

Mr. Gary J. Taylor
Vice President, Nuclear Operations
South Carolina Electric & Gas Company
Virgil C. Summer Nuclear Station
Post Office Box 88
Jenkinsville, South Carolina 29065

May 14, 1997

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION - USE OF CODE CASE N-566,
CORRECTIVE ACTION FOR LEAKAGE IDENTIFIED AT BOLTED CONNECTIONS
(TAC NO. M98145)

Dear Mr. Taylor:

The NRC staff, with assistance from its contractor, Idaho National Engineering and Environmental Laboratory (INEEL), is reviewing and evaluating the second 10-year interval inservice inspection program plan associated request to use Code Case N-566 as an alternative to the ASME B&PV Code, Section XI requirements for the Virgil C. Summer Nuclear Station. Additional information is required (Enclosure) from South Carolina Electric & Gas Company in order for the staff to complete its review.

The staff requests that a response be provided within 60 days to meet the staff's inservice inspection program plan review schedule. In addition, to expedite the review process, please send a copy of your response to the INEEL contractor at the following address:

Michael T. Anderson
INEEL Research Center
2151 North Boulevard
P.O. Box 1625
Idaho Falls, Idaho 83415-2209

If you have any questions, please do not hesitate to contact me at (301) 415-1497.

Sincerely,
(Original Signed By)
Allen R. Johnson, Project Manager
Project Directorate II-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Docket No. 50-395

Enclosure: Request for
Additional Information

cc w/encl: See next page

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Mr. Gary J. Taylor
South Carolina Electric & Gas Company

VIRGIL C. SUMMER NUCLEAR STATION

cc:

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REQUEST FOR ADDITIONAL INFORMATION

VIRGIL C. SUMMER NUCLEAR STATION

SECOND 10-YEAR INTERVAL INSERVICE INSPECTION PROGRAM

USE OF CODE CASE N-566 AS AN ALTERNATIVE TO THE ASME CODE

CORRECTIVE ACTION FOR LEAKAGE IDENTIFIED AT BOLTED CONNECTIONS

1. Scope/Status of Review

In accordance with 10 CFR 50.55a(c)(3), 10 CFR 50.55a(d)(2), and 10 CFR 50.55a(e)(2), ASME Code Cases may be used as alternatives to Code requirements. Code Cases that the NRC has approved for use are listed in Regulatory Guide 1.147, Inservice Inspection Code Case Acceptability, with any additional conditions deemed necessary by the NRC. Code Cases not referenced in Regulatory Guide 1.147 may be adopted only if authorized by the NRC on a case-by-case basis. In some cases, use of unapproved Code Cases may be acceptable for use when certain conditions are included. To ensure consistent implementation, licensees proposing the use of currently unapproved Code Case(s) must commit to such conditions, if applicable.

By letter dated February 25, 1997, the licensee, South Carolina Electric & Gas Company proposed the use of Code Case N-566 in lieu of the requirements of IWA-5250(a)(2). The information provided by the licensee in this submittal has been reviewed by the NRC staff.

2. Additional Information Required

Based on the above review, the staff has concluded that the following information and/or clarification is required to complete the licensee's submittal.

In lieu of the requirements of IWA-5250(a)(2), the licensee has proposed to use Code Case N-566, Corrective Action for Leakage Identified at Bolted Connections. Code Case N-566 requires that either (a) the leakage shall be stopped and the bolting and component materials reviewed for joint integrity, or (b) if the leakage is not stopped, the joint shall be evaluated in accordance with IWB-3142.4, Acceptance by Analytical Evaluation. This evaluation would consider the number and condition of bolts, the leaking medium, bolt and component materials, system function, and leakage monitoring as follows:

- A. In the licensee's basis, it is stated that "One option is to stop the leak and review the joint for integrity. This review will consist of cleaning the joint after the leakage is stopped and documenting an inspection of the joint for corrosion or other signs of degradation."

Does the latter sentence, which is not part of the Code Case, represent a step that will be taken in addition to the Code Case? If so, does the inspection of the joint include a visual examination (VT-1 or VT-3) of the bolts? Provide a technical discussion of the inspection that will be performed and the acceptance criteria that will be used.

- B. The first option of the Code Case is to stop the leakage and perform a "review" of the joint integrity. Other plants have provided a detailed and systematic approach to assess joint integrity at leaking bolted connections. Considering that the Code Case requirements are not specifically defined, how will an acceptable level of quality and safety for the bolting be established at the Virgil C. Summer Nuclear Station once the leakage is stopped?
- C. In accordance with Table IWB-2500, Examination Category B-P, the appropriate acceptance standard for the VT-2 visual examination during pressure testing is IWB-3522. IWB-3522.1 describes relevant conditions for a VT-2 visual examination and states that if any of those conditions exist, the component must meet the requirements of IWB-3142 and IWA-5250(a)(2) prior to continued service. In accordance with IWB-3141(b), acceptance of components for continued service shall be in accordance with IWB-3142 through IWB-3144. These paragraphs include acceptance by visual examination, supplemental examination, corrective measures, replacement, as well as, analytical evaluation. Considering that the Code Case disregards a majority of these other requirements, describe how and when these other portions of the Code will be implemented at the Virgil C. Summer Nuclear Station.
- D. The analytical evaluation specified by IWB-3142.4 states that "Components containing relevant conditions shall be acceptable for continued service if an analytical evaluation demonstrates the component's acceptability. The evaluation analysis and evaluation acceptance criteria shall be specified by the Owner. Components accepted for continued service based on analytical evaluation shall be subsequently examined in accordance with IWB-2420(b) and (c)." IWB-2420(b) calls for reexamination in three subsequent periods. Considering that the bolting is the component of concern, how will relevant conditions and associated acceptance criteria be established for the bolting without the use of Code visual examinations (i.e., VT-1) or other nondestructive methods? In addition, describe how reexamination of the bolting will be performed during subsequent periods.

The schedule for timely completion of this review requires that the licensee provide, by the requested date, the above requested information and/or clarifications regarding the proposed alternative for the Virgil C. Summer Nuclear Station.