency Air Cleanup System (CREACS);"
- NUREG-1433, TS 3.7.4, "[Main Control Room Environmental Control (MCREC)] System;"
and
- NUREG-1434, TS 3.7.3, "[Control Room Fresh Air (CRFA)] System."

In these specifications, the surveillance requirement associated with demonstrating the operability of the CRE boundary requires verifying that one CREFS train can maintain a positive pressure relative to the areas adjacent to the CRE during the pressurization mode of operation at a makeup

flow rate. Facilities that pressurize the CRE during the emergency mode of operation of the CREFS have similar surveillance requirements. Other facilities that do not pressurize the CRE have only a system flow rate criterion for the emergency mode of operation. Regardless, the results of ASTM E741 (Reference 2) tracer gas tests to measure CRE unfiltered inleakage at facilities indicated that the differential pressure surveillance (or the alternative surveillance at non-pressurization facilities) is not a reliable method for demonstrating CRE boundary operability. That is, licensees were able to obtain differential pressure and flow measurements satisfying the SR limits even though unfiltered inleakage was determined to exceed the value assumed in the safety analyses.

In addition to an inadequate surveillance requirement, the action requirements of these specifications were ambiguous regarding CRE boundary operability in the event CRE unfiltered inleakage is found to exceed the analysis assumption. The ambiguity stemmed from the view that the CRE boundary may be considered operable but degraded in this condition, and that it would be deemed inoperable only if calculated radiological exposure limits for CRE occupants exceeded a licensing basis limit; e.g., as stated in GDC-19, even while crediting compensatory measures.

NRC Administrative Letter 98-10, "Dispositioning of Technical Specifications That Are Insufficient to Assure Plant Safety," (AL 98-10) states that "the discovery of an improper or inadequate TS value or required action is considered a degraded or nonconforming condition," which is defined in NRC Inspection Manual Chapter 9900; see latest guidance in RIS 2005-20 (Reference 3). "Imposing administrative controls in response to improper or inadequate TS is considered an acceptable short-term corrective action. The NRC staff expects that, following the imposition of administrative controls, an amendment to the inadequate TS, with appropriate justification and schedule, will be submitted in a timely fashion."

Licensees that have found unfiltered inleakage in excess of the limit assumed in the safety analyses and have yet to either reduce the inleakage below the limit or establish a higher bounding limit through re-analysis, have implemented compensatory actions to ensure the safety of CRE occupants, pending final resolution of the condition, consistent with RIS 2005-20. However, based on Generic Letter (GL) 2003-01 and Administrative Letter (AL) 98-10, the NRC staff expects each licensee to propose TS changes that include a surveillance to periodically measure CRE unfiltered inleakage in order to satisfy 10 CFR 50.36(d)(3), which requires a facility's TS to include surveillance requirements, which it defines as "requirements relating to test, calibration, or inspection to assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and *that limiting conditions for operation will be met.*" (Emphasis added.)

The NRC staff also expects facilities to propose unambiguous remedial actions, consistent with 10 CFR 50.36(d)(2), for the condition of not meeting the limiting condition for operation (LCO) due to an inoperable CRE boundary. The action requirements should specify a reasonable completion time to restore conformance to the LCO before requiring a facility to be shut down. This completion time should be based on the benefits of implementing mitigating actions to ensure CRE occupant safety and sufficient time to resolve most problems anticipated with the CRE boundary, while minimizing the chance that operators in the CRE will need to use mitigating actions during accident conditions.

2.4 Adoption of TSTF-448, Revision 3, by Virgil C. Summer Nuclear Station (VCSNS)

Adoption of TSTF-448, Revision 3, will assure that the facility's TS LCO for the CREFS is met by demonstrating unfiltered leakage into the CRE is within limits; i.e., the operability of the CRE boundary. In support of this surveillance, which specifies a test interval (frequency) described in Regulatory Guide 1.197, TSTF-448 also adds TS administrative controls to assure the habitability of the CRE between performances of the ASTM E741 test. In addition, adoption of TSTF-448 will establish clearly stated and reasonable required actions in the event CRE unfiltered inleakage is found to exceed the analysis assumption.

