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October 7, 1994
Refer to: RC-94-0258

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

Gentlemen:

Subject: VIRGIL C. SUMMER NUCLEAR STATION
DOCKET NO. 50/395
OPERATING LICENSE NO. NPF-12
ASME SECTION XI RELIEF REQUEST REVISION 1 (NRR 940004)

South Carolina Electric & Gas Company (SCE&G) hereby requests relief from the ASME Section XI requirements for Class 1 and 2 insulated pressure retaining bolted connections which receive VT-2 visual examination during the performance of system pressure testing. This represents a revision to the submittal dated July 26, 1994.

Attachment I contains the component identification, code requirements, proposed alternative testing, and basis for this relief request. This relief request is for Class 1 and 2 pressure retaining bolted connections that are insulated, in systems borted for the purpose of reactivity control. Specifically, SCE&G requests the option to exempt the applicable connections from the requirement of ASME Section XI IWA 5242(a), which specifies that insulation must be removed from pressure retaining bolted connections for VT-2 visual examination during the performance of system pressure testing.

SCE&G contends that the proposed alternative testing provides the equivalent, acceptable level of quality and safety as that provided by the Code.

SCE&G desires relief from the above requirements so as not to create an undue hardship without a compensating increase in quality or safety. The testing as required by the Code presents a significant personnel hazard with the consideration of heat stress and radiation exposure of test and maintenance personnel.

SCE&G requests that the NRC review and approve this relief request as soon as possible.

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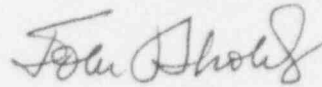


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Should you have any questions, please call Mr. M. J. Zaccone at (803) 345-4328.

Very truly yours,



John L. Skolds

MJZ/JLS/nkk
Enclosure

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RR-06 Rev. 1

BOLTED CONNECTIONS ISI RELIEF REQUEST

Subject:

Removal of insulation from pressure retaining bolted connections, in systems borated for the purpose of reactivity control, during system pressure testing.

Component Identification:

Insulated Class 1 and 2 pressure retaining bolted connections which receive a VT-2 visual examination during the performance of system pressure testing.

Code Requirements:

IWA-5242(a) requires that for systems borated for the purpose of controlling reactivity, insulation shall be removed from pressure retaining bolted connections for visual examination VT-2.

Alternative Testing:

For Code Class 1 (Reactor Coolant System) components and Code Class 2 components located inside the Reactor Containment (Safety Injection, Residual Heat Removal, and Chemical and Volume Control Systems), the following alternative testing will be implemented:

An initial inspection shall be performed each refueling outage immediately following shutdown prior to Reactor Coolant System cooldown and depressurization. This is a hands off inspection for evidence of leakage. There will be no removal of protective covers, shields or insulation at this time. This inspection is also performed to satisfy the requirements of Generic Letter 88-05.

Following plant cooldown and depressurization the insulation will be removed from pressure retaining bolted connections and the VT-2 visual examination will be conducted. Any signs of leakage as evidenced by the presence of boric acid residues will be documented. If the inspection shows no signs of boric acid residues, the insulation will be replaced following the completion of the inspection of the bolted connection. This inspection is also performed to satisfy the requirements of Generic Letter 88-05.

If the presence of boric acid residues is found, a Maintenance Work Request (MWR) or a Nonconformance Notice (NCN) will be generated to perform further evaluation of the bolted connection. Corrective measures will be implemented as required by IWA-5250, Corrective Measures. The insulation will not be re-installed and the test requirements for all corrective measures shall be performed as follows:

For Code Class 1:

While in Mode 5, with the Reactor Coolant System filled and vented, a VT-2 visual examination will be conducted with the system at > 300 psig. If the inspection shows no signs of leakage, the insulation will be replaced following the completion of the inspection of the bolted connection. If the inspection shows that leakage is still present, corrective measures will be taken per IWA-5250 prior to replacement of the insulation.

Following the completion of each refueling, the regularly scheduled system pressure test at normal system operating temperature and pressure as required per Table IWA-5210-1 including a four hour hold time, will be performed with insulation installed. This testing is required each refueling outage prior to plant startup in accordance with Table IWB-2500-1, Examination Category B-P.

