SCE&G
A SCANA COMPANY

May 30, 2000
RC-00-0244

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

Gentlemen:

Subject: VIRGIL C. SUMMER NUCLEAR STATION
DOCKET NO. 50/395
OPERATING LICENSE NO. NPF-12
RESPONSE TO NON-CITED VIOLATION
NRC INSPECTION REPORT 50-395/00-02

This letter provides the South Carolina Electric and Gas (SCE&G) response to Non-Cited Violation Number 50-395/00002-01 delineated in Section M3.1 of NRC Inspection Report No. 50-395/00-02. SCE&G is not in agreement with this violation. The basis for denial of this NCV is contained within the attached response.

If you have any questions regarding this request or require additional information, please contact Mr. Donald L. Jones at (803) 345-4480.

Very truly yours,

Stephen A. Byrne

DLJ/SAB/dr
Attachment

c: J. L. Skolds
N. S. Carns
T. G. Eppink (w/o attachment)
R. J. White
L. A. Reyes
J. Lieberman
K. R. Cotton
NRC Resident Inspector
H. C. Fields
D. M. Deardorff
L. A. Blue
P. Ledbetter
J. B. Knotts, Jr.
NSRC
RTS (L-00-0095)
File (815.01)
DMS (RC-00-0244)

South Carolina Electric & Gas Co
Virgil C. Summer Nuclear Station
P. O. Box 88
Jenkinsville, South Carolina
29065

803.345.4344
803.345.5209
www.scana.com

IE01

RGN-001

REPLY TO NON-CITED VIOLATION
VIOLATION NUMBER NCV 50-395/00002-01

I. RESTATEMENT OF THE VIOLATION

TS surveillance requirement 4.5.2, "Emergency Core Cooling," requires that each ECCS subsystem shall be demonstrated operable. Specifically, TS 4.5.2.b requires at least once per 31 days that ECCS piping is verified to be full of water by venting the ECCS pump casings and accessible discharge piping high points. The licensee accomplishes this in accordance with surveillance test procedure STP-105.006, "Safety Injection/Residual Heat Removal Monthly Flowpath Verification Test," Revision 9F. Based on observations made during performance of the venting activity, the inspectors questioned the adequacy of the procedure.

There are six high points vents in the ECCS discharge piping (excluding the two RHR pump casing vents). At the time of the inspectors' observations, three of the available six high point vents were being utilized. The inspectors questioned whether the use of three high points was sufficient to ensure that the piping was full of water. After discussions with the licensee, the inspectors learned that originally six high point vents were used in performance of STP-105.006. However, a procedure change was initiated in July 1993, (Revision 8B) which eliminated three of the high point vents. A contingency requirement remained in the STP to vent the three high points which were removed if gas is discovered during the monthly venting of the remaining high points. The licensee documented the reason for the permanent procedure change as physical inaccessibility of the valves and ALARA (As Low As Reasonably Achievable) concerns. The licensee had Westinghouse perform analyses in September and October 1993, which concluded the system integrity would be maintained in the event of a water hammer caused by formation of a large gas bubble in the ECCS discharge piping. In the licensee's view, these analyses further justified elimination of the three vent points from performance of the monthly surveillance. Final approval and issuance of the procedure occurred in November 1993.

The inspectors reviewed the procedure change package and the specific radiological conditions that existed during the time the change was being processed. Based on observation the inspector determined that two of the three high point valves eliminated from the STP were physically inaccessibility, however, there was no physical limitation in accessing valve XVT00071-SI. The inspectors reviewed monthly radiation surveys taken around the July 1993 time frame for valve XVT00071-SI. The inspectors also reviewed a sample of surveys from several years preceding and subsequent to the procedure change. The inspector noted that radiological conditions have remained similar from 1993 through the present day. Specifically, dose rates measured on March 10, 2000, when STP-105.006 was performed and valve XVT00071-SI was vented, were approximately the same as those measured in 1993; 100 mrem contact and 50

mrem at one foot. Total dose for the operator and support personnel venting valve XVT00071-SI on March 10 was eight mrem. While the west penetration room (location of XVT00071-SI) at times in the past has been posted as a high radiation area, the inspector noted that neither access to nor the actual location of XVT00071-SI involved personnel being in a high radiation dose field.

