



February 1, 2012

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

Dear Sir / Madam:

Subject: VIRGIL C. SUMMER NUCLEAR STATION (VCSNS) UNIT 1
DOCKET NO. 50-395
OPERATING LICENSE NO. NPF-12
RESPONSE TO NRC REQUEST FOR ADDITIONAL INFORMATION
(TAC NO. ME6879)
(RR-III-07) Risk-Informed Extension of the Reactor Vessel In-Service
Inspection Interval

This letter provides South Carolina Electric & Gas Company's (SCE&G) response to the Request for Additional Information (RAI) documented by NRC letter dated January 9, 2012 (ADAMS Accession No. ML12004A071) regarding the VCSNS Reactor Vessel In-Service Inspection Interval. Pursuant to 10 CFR 50.55a(a)(3)(i), SCE&G requested an alternative to the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI, Paragraph IWB-2412, Inspection Program B. VCSNS proposes to extend the inspection interval from 10 years to 20 years for methods specified in ASME, Section XI, Paragraph IWB 2500 Examination Categories B-A, "Pressure Retaining Welds in Reactor Vessel" and B-D "Full Penetration Welded Nozzle Welds." Response to the request for information is provided within the Attachment.

Should you have questions, please contact Mr. Bruce L. Thompson at (803) 931-5042.

I certify under penalty of perjury that the foregoing is true and correct.

2/1/12
Executed on

Thomas D. Gatlin

JMG/TDG/gr
Attachment: Response to RAI

c:	K. B. Marsh	W. M. Cherry	P. Ledbetter
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NRC

ATTACHMENT

VIRGIL C. SUMMER NUCLEAR STATION, UNIT NO. 1
REQUEST FOR ADDITIONAL INFORMATION (TAC NO. ME6879)
(RR-III-07) Risk-Informed Extension of the Reactor Vessel In-Service Inspection Interval

By letter dated August 16, 2011 (Agencywide Documents Access and Management System Accession No. ML11231A250), South Carolina Electric and Gas Company (SCE&G) submitted a proposed alternative to the American Society of Mechanical Engineers, Boiler and Pressure Vessel Code (ASME Code), Section XI Inservice Inspection (ISI) requirements regarding examination of certain reactor pressure vessel welds for Summer. In accordance with Title 10 of the Code of Federal Regulations, Part 50, Section 50.55a(a)(3)(i), and the Nuclear Regulatory Commission's (NRC's) safety evaluation approving the use of WCAP-16168-NP-A, Revision 2, "Risk-Informed Extension of the Reactor Vessel In-Service Inspection Interval," the NRC staff requires the following information to continue its review.

- 1. Regarding observed indications from the most recent ISI interval examinations at Summer, as documented in Table 2 of the Proposed Alternative, clearly state the location and size of the one indication that was found in the plate material of the reactor pressure vessel beltline area. Identify the plate material in which the indication was located and identify the inspection methodology used. Was this indication observed in previous ISI interval inspections? Did the size of the indication change during the course of the subsequent ISI inspection? If there was a change in the size of the indication, is that change attributed to improved inspection procedures or an aging mechanism?***

[VCSNS Response]

The indication is adjacent to intermediate shell longitudinal weld BC (Item 1 in Table 3 of the Proposed Alternative) and is located in intermediate shell plate A9154-1 (Item 6 in Table 3 of the Proposed Alternative). This indication is 1 inch in length, 0.125 inches in through-wall extent (2a dimension), and is embedded with an 'S' dimension of 0.26 inches (as measured from the cladding-to-base-metal interface). The measured cladding thickness in the ISI report is 0.19 inches which provides a total embedded depth of 0.45 inches.

This indication was observed in the second ISI interval inspection only, though the characteristics of the flaw do not support concluding the indication to be service-induced. It is likely that the indication was present but not recorded during the first ISI interval inspection. The second ISI interval examination was an Appendix VIII (PDI) examination with a much higher sensitivity than the first ISI interval Section XI/Regulatory Guide 1.150 examinations.

For the first ISI interval examination, calibration was performed with the responses from 0.125 inches diameter side drilled holes normalized to 80 percent full screen height (FSH), which is 100 percent Distance Amplitude Correction (DAC). Recording criteria was, for the vessel inner 25 percent thickness, at 20 percent DAC or 16 percent FSH. For the second ISI interval PDI examination, calibration was performed with the responses from 0.063 inches diameter side drilled holes set to 80 percent full screen and then increased by 12 decibels (dB). The recording criteria was to record all valid flaws. The relative gain difference between the two examinations, considering both the difference in calibration reflector size and the addition of 12 dB, was approximately 18 dB or 8:1. Since the recorded amplitude of the indication in question was a maximum of 63 percent FSH, for the second ISI interval examination, it would have resulted in a response of approximately 8 percent FSH, or approximately 6dB below the recording threshold, for the first ISI interval examination.