The changes made by TSTF-448 to the STS requirements for the CREFS and the CRE boundary conform to 10 CFR 50.36(d)(2) and 10 CFR 50.36(d)(3). Their adoption will better assure that V C. Summer Nuclear Station's CRE will remain habitable during normal operation and design basis accident conditions. These changes are, therefore, acceptable from a regulatory standpoint.

2.5 Adoption new administrative controls program, Specification 6.8.4.i "Ventilation Filter Testing Program (VFTP)" by Virgil C. Summer Nuclear Station (VCSNS)

The licensee has proposed to adopt a Ventilation Filter Testing Program (VFTP) consistent with NUREG-1431 revision 3 "Standard Technical Specification - Westinghouse Plants". This is acceptable because the new VCSNS VFTP is consistent with the model as presented in NUREG-1431 revision 3.

3.0 TECHNICAL EVALUATION

The NRC staff reviewed the proposed changes against the corresponding changes made to the STS by TSTF-448, Revision 3, which the NRC staff has found to satisfy applicable regulatory requirements, as described above in Section 2.0. The emergency operational mode of the CREFS at VCSNS pressurizes the CRE to minimize unfiltered air inleakage. The proposed changes are consistent with this design.

3.1 Proposed Changes

The proposed amendment would strengthen CRE habitability TS requirements by changing TS 3/4.7.6, "CREFS" and adding a new TS administrative controls program on CRE habitability. Accompanying the proposed TS changes are appropriate conforming technical changes to the TS Bases. The proposed revision to the Bases also includes editorial and administrative changes to reflect applicable changes to the corresponding STS Bases, which were made to improve clarity, conform to the latest information and references, correct factual errors, and achieve more consistency among the STS NUREGs. Except for plant specific differences, all of these changes are consistent with STS as revised by TSTF-448, Revision 3.

The NRC staff compared the proposed TS changes to the STS and the STS markups and evaluations in TSTF-448. The NRC staff verified that differences from the STS were adequately justified on the basis of plant-specific design or retention of current licensing basis. The NRC staff also reviewed the proposed changes to the TS Bases for consistency with the STS Bases and the plant-specific design and licensing bases, although approval of the Bases is not a condition for accepting the proposed amendment. However, TS 6.8.4.i "Technical Specifications (TS) Bases Control Program," provides assurance that the licensee has established and will maintain the adequacy of the Bases. The proposed Bases for TS 3/4.7.6 refer to specific guidance in NEI 99-03, "Control Room Habitability Assessment Guidance," Revision 0, dated June 2001

(Reference 6), which the NRC staff has formally endorsed, with exceptions, through Regulatory Guide 1.196, "Control Room Habitability at Light-Water Nuclear Power Reactors," dated May 2003 (Reference 4).

The NRC staff compared the proposed Ventilation Filter Testing Program (VFTP) with NUREG-1431 revision 3 "Standard Technical Specification - Westinghouse Plants", and TSTF-448 revision 3. While the licensee has not converted to NUREG-1431, the new VCSNS VFTP is consistent with the model as presented in NUREG-1431 revision 3.

The NRC staff compared the proposed revisions to the surveillance requirements for Specifications 3/4.6.3, 3/4.7.6 and 3/4.7.11 by verifying the information transferred from the surveillance requirements to the new VFTP requirements was not altered.

3.2 Editorial Changes

The licensee proposed editorial changes to TS 3/4.7.6, "CREFS" to establish standard terminology, such as "control room envelope (CRE)" in place of "control room," except for the plant-specific name for the CREFS (plant specific name for CREEVS), and "radiological, chemical, and smoke hazards (or challenges)" in place of various phrases to describe the hazards that CRE occupants are protected from by the CREFS. These changes improve the usability and quality of the presentation of the TS, have no impact on safety, and therefore, are acceptable.

