



South Carolina Electric & Gas Company
P. O. Box 88
Jenkinsville, SC 29065
(803) 345-4040

John L. Skolds
Vice President
Nuclear Operations

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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
RESPONSE TO NOTICE OF VIOLATION
NRC INSPECTION REPORT 91-21

Attached is the South Carolina Electric & Gas Company (SCE&G) response to the violations addressed in the Enclosure of NRC Inspection Report 50-395/91-21.

Per telephone conversation with Mr. David Verrelli on December 30, 1991, a one week extension to the response date for the violations was approved.

SCE&G is not in agreement with the violations (91-21-01 and 91-21-02) as stated. The basis for this disagreement is contained within the attached reply.

If you should you have any questions, please call at your convenience.

Very truly yours

John L. Skolds

ARR:JLS:lcd
Attachment

c: O. W. Dixon Jr.
R. R. Mahan
R. J. White
S. D. Ebnetter
G. F. Wunder
General Managers
C. A. Price
NRC Resident Inspector
J. B. Knotts Jr.
J. W. Flitter
NSRC
RTS (IE 912101 & 912102)
File (815.01)

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RESPONSE TO NOTICE OF VIOLATION
VIOLATION NUMBER 50-395/91-21-01

I. RESTATEMENT OF VIOLATION

10CFR50.55a(g)(4) requires that throughout the service life of a boiling or pressurized water-cooled nuclear power facility, components (including supports) shall meet the requirements set forth in Section XI of the ASME Boiler and Pressure Vessel Code. The applicable edition of the code, the 1977 Edition with Summer 1978 Addenda, for ISI inspection and testing, contains the following requirements:

IWA-2214 states in part that the VT-4 visual examination shall be conducted on mechanical and hydraulic snubbers, component supports and spring loaded and constant weight hangers. The visual inspection shall confirm verification of the settings.

Contrary to the above, during the current refueling outage ISI inspections

- (1) The actual setting of Support No. SIH-170 was not verified to be correct. Instead, it was verified to be within the range of preset cold and hot setting markings.
- (2) The insulation covering the contact surface between the supports and pipe for Support Nos. SWH-154, SWH-157, SWH-159, SWH-161, SWH-163, SWH-167, SWH-168, SWH-169, SWH-208, SWH-209, SWH-210, and SWH-1145 (12 examples) was not removed during ISI inspection. Because of this, incomplete inspections were conducted in that critical support parts (including bolted connections) buried within the insulation were not inspected.

II. SCE&G POSITION ON THE VIOLATION

SCE&G denies the violation as stated above.

III. BASIS FOR SCE&G POSITION

ITEM 1 - Spring Can Settings

ASME Subsection XI, paragraph IWA-2214.b states; "The VT-4 visual examination shall confirm functional adequacy, verification of settings, or freedom of motion." SCE&G accomplishes the verification of setting for spring cans by verifying that the spring setting is within the design area of travel, irrespective of system condition.

The inspector concluded that this method of verifying spring can settings was not acceptable because a spring can could potentially be found at the hot setting mark with the system in the cold condition, and the inspection would not identify a discrepancy. Additionally,

the inspector concluded that by only verifying the setting within this range the spring can could be outside the tolerances permitted by design calculations or procedures.

SCE&G undertook an extensive pre start-up spring can setting program which set, verified, and re-verified each spring can setting after thermally cycling systems (snubbers and support/restraint gaps were also part of this program). The intent of this program was to define and mark the range of spring can travel during normal plant operation. ASME Code designed systems of the vintage of VCSNS utilize snubbers in conjunction with spring cans for the dynamic and static support of piping (snubbers restrain dynamic loads, spring cans support static loads). Any discrepancy present would be identified in the snubber "L" dimension (stroke setting) inspection and would be investigated with corrective action taken.

SCE&G's inservice inspection program not only assures the functionality of spring cans and their attached system, but also facilitates inspections during any normal system condition (ambient through normal operating temperature), and minimizes the required time spent in any area (to maintain doses ALARA). The verification of settings for spring cans is accomplished by assuring the spring can setting is within its normal range of travel and no interferences exist that could restrict its travel. During functional testing, snubber "L" dimensions are measured and evaluated. These "L" dimensions are related to the settings of associated spring cans and are used to identify any significant discrepancy in the spring can settings. Taking the exact setting of a spring can, when its setting relates to the "L" dimensions of snubbers that are measured and reviewed in detail, is not necessary.