Based on the radiological surveys at the time the procedure was changed and typical radiation worker dose received when performing the venting evolution, the inspectors concluded that the dose rate measurements did not support the licensee's determination that high point vent valve XVT00071-SI was inaccessible based on ALARA considerations. As a result of the change in November 1993, the STP used to accomplish TS surveillance requirement 4.5.2 was inadequate, in that, all accessible high point vent valves were not used to verify that ECCS piping is full of water. TS 6.8.1.c, requires that written procedures shall be established, implemented, and maintained for surveillance and test activities of safety-related equipment. The failure to establish an adequate procedure is a violation of TS 6.8.1.c. This Severity Level IV violation is being treated as an NCV, consistent with Section VII.B.1.a of the NRC Enforcement Policy. This violation is identified as NCV 50-395/00002-01 and has been placed in the licensee's corrective action program as PIP 0-C-00-0267.

Since STP-105.006 contained instructions to vent the high points in question if gas was discovered during the monthly venting of the remaining high points, there was reasonable assurance that the ECCS subsystem was not adversely affected and therefore, the safety significance is low. This is based, in part, on the physical locations of the high point vent valves (elevation differences and distances between the valves) and when gas has been discovered during the monthly vent of the three valves, no additional gas was noted when venting the three remaining valves.

In conclusion, a Non-Cited Violation was identified for an inadequate surveillance procedure used to verify that the emergency core cooling discharge piping is full of water. The failure to establish an adequate procedure is a violation of Technical Specification 6.8.1.c. A 1993 procedure change had an inadequate basis to support the conclusion that high point vent valve XVT00071-SI was inaccessible due to radiation dose considerations.

II. SOUTH CAROLINA ELECTRIC AND GAS (SCE&G) POSITION ON THE VIOLATION

SCE&G denies the violation as stated above.

III. BASIS FOR SCE&G POSITION

The surveillance requirements of Technical Specification 4.5.2.b.2 states:

4.5.2 Each ECCS subsystem shall be demonstrated OPERABLE:

c. At lease once per 31 days by:

2. Verifying that the ECCS piping is full of water by venting the ECCS pump casings and accessible discharge piping high points.

The purpose of this surveillance requirement is to ensure that the assumptions made in the safety analysis are met and that ECCS subsystem OPERABLITY is maintained.

The monthly venting of valve XVT00071-SI was eliminated from Surveillance Test Procedure STP-105.006, "Safety Injection/Residual Heat Removal Monthly Flowpath Verification Test," based on the valve being inaccessible due to ALARA (As Low As Reasonably Achievable) considerations. The ALARA concept has no published threshold limits. The basis for the ALARA requirements of 10CFR20 is the assumption that there is no threshold for deleterious effects from radiation exposure.

The Code of Federal Regulations (10CFR20.1003) states:

> *ALARA (acronym for "As Low As Reasonably Achievable") means making every reasonable effort to maintain exposure to radiation as far below the dose limits in this part as is practical consistent with the purpose for which the licensed activity is undertaken, taking into account the state of technology, the economics of improvements in relation to the state of technology, the economics of improvements in relation to benefits to the public health and safety, and other societal and socioeconomic considerations, and in relation to utilization of nuclear energy and licensed materials in the public interest.*

It is important to note the words, "*making every reasonable effort to maintain exposure to radiation as far below the dose limits in this part as is practical consistent with the purpose for which the licensed activity is undertaken.*" The language of 10CFR20 does not give prescriptive limits, below which ALARA considerations are not valid or warranted. Instead, the regulations state that every reasonable effort be made to keep exposure as far below the 10CFR20 limits as possible while remaining consistent with the licensed activity, in this case, ensuring the OPERABILITY of the ECCS. Stated in succinct terms, all activities conducted in the course of performing the ECCS surveillance testing should be scrutinized and changed or eliminated for dose reduction so long as the end purpose of the activity is accomplished.

The NRC has issued SCE&G a non-cited violation against Technical Specification 6.8.1.c for failure to establish, implement, and maintain adequate procedures for surveillance and test activities of safety-related equipment. The NRC has performed a review of the radiological surveys at the time the procedure was changed. Additionally, the NRC observed a venting evolution for XVT00071-SI and noted that the total dose received was 8 millirem. The NRC concluded that the dose rate measurements and the dose received by the personnel who performed the venting evolution did not support SCE&G's determination that high point vent valve XVT00071-SI was inaccessible because of radiation dose considerations.

Exposure records for 1999 show that the average dose received by Plant Operators was approximately 6 millirem per month. Exposure records for the observed venting evolution show that the Operators received 6 millirem and the HP technician received 4 millirem (a slight difference from the HP Technician's dose stated in the inspection report).

The dose received while venting XVT00071-SI is approximately equal to an operator's dose for one month of normal operation. The dose saved by declaring valve XVT00071-SI inaccessible and venting only when gas is observed at the other specified vent points, when compared to the small magnitude of the monthly average dose received by Operators, meets the definition of ALARA from 10CFR20.