3.3 TS 3/4.7.6, "CREFS"

The licensee proposed to revise the action requirements of TS 3/4.7.6, "CREFS" to acknowledge that an inoperable CRE boundary, depending upon the location of the associated degradation, could cause just one, instead of both CREFS trains to be inoperable. This is accomplished by revising ACTION 3.7.6.a.1 as follows:

1. With one CREFS train inoperable for reasons other than ACTION 3.7.6.a.2, restore the inoperable train 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.

And revising ACTION 3.7.6.a.2 as follows:

2. With one or more CREFS trains inoperable due to an inoperable control room envelope (CRE) boundary, immediately initiate action to implement mitigating actions and verify within 24 hours that the mitigating actions ensure CRE occupant exposures to radiological, chemical, and smoke hazards will not exceed limits and restore CRE boundary to OPERABLE status within 90 days. Otherwise be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

This change clarifies how to apply the action requirements in the event just one CREFS train is unable to ensure CRE occupant safety within licensing basis limits because of an inoperable CRE boundary. It enhances the usability of ACTION 3.7.6.a with a presentation that is more consistent with the intent of the existing requirements. This change is an administrative change because it neither reduces nor increases the existing action requirements, and, therefore, is acceptable.

The 24-hour Completion Time of new ACTION 3.7.6.a.2 is reasonable based on the low probability of a DBA occurring during this time period, and the use of mitigating actions as directed by Required Action B.1. The 90-day Completion Time of ACTION 3.7.6.a.2 for the restoration of the CRE boundary is reasonable based on the determination that the mitigating actions will ensure protection of CRE occupants within analyzed limits while limiting the probability that CRE occupants will have to implement protective measures that may adversely affect their ability to control the reactor and maintain it in a safe shutdown condition in the event of a DBA. The 90-day Completion Time is a reasonable time to diagnose, plan and possibly repair, and test most anticipated problems with the CRE boundary. Therefore, proposed ACTION 3.7.6.a.2 is acceptable.

The license proposes to add a new ACTION 3.7.6.a.3:

3. With both CREFS trains inoperable for reasons other than ACTION 3.7.6.a.2, immediately enter LCO 3.0.3.

This change clarifies how to apply the action requirements in the event both CREFS trains are not OPERABLE for reasons other than an inoperable CRE boundary. This change is consistent with existing guidance in NUREG-1431 revision 3. The proposed new ACTION 3.7.6.a.3 is acceptable.

The licensee proposed to revise ACTION 3.7.6.b.1 of TS 3/4.7.6, to read: "With one CREFS train inoperable for reasons other than an inoperable CRE boundary, restore the inoperable train to OPERABLE status within 7 days, or immediately place the OPERABLE CREFS train in the emergency mode of operation or immediately suspend movement of irradiated fuel assemblies. " The licensee also proposes to revise ACTION 3.7.6.b.2 of TS 3/4.7.6, to read: "With both CREFS trains inoperable or one or more CREFS trains inoperable due to an inoperable CRE boundary, immediately suspend movement of irradiated fuel assemblies." As such, this change will ensure that the Actions table continues to specify a condition for an inoperable CRE boundary during Modes 5 and 6 and during refueling. Therefore, this change is administrative and acceptable.

The licensee proposed to eliminate ACTION 3.7.6.b.3: "The provisions of Specification 3.0.4 are not applicable." Specification 3.0.4 states: "Entry into an OPERATIONAL MODE or other specified condition shall not be made unless the conditions of the Limiting Condition for Operation are met without reliance on provisions contained in the ACTION requirements. This provision shall not prevent passage through or to OPERATIONAL MODES as required to comply with ACTION requirements. Exceptions to these requirements are stated in the individual specifications." Removal of this exemption does not reduce the level of protection provided by the TS. Therefore, this change is acceptable.