The method used by SCE&G for the verification of the setting of spring cans is acceptable and provides SCE&G with meaningful data to assure the functionality of piping systems.

ITEM 2 - REMOVAL OF INSULATION

ASME Section XI (the code) requires VT-3 and VT-4 type visual examinations on code pipe supports to comply with the VCSNS Inservice Examination (ISE) plan. The code of record for Virgil C. Summer Nuclear Station (VCSNS) is the 1977 Edition through Summer 1978 Addenda for ISE. In the Winter 1977 Addenda, ASME defined a VT-3 examination as follows:

IWA-2213 Visual Examination, VT-3

- (a) The VT-3 visual examination shall be conducted to determine the general mechanical and structural conditions of components and their supports such as the presence of loose parts, debris, or abnormal corrosion products, wear, erosion, corrosion, and the loss of integrity at bolted or welded connections.

- (b) The VT-3 visual examination may require, as applicable to determine structural integrity, the measurement of clearances, detection of physical displacement, structural adequacy of supporting element's connections between load carrying structural members and tightness of bolting.
- (c) For component supports and component interiors, the visual examination may be performed remotely with or without optical aids to verify the structural integrity of the component.

These requirements clearly state that this type examination is for general integrity of the supports.

Using the above information for background, SCE&G currently utilizes IWF-1300e for support inspection which allows the inspection boundary of the support to be the outer surface of the insulation.

IWF-1300e states that if a support is non-integral and carries the weight of the component or serves as a structural restraint in compression, then the support boundary may be moved to the outer surface of the insulation.

SCE&G's position on this paragraph is that a support under constant loading allows for validation of the integrity of that support for all design load conditions through visual inspections. If an anomaly such as split or damaged insulation, a rotated clamp, etc., is noted, then the need for a more detailed inspection would be evaluated.

The code further supports SCE&G's position in interpretations XI-1-86-02 and XI-1-86-11 (see enclosed interpretations) by describing when insulation must be removed. SCE&G has confirmed its position by contacting its authorized Inservice Inspection Agent (Hartford Steam Boiler), and they have concurred with and support our position. In addition, SCE&G has inquired of several utilities and found that their implementation of IWF-1300e is identical to ours. However, to ensure our interpretation is what was intended by the code, SCE&G is submitting an inquiry to ASME to provide a formal response to this issue. SCE&G will notify the NRC of the result of this inquiry. If the inquiry does not support SCE&G's interpretation, the current inspection procedures and plans will be revised and inspections of affected supports, with insulation removed, will be initiated.

It is SCE&G's intent to perform the code required examinations. SCE&G believes that the ASME requirements for VT-3 examinations of code supports is currently being met by the VCSNS program.

REPLY TO NOTICE OF VIOLATION
VIOLATION NUMBER 50-395/91-21-02

I. RESTATEMENT OF VIOLATION

T.S. 6.8.1.A requires that written procedures be established, implemented and maintained for activities referenced in Appendix A of Reg. Guide 1.33, Rev. 2. Appendix A states that specific procedures should be written for surveillance tests and inspections.

Contrary to the above:

Procedures QSP-505, STP-803.002, and STP-803.003 do not contain adequate inspection methods and criterion to check and verify that the gap between the spacer-washer and the bushing-bearing for snubber and sway strut connections do not exceed the manufacturers required maximum GAP of 1/8-inch during ISI inspections or Technical Specification inspections. Six examples of excessive gaps, up to 1/2", were discussed.

II. SCE&G POSITION ON THE VIOLATION

SCE&G denies the violation as stated above.

III. BASIS FOR SCE&G POSITION

The violation presented at the NRC exit meeting and discussed during the inspection with the NRC and SCE&G's Licensing and Engineering Departments concerned SCE&G not measuring the gap between the spherical bearing of a snubber/strut and the spacers in the end attachment. The violation documented in 50-395/91-21-02 expanded this violation to include the gap between the spherical bearings of snubbers/struts and the spacers in the pipe clamps.

