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August 8, 2003

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

Dear Sir/Madam:

Subject: VIRGIL C. SUMMER NUCLEAR STATION (VCSNS)
DOCKET NO. 50/395
OPERATING LICENSE NO. NPF-12
60-DAY RESPONSE TO NRC GENERIC LETTER 2003-01
CONTROL ROOM HABITABILITY

On June 12, 2003, the U.S. Nuclear Regulatory Commission (NRC) issued NRC Generic Letter 2003-01 to request that utilities provide information that demonstrates that the control room at their facility complies with the current licensing and design bases and applicable regulatory requirements (GDC 1, 3, 4, 5, and 19), and that suitable design, maintenance and testing control measures are in place for maintaining this compliance.

Licensees were requested to provide a response within 180 days of issuance of the generic letter. If a licensee cannot provide the information or cannot meet the requested completion date, they should submit a written response indicating this within 60 days of the date of the generic letter.

South Carolina Electric & Gas Company (SCE&G) acting for itself and as agent for South Carolina Public Service Authority, hereby submits the attached in response to the generic letter. SCE&G has determined that all necessary actions to provide the requested information cannot be achieved within 180 days; therefore, this submittal addresses the 60-day response action required by the letter.

Should you have questions, please call Mr. Ron Clary at (803) 345-4757.

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

8/8/03

Executed on

Stephen A. Byrne

Senior Vice President, Nuclear Operations

JT/SAB/dr
Attachment

c: N. O. Lorick
N. S. Carns
T. G. Eppink (w/o Attachment)
R. J. White
L. A. Reyes
K. R. Cotton

NRC Resident Inspector
K. M. Sutton
NSRC
RTS (0-C-03-1931)
File (815.14)
DMS (RC-03-0167)

A102

60-Day Response Generic letter 2003-01

Basis

VCSNS utilizes a positive-pressure control room (CR) envelope as described in Section 9.4 of the VCSNS FSAR. The FSAR discussion reflects the as-built design, as there have been no modifications to the CR envelope or Habitability Systems outside the current licensing basis submittals. In accordance with Technical Specification 4.7.6.e.3, verification testing is performed to demonstrate that, following a SI or high radiation signal, the air handling systems will pressurize and maintain a positive pressure of $\geq 1/8$ inch W.G. with a maximum of 1000 cfm of outside air during system operation.

An Overall FSAR Review, including sections dealing with Control Room Habitability, was conducted comparing the FSAR against DBDs, Technical Specifications, and plant procedures. Other controlled documents (e.g. design calculations and drawings), particularly in cases where the DBD did not provide sufficient information, were used on a case-by-case basis to corroborate the FSAR. Regulatory documents (e.g., Technical Specifications, GDCs, etc.) served as higher level documents for assessing the accuracy of the FSAR. Relative to Control Room Habitability, all discrepancies between the FSAR and other documents have been investigated and resolved.

VCSNS has performed a number of analyses to demonstrate adequate CR design. The analyses are, in general, based on design inleakage. The analyses, as explained below, maintain margin to the applicable licensed limits, and the available margin provides a means to accommodate potential increases in CR inleakage.

- Radiological assessments for LOCA based on TID-14844 source terms and guidance contained in RG 1.4 have been performed. CR dose results are well below GDC-19 limits.
- Radiological assessments for a number of non-LOCA accidents have also been performed. These analyses credit operator action within 30 minutes to place the CR ventilation system in the emergency mode of operation. CR doses are well below GDC-19 limits and comparable to LOCA consequences.

- Chemical hazard analyses for a chlorine release and a rupture of the ammonium hydroxide storage tank have also been done using the guidance of Regulatory Guide 1.78. They demonstrate that the operator has sufficient time to take necessary protective actions and that the CR concentrations remain substantially less than the toxicity limits.
- For smoke events, a postulated fire in the CR will not interfere with evacuation and subsequent control in the Control Room Evacuation Panel (CREP) rooms. Smoke from an external event could hypothetically cause evacuation of the CR; however, the transit path can be safely utilized to the CREP rooms that are isolated from the outside environment.

Based on current methods of analysis, the VCSNS inleakage limits would likely be controlled by thyroid dose considerations. Prior sensitivity studies for LOCA indicate that substantial increases in unfiltered inleakage can be tolerated and still meet the VCSNS licensed limit of 30 Rem. Additional margin is also available via use of the revised thyroid acceptance criteria of 50 Rem (per RG-1.195) or via use of alternate source term analysis.

SCE&G has conducted preliminary walkdowns with experienced industry personnel and believes that the amount of unfiltered inleakage is within available margin.

In addition, potassium iodide (KI) tablets are available for use to offset increased dose due to potential increases in CR inleakage.

Given the above considerations, the course of action described in the accompanying schedule is provided in response to the information request.

Schedule

The following activities will be started as soon as possible, to support activities to be accomplished in 2004:

- Performance of a system assessment to identify potential inleakage paths that are candidates for pre-test maintenance or design modifications.
- Determination of whether Control Room Habitability systems are consistent with the Licensing Bases.
- Determination of performance characteristics of the control room envelope (CRE), its ventilation systems, and systems that serve or traverse areas within or located adjacent to the CRE.
- Selection of the source term methodology (i.e., alternate or TID-14844 source terms) to be utilized in radiological assessments.

Activities to be accomplished in 2004 include the following:

- Calculation of radiological (per RG 1.195 or 1.183) and chemical hazards (per RG 1.78) consequences with allowable inleakage values for all potential events and their associated postulated failure scenarios.
- Performance of a baseline ASTM E741 integrated test of the Control Room Envelope during all pertinent operating modes.
- Performance of a qualitative assessment to ensure that the plant can be safely shutdown from either the control room or alternate shutdown panel during an internal or external smoke event.
- Comparison of test data to allowable inleakage values, and performance of any necessary maintenance and/or modifications.
- Establishment of a Control Room Habitability maintenance and monitoring program.

VCSNS will provide the information requested in Generic Letter 2003-01 within 3 months following the completion of these activities, which is currently projected to be by the end of March 2005. SCE&G will address any coordinating industry developments in the VCSNS response. Should it become apparent that activities would extend beyond the projected completion date, an updated schedule will be provided.