In the emergency mode of operation, the CREFS aligns the system for recirculating air within the CRE through redundant trains of HEPA and charcoal filters. The emergency mode of operation maintains pressurization and filtered ventilation of the air supplied to the CRE. Pressurization of the CRE minimizes infiltration of unfiltered air through the CRE boundary from all the surrounding areas adjacent to the CRE boundary. The licensee proposed to delete the CRE pressurization surveillance requirement (SR). This SR requires verifying that one CREFS train operating in the emergency mode of operation can maintain a pressure of 0.125 inches water gauge, relative to the outside atmosphere during the pressurization mode of operation at a makeup flow rate of 1000

scfm (standard cubic feet per minute). The deletion of this SR is proposed because measurements of unfiltered air leakage into the CRE at numerous reactor facilities demonstrated that a basic assumption of this SR, an essentially leak-tight CRE boundary, was incorrect for most facilities. Hence, meeting this SR by achieving the required CRE pressure is not necessarily a conclusive indication of CRE boundary leak tightness, i.e., CRE boundary operability. In its response to GL 2003-01, dated November 18, 2005, the licensee reported that it would replace the existing CRE pressurization surveillance, SR 3.7.6.e.3 with an inleakage measurement SR and a CRE Habitability Program in TS Section 6.8.4.m, in accordance with the approved version of TSTF-448. Based on the adoption of TSTF-448, Revision 3, the licensee's proposal to delete SR 4.7.6.e3 is acceptable.

The proposed CRE inleakage measurement SR states, "Each CREFS train shall be demonstrated OPERABLE" "[by] performing required CRE unfiltered air inleakage testing in accordance with the Control Room Envelope Habitability Program." The CRE Habitability Program TS, proposed TS 6.8.4.m, requires that the program include "Requirements for determining the unfiltered air inleakage past the CRE boundary into the CRE in accordance with the testing methods and at the frequencies specified in Sections C.1 and C.2 of Regulatory Guide 1.197, Revision 0 (Reference 5). This guidance references ASTM E741 (Reference 2) as an acceptable method for ascertaining the unfiltered leakage into the CRE. The licensee has, proposed to follow this method. Therefore, the proposed CRE inleakage measurement SR is acceptable.

3.4 TS 6.8.4.m Control Room Envelope Habitability Program

The proposed administrative controls program TS is consistent with the model program TS in TSTF-448, Revision 3. In combination with SR 4.7.6.e3 this program is intended to ensure the operability of the CRE boundary, which as part of an operable CREFS will ensure that CRE habitability is maintained such that CRE occupants can control the reactor safely under normal conditions and maintain it in a safe condition following a radiological event, hazardous chemical release, or a smoke challenge. The program shall ensure that adequate radiation protection is provided to permit access and occupancy of the CRE under design basis accident (DBA) conditions without personnel receiving radiation exposures in excess of 5 rem whole body or its equivalent to any part of the body for the duration of the accident.

A CRE Habitability Program TS acceptable to the NRC staff requires the program to contain the following elements:

Definitions of CRE and CRE boundary. This element is intended to ensure that these definitions accurately describe the plant areas that are within the CRE, and also the interfaces that form the CRE boundary, and are consistent with the general definitions discussed in Section 2.1 of this safety evaluation. Establishing what is meant by the CRE and the CRE boundary will preclude ambiguity in the implementation of the program.

Configuration control and preventive maintenance of the CRE boundary. This element is intended to ensure the CRE boundary is maintained in its design condition. Guidance for implementing this element is contained in Regulatory Guide 1.196 (Reference 4), which endorsed, with exceptions, NEI 99-03 (Reference 6). Maintaining the CRE boundary in its design condition provides assurance that its leak-tightness will not significantly degrade between CRE inleakage determinations.

Assessment of CRE habitability at the frequencies stated in Sections C.1 and C.2 of Regulatory Guide 1.197, Revision 0 (Reference 5), and measurement of unfiltered air leakage into the CRE in accordance with the testing methods and at the frequencies stated in Sections C.1 and C.2 of Regulatory Guide 1.197. Assessing CRE habitability at the NRC accepted frequencies provides assurance that significant degradation of the CRE boundary will not go undetected between CRE inleakage determinations. Determination of CRE inleakage using test methods acceptable to the NRC staff assures that test results are reliable for ascertaining CRE boundary operability. Determination of CRE inleakage at the NRC accepted frequencies provides assurance that significant degradation of the CRE boundary will not occur between CRE inleakage determinations.