At VCSNS, pipe clamps and end attachments are installed, inspected and undergo maintenance and inservice inspection in accordance with vendor recommendations listed in the Load Capacity Data (LCD) sheets. The vendor has not specified a required maximum gap for inspection purposes, only that the ears of the clamp be verified to be parallel. This verification is accomplished by SCE&G. It is SCE&G's position that once the snubber/strut is assembled per the manufacturer's instructions the configuration of the pipe clamps/end attachments will not change in normal service. Also, there is no ASME requirement for periodic gap measurement. Therefore, there is no need for the periodic inservice inspection of the gap size discussed in the violation.

SCE&G would like to clarify the following statement in the violation "Per the licensee's engineers, the installation tolerance for the gap was 1/8" which was based on the manufacturer's specifications." The 1/8" gap discussed with the inspector was a tolerance that SCE&G

established, with the support of the vendor, for the generic replacement of spacers. This is not an inspection tolerance/criteria.

Additionally, SCE&G has vendor evaluations which were shown to and discussed with the inspector that demonstrate the functionality of snubber/strut assemblies with the paddle plate fully displaced to one side of the ears of the attachment (i.e., containing no spacers). This results in the worst case eccentric loading on the attachment pin and bounds the condition identified in this violation. The gaps identified by the inspector have also been evaluated by the vendor and the snubbers/struts were determined to be capable of performing their design basis function.

In summary, SCE&G follows the vendor's recommendations for installation and inspection of snubbers/struts. SCE&G does not support the need for a periodic gap inspection since the component condition will not change.

Interpretation: XI-1-86-01

Subject: Section XI, Division 1, Testing of Check Valves During Cold Shutdown (1974 Edition)

Date Issued: October 8, 1985

File: BC82-665B

Question (1): According to the requirements of Section XI, Division 1, is a reactor considered to be in cold shutdown if the reactor was placed in the cold critical condition and then returned to cold shutdown without ever being placed in the hot standby (normal operating pressure and temperature) condition?

Reply (1): Section XI does not define cold shutdown.

Question (2): When testing check valves in a reactor meeting the requirements stated in Question (1), and where the duration of shutdown is greater than 3 months, would the check valves have to be retested after the 3 month period to meet the requirements of IWV-3522?

Reply (2): If the time period was a single cold shutdown, then full-stroke exercise of those valves which can only be stroked during cold shutdown would only be required once. If the time period included two cold shutdowns, and 3 months or longer had elapsed between the last test and second shutdown, then another test would be required.

Interpretation: XI-1-86-02

Subject: Section XI, Division 1, IWF Integral Attachment (1977 Edition With Addenda Through Summer 1979)

Date Issued: October 8, 1985

File: BC82-753

Question: Is it permissible in Section XI to define the IWF boundary from the building structure to the surface of the component insulation for supports which are attached to integrally welded attachments that are exempt?

Reply: No. As indicated in IWF-1300(e), only when a mechanical connection of a nonintegral support is buried within the insulation may the IWF boundary be extended to the outer surface of the insulation, provided the support either carries the weight of the component or serves as a structural restraint in compression.

The IWF/integral attachment boundary shall be established using the same IWF rules as if the integral attachment was not exempt.

Interpretation: XI 1-86-11

Subject: Section XI, Division 1, IWF Requirements for Class 1, 2, and 3 Component Supports

Date issued: November 21, 1985

File: BC85-253A

Question (1): Table IWC-2500-1, Examination Category C-A, requires a volumetric examination of shell circumferential welds in pressure vessels only at a gross structural discontinuity. Based on this requirement, does IWF-2510(a) require the examination of all component supports for each pressure vessel selected for examination in the first inspection interval, even though only a portion of the pressure retaining welds in the vessel are subject to examinations?

Reply (1): Yes.

Question (2): Is a piping system defined by operating function, e.g., reactor coolant system, residual heat removal system, feedwater system, main steam system?

Reply (2): Section XI does not define a piping system.

Question (3): Certain pressure vessels are subject to volumetric examination even though the connecting piping is exempt based on the diameter of the pipe. Does IWF-2510(a) require the examination of any of the component supports of the adjacent exempt piping?

Reply (3): No.

Question (4): IWF-1300(e) describes a mechanical connection of a nonintegral support that is "buried" within the component insulation. Does "buried" as used in IWF-1300(e) include insulation designed for removal during scheduled inservice inspection?

Reply (4): Yes.

Question (5): Do IWF-2510 and IWF-1300(e) require the removal of that insulation necessary to perform inspection of all component supports that can not be shown to carry the weight of the component or serve as a structural restraint in compression?

Reply (5): Yes.