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

Ladies and Gentlemen:

Subject: VIRGIL C. SUMMER NUCLEAR STATION (VCSNS)
DOCKET NO. 50/395
OPERATING LICENSE NO. NPF-12
RESPONSE TO NRC QUESTIONS REGARDING
REQUEST FOR REVISION TO ASME BOILER AND PRESSURE VESSEL
CODE, SECTION XI RELIEF REQUEST (NRR 00-0058) -- RR-II-07

Reference: SCE&G Letter to NRC (Document Control Desk), RC-02-0161, September 16,
2002; Request For Revision To ASME Boiler And Pressure Vessel Code,
Section XI Relief Request (NRR 00-0058)

On December 17, 2002, during a telephone conference between the NRC and South Carolina Electric & Gas Company (SCE&G), the technical reviewers for the NRC presented several questions regarding the VCSNS relief request RR-II-07 submitted September 16, 2002 (Referenced above) and requested that a response be submitted to facilitate approval of the relief and issue of the Safety Evaluation.

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 subject questions.

Should you have any questions concerning the application or approval of this relief request, please contact Mr. Mel Browne at (803) 345-4141.

Very truly yours,

Stephen A. Byrne

JT/SAB/dr
Attachment(s):

c: N. O. Lorick
N. S. Carns
T. G. Eppink (w/o Attachments)
R. J. White
L. A. Reyes
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File (810.19-2)
DMS (RC-03-0028)

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**South Carolina Electric & Gas Company (SCE&G)
Virgil C. Summer Nuclear Station (VCSNS)
Response to NRC Questions Regarding
Relief Request
RR-II-07**

- 1) On page 3 of the Risk Informed Inservice Inspection Program plan, it says that the version of the VCSNS PRA model used to conduct the RI-ISI analysis was version 3EUP.CAF. Is this the same version that was reviewed during the PRA Pre-Peer Review?**

Response:

The version of the PRA that was pre-peer reviewed is the same major revision number but a different minor revision letter than the version used as a basis for evaluation for the RI-ISI consequence analysis. The version pre-peer reviewed was model 3AUP.CAF. The RI-ISI consequence analysis is primarily based on version 3EUP.CAF.

Based on input from EPRI, a change was made to the 3EUP.CAF model during the RI-ISI work. This change resulted in a different categorization for segments based on secondary side line breaks (SSBI and SSBO initiating events).

A review of the changes between these versions led to the conclusion that none of the changes would impact the results of the pre-peer review.

- 2) On page 2 of the Risk Informed Inservice Inspection Program plan, it says:**

“The NRC Staff Evaluation Report on the VCSNS IPE was issued in May, 1997. Although the NRC review concurred that the VCSNS IPE met the intent of Generic Letter 88-20, the review did note that ‘miscalibration events’ were not explicitly modeled in the analysis of pre-initiator human actions. Subsequently, the VCSNS PRA human reliability analysis has been reviewed. The potential for instrument miscalibration error has been evaluated and (been) determined to be minimal based on a list of calibration practices.”

Explain why the potential for instrument miscalibration is not a problem with respect to the RI-ISI program and the submittal.

Response:

Pre-initiator (type A) instrument miscalibration human errors were dismissed from consideration in the VCSNS PRA because of low probability.

Elements of the instrument calibration process were reviewed during the update of the VCS PRA Human Reliability Analysis in 1999. The probability of instrument miscalibration was found to be minimized by combinations of elements such as:

- calibrations and operational checks have separate procedures,
- redundant channels have separate procedures,
- the as found and as left data are recorded and evaluated to ensure that discrepancies are understood,
- for redundant channels, a channel check is performed after completion of the calibration or operational check at the beginning of each shift and,
- a second technician is utilized to perform a "second check" of critical steps.

Also, while performing a revision of the VCS PRA Common Cause Failure (CCF) Analysis, Westinghouse Electric Company provided the following information with respect to the common cause aspects of instrument miscalibration errors:

It has been the position of many PRA studies that CCF miscalibration errors that can be of any consequence for PRA success criteria for a system are generically very small contributors to system failure probability. The important point to recognize is that, although instrument miscalibration, and setpoint drift events (leading to tech-spec tolerances being exceeded) are reported,

- i) most of these "failures" are not actually severe enough to cause system failure defined in PRAs;
- ii) only those miscalibrations that exceed the setpoints by a large margin in one direction only are consequential (others will cause spurious opening/actuation which would be readily detected immediately, prior to an initiating event - even during startup).
- iii) no CCF miscalibration events are reported in the NUREG/CR-5485. Although reporting "potential events" in its Appendix B, on page 38, NUREG/CR-5485 states that: "most of those CCF events involved degradation of the bistables, rather than actual failures."

Therefore, the low probability of instrument miscalibration errors should not have significant effects on the RI-ISI program.

- 3. Will RI-ISI be updated and submitted every 10 years such as the ASME, Section XI program?**

Response:

Consistent with industry guidelines being developed, it is the SCE&G intent to maintain the RI-ISI program up to date and to submit a new relief request for subsequent intervals, as necessary. As NRC is aware, ASME is in the process of incorporating the RI-ISI methodologies into a non-mandatory appendix of the ASME Boiler and Pressure Vessel Code, Section XI. At the time that the Edition/Addenda of the ASME Code that contains the RI-ISI Appendix is approved for use by the NRC, a relief request should no longer be required.

- 4. Under what conditions would the RI-ISI Program be re-submitted to the NRC before the end of any 10-year interval?**

Response:

It is the SCE&G expectation that only those changes that impact the basis for the NRC's plant specific approval of the RI-ISI application (i.e. the safety evaluation) will require re-submittal to the NRC. Typical examples include [1] a change in the RI-ISI methodology, [2] an extension of the application to additional classes of piping (e.g. Class 3 piping) or [3] an industry operating experience event deemed applicable to the piping segments at V.C. Summer and where the degradation mechanism has the potential severity level to warrant repeated scheduled examinations. SCE&G is committed to maintaining an open dialog with the NRC regarding review of components in the Inservice Examination program where industry experience provides increased knowledge in material reliability.

5. In Section 3.5.1, 2nd paragraph of the submittal - "If unacceptable flaws or relevant conditions are again found similar to the initial problem, the remaining elements identified as susceptible will be examined."

Do we plan on performing these additional examinations during the outage in which they were initially found?

Response:

Yes. It is the SCE&G expectation that all examinations would be performed in accordance with the requirements of the ASME Section XI Code in effect at the time of the initial discovery.