Measurement, at designated locations, of the CRE pressure relative to external areas adjacent to the CRE boundary during the pressurization mode of operation by one subsystem of the CREV System, operating at the flow rate required by the VFTP (ventilation filter test program), at a Frequency of 36 months on a STAGGERED TEST BASIS such that one train is tested every 18 months (with respect to the CREVS subsystems). This element is intended to ensure that CRE differential pressure is regularly measured to identify changes in pressure warranting evaluation of the condition of the CRE boundary. Obtaining and trending pressure data provides additional assurance that significant degradation of the CRE boundary will not go undetected between CRE inleakage determinations.

Quantitative limits on unfiltered inleakage. This element is intended to establish the CRE inleakage limit as the CRE unfiltered infiltration rate assumed in the CRE occupant radiological consequence analyses of design basis accidents. Having an unambiguous criterion for the CRE boundary to be considered operable in order to meet LCO 3.7.6, will ensure that associated action requirements will be consistently applied in the event of CRE degradation resulting in inleakage exceeding the limit.

Consistent with TSTF-448, Revision 3, the program states that the provisions of SR 4.0.2 are applicable to the program frequencies for performing the activities required by program paragraph number c, parts (i) and (ii) (assessment of CRE habitability and measurement of CRE inleakage), and paragraph number d (measurement of CRE differential pressure). This statement is needed to avoid confusion. SR 4.0.2 is applicable to the surveillance that references the testing in the CRE Habitability Program. However, SR 4.0.2 is not applicable to Administrative Controls unless specifically invoked. Providing this statement in the program eliminates any confusion regarding whether SR 4.0.2 is applicable, and is acceptable.

Consistent with TSTF-448, Revision 3, proposed TS 6.8.4.m states that (1) a CRE Habitability Program shall be established and implemented, (2) the program shall include all of the NRC-staff required elements, as described above, and (3) the provisions of SR 4.0.2 shall apply to program frequencies. Therefore, TS 6.8.4.m, which is consistent with the model program TS approved by the NRC staff in TSTF-448, Revision 3, is acceptable.

3.5 Adoption of new administrative controls program, Specification 6.8.4.I "Ventilation Filter Testing Program (VFTP)" by Virgil C. Summer Nuclear Station (VCSNS)

The licensee proposed to add a new specification, TS 6.8.4.I, "Ventilation Filter Testing Program (VFTP)". The VFTP covers in place high efficiency particulate air (HEPA) filter testing for the Control Room Emergency Filtration System, Spent Fuel Pool Ventilation System, and the Reactor

Building Cooling Units; in place charcoal adsorber bypass leakage of the Control Room Emergency Filtration System and the Spent Fuel Pool Ventilation System; laboratory testing of charcoal adsorbers for the Control Room Emergency Ventilation System and the Spent Fuel Pool Ventilation System; and measures the pressure drop across the combined HEPA filters, pre-filters, and charcoal adsorbers for the Control Room Emergency Ventilation System, Spent Fuel Pool Ventilation System, and the Reactor Building Cooling Units. The systems tested by the new VFTP are consistent with those systems that currently have ventilation filter testing surveillance requirements. No omitted systems were identified. The new VFTP indicates that testing will be done in accordance with ASME N510-1989. This is a newer version than the existing testing protocol of ASME N510-1975. ASME N510-1989 has been previously reviewed by the NRC and is acceptable. The new VFTP is consistent with the model presented in NUREG-1431. Therefore the new TS 6.8.4.I "Ventilation Filter Testing Program (VFTP) is acceptable.

3.6 Alignment of Specifications 3/4.6.3 surveillance requirements with the VFTP by Virgil C. Summer Nuclear Station (VCSNS)

The licensee proposed to delete the surveillance requirements, SR 4.6.3.b, c.1, and d and move the testing requirements to the new TS 6.8.4.I, "Ventilation Filter Testing Program (VFTP)". The NRC Staff verified that the technical requirements from the existing SR 4.6.3. were moved to the new VFTP. No errors or omissions were identified. A new SR 4.6.3.b, "By performing required filter testing in accordance with the Ventilation Filter Testing Program (VFTP)." was added. Surveillance Requirements SR 4.6.3.c. 2 & c.3 were renumbered as SR 4.6.3.c.1 & c.2. Index pages were updated. These changes are acceptable.