For Code Class 2 components located inside the Reactor Containment (Residual Heat Removal and Chemical and Volume Control Systems):

While in Mode 5, the required system pressure test shall be conducted at normal system operating temperature and pressure with the insulation removed from bolted connections. If the test cannot be performed at normal system operating conditions due to the exposure of test personnel to unacceptable radiation or heat stress levels, a VT-2 visual examination will be conducted with the system at > 300 psig. If the inspection shows no signs of leakage, the insulation will be replaced following the completion of the inspection of the bolted connection. If the inspection shows that leakage is still present, corrective measures will be taken per IWA-5250 prior to replacement of the insulation.

The scheduled system pressure test will be performed at normal system operating temperature and pressure as required per Table IWA-5210-1 including a four hour hold time with insulation installed. This testing is required in accordance with Table IWC-2500-1, Examination Category C-H.

For Code Class 2 components located outside the Reactor Containment (Residual Heat Removal and Chemical and Volume Control Systems), the following alternative testing will be implemented:

With the system shutdown and depressurized, the insulation will be removed from pressure retaining bolted connections and the VT-2 visual examination will be conducted. Any signs of leakage as evidenced by the presence of boric acid residues will be documented. If the inspection shows no signs of boric acid residues, the insulation will be replaced following the completion of the inspection of the bolted connection.

If the presence of boric acid residues is found, an MWR or an NCN will be generated to perform further evaluation of the bolted connection. Corrective measures will be implemented as required by IWA-5250, Corrective Measures. The insulation will not be re-installed and the test requirements for all corrective measures shall be performed as follows:

The required system pressure test shall be conducted at normal system operating pressure and temperature with the insulation removed from bolted connections. If the test cannot be performed without exposing test personnel to unacceptable radiation or heat stress levels, a VT-2 visual examination will be conducted with the system at >300 psig. If the inspection shows no signs of leakage, the insulation will be replaced following the completion of the inspection of the bolted connection. If the inspection shows that leakage is still present, corrective measures will be taken per IWA-5250 prior to replacement of the insulation.

The scheduled system pressure test will be performed at normal system operating temperature and pressure as required per Table IWA-5210-1 including a four hour hold time with insulation installed. This testing is required in accordance with Table IWC-2500-1, Examination Category C-H.

Basis for Relief:

IWA-5242(a) specifies that insulation must be removed from pressure retaining bolted connections for VT-2 visual examination during the performance of system pressure testing for the following systems:

- Reactor Coolant System
- Charging and Volume Control System
- Safety Injection System
- Residual Heat Removal

This testing is performed just prior to Start-up at normal system operating pressure and temperature. This would require the removal and restoration of the insulation on system components with operating temperatures of between 200 and 650°F.

The removal and installation of insulation during the performance of system pressure testing inside Reactor Containment presents the following personnel hazards:

Containment ambient temperature; 100 - 120°F.

Temporary work platforms/scaffolding inside reactor containment; Removed prior to entering Mode 4. Ladders would have to be used to inspect many of the bolted connections and replace the insulation.

Temporary shielding, inside and outside Reactor Containment; Removed prior to entering Mode 4. Increased radiation exposure to test personnel.

System/component temperatures:

Reactor Coolant System (tested in Mode 3); 550 - 650°F.

Residual Heat Removal System (tested in Mode 4); 200 - 350°F.

Safety Injection System (tested in Mode 3); 200 - 550°F.

Chemical and Volume Control System (tested in Mode 3); 290 - 500°F.

The system pressure testing of those Code Class 1 and 2 systems which have insulated bolted connections are conducted in Modes 3 and 4. This has the potential to add up to two days to the critical path of the refueling outage.

The alternative testing provides the equivalent acceptable level of quality and safety as that provided by the Code. The inspection of pressure retaining bolted connections and the VT-2 visual examination at reduced temperature and depressurized will provide equivalent indication of leakage as evidenced by the presence of boric acid residue. The corrective measures provide the same level of protection to the health and safety of the public as current Code requirements. Finally, VT-2 visual examination performed at reduced pressure with the insulation removed, along with the system pressure test performed utilizing a four hour hold time with insulation installed, provides an equivalent level of inspection for the identification of conditions which represent a potentially degraded condition.