3.7 Alignment of Specifications 3/4.7.6 surveillance requirements with the VFTP by Virgil C. Summer Nuclear Station (VCSNS)

The licensee proposed to delete the surveillance requirements, SR 4.7.6. c, d, e, f, and g and move the testing requirements to the new TS 6.8.4.I, "Ventilation Filter Testing Program (VFTP)". The NRC Staff verified that the technical requirements from the existing SR 4.7.6 were moved to the new VFTP. No errors or omissions were identified. Surveillance Requirement SR 4.7.6.b was revised by eliminating the phrase "on a STAGGERED TEST BASIS" and changing the word "system" to "CREFS train". A new SR 4.7.6.c "By performing required filter testing in accordance with the Ventilation Filter Testing Program (VFTP)." was added. This assures that the filter testing surveillances will be performed. A new SR 4.7.6.d, "At least once per 18 months by verifying that on a simulated SI or high radiation test signal, each CREFS train automatically switches into an emergency mode of operation with flow through the HEPA filters and charcoal adsorber banks." was added. This assures that the old SR 4.7.6.e.2 will be performed. Index pages were updated. The changes are acceptable.

3.8 Alignment of Specifications 3/4.7.11 surveillance requirements with the VFTP by Virgil C. Summer Nuclear Station (VCSNS)

The licensee proposed to delete the surveillance requirements, SR 4.7.11.b, c, d.1, e, and f and move the testing requirements to the new TS 6.8.4.I, "Ventilation Filter Testing Program (VFTP)". The NRC Staff verified that the technical requirements from the existing SR 4.7.11 were moved to the new VFTP. No errors or omissions were identified. Surveillance Requirement SR 4.7.11.b was revised by eliminating the phrase "on a STAGGERED TEST BASIS". A new SR 4.7.11.c "By performing required filter testing in accordance with the Ventilation Filter Testing Program

(VFTP)." was added. This assures that the filter testing surveillances will be performed. Surveillance Requirements SR 4.7.11.d.2 & d.3 were renumbered as SR 4.7.11.c.1 & c.2. The index pages were updated. The changes are acceptable.

3.9 Implementation of New Surveillance and Assessment Requirements by the Licensee

The licensee has proposed a license condition regarding the initial performance of the new surveillance and assessment requirements. The new license condition adopted the conditions in section 2.3 of the model application published in the *Federal Register* on January 17, 2007 (72 FR 2022). Plant specific changes were made to these proposed license conditions. The proposed plant specific license conditions are consistent with the model application, are acceptable and are located in Appendix C, "Additional License Conditions or the renewed operating license.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the State of South Carolina official was notified of the proposed issuance of the amendment. The State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes surveillance requirements. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration, and there has been no public comment on such finding (73 FR 8071). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

6.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that (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.

7.0 REFERENCES

1. NRC Generic Letter 2003-01, "Control Room Habitability," dated June 12, 2003, (GL 2003-01).
2. ASTM E 741 - 00, "Standard Test Method for Determining Air Change in a Single Zone by Means of a Tracer Gas Dilution," 2000, (ASTM E741).

3. NRC Regulatory Issue Summary 2005-20: Revision to Guidance Formerly Contained in NRC Generic Letter 91-18," Information to Licensees Regarding Two NRC Inspection Manual Sections on Resolution of Degraded and Nonconforming Conditions and on Operability," dated September 26, 2005 (RIS 2005-20).
4. Regulatory Guide 1.196, "Control Room Habitability at LightWater Nuclear Power Reactors," Revision 0, dated May 2003.
5. Regulatory Guide 1.197, "Demonstrating Control Room Envelope Integrity at Nuclear Power Reactors," Revision 0, May 2003.
6. NEI 99-03,"Control Room Habitability Assessment Guidance," Revision 0, dated June 2001.

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