



June 4, 2015
RC-15-0087

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

Attn: S. A. Williams

Dear Sir / Madam:

Subject: VIRGIL C. SUMMER NUCLEAR STATION (VCSNS) UNIT 1
DOCKET NO. 50-395
OPERATING LICENSE NO. NPF-12
REQUEST RELIEF FROM ASME CODE REQUIREMENTS IN VCSNS
4TH TEN YEAR INSERVICE INSPECTION INTERVAL
RR-4-08 ISI SNUBBER AND ASSOCIATED HARDWARE EXAMINATION
REQUIREMENTS
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

References: 1. SCE&G Letter from Thomas D. Gatlin to NRC Document Control Desk,
"Request Relief from ASME Code Requirements in VCSNS 4th Ten Year
Inservice Inspection Interval, RR-4-08 ISI Snubber and Associated Hardware
Examination Requirements," dated February 19, 2015 [ML15055A588]

2. NRC Letter from Shawn A. Williams to Thomas D. Gatlin, "Virgil C. Summer
Nuclear Station, Unit No. 1, Request for Additional Information Regarding
Snubber Program Alternative Request (TAC NO. MF5775)," dated May 5, 2015
[ML15118A380]

South Carolina Electric & Gas Company (SCE&G), acting for itself and as agent for South Carolina Public Service Authority pursuant to 10 CFR 50.55a(z)(1), requested relief associated with the fourth inservice inspection (ISI) interval from ASME code requirements per Reference 1. NRC review of this relief request determined that additional information was required and a request for additional information (RAI) was issued per Reference 2. Attachment 1 of this submittal contains SCE&G's response to the RAIs dated May 5, 2015. In addition, revised Sections 2 and 7 of RR-4-08 have been included in Attachment 2 (Revised RR-4-08) of this submittal.

This letter contains no new regulatory commitments.

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If you have any questions regarding this submittal, please contact Mr. Bruce L. Thompson at (803) 931-5042.

Very truly yours,



Thomas D. Gatlin

TS/TDG/wt

Attachment 1: VCSNS Response to Request for Additional Information
Attachment 2: Revised RR-4-08

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**VIRGIL C. SUMMER NUCLEAR STATION (VCSNS) UNIT 1
DOCKET NO. 50-395
OPERATING LICENSE NO. NPF-12**

ATTACHMENT 1

VCSNS RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

REQUEST FOR ADDITIONAL INFORMATION
ALTERNATIVE REQUEST
REGARDING THE SNUBBER PROGRAM
VIRGIL C. SUMMER NUCLEAR STATION, UNIT NO. 1
DOCKET NUMBER 50-395

The U.S. Nuclear Regulatory Commission (NRC) staff reviewed the South Carolina Electric & Gas Company (SCE&G) alternative request dated February 19, 2015 (Agencywide Documents Access and Management System Accession No. ML15055A588), for the Virgil C. Summer Nuclear Station, Unit 1. The NRC staff has determined that the following request for additional information (RAI) is required to complete its review.

RAI No. 1

In submitted relief request, two different ASME Codes are being used (a) ASME OM Code for snubbers (pin-to-pin), and (b) ASME Boiler & Vessel Code, Section XI for snubber associated attachment hardware (pin-to-pipe and pin-to-structure) excluding integral attachments. The submittal states ASME Section XI is 2007 Edition with 2008 Addenda. Please verify that ASME OM Code 2004 Edition will be used.

SCE&G Response

Virgil C. Summer Nuclear Station (VCSNS), Unit 1 is currently using the 2004 Edition of the OM Code with the 2005 and 2006 Addenda for the snubber testing and inspections. See Attachment 2 of this submittal for a revision to RR-4-08, Section 2.

RAI No. 2

In Relief Request RR-4-08, Section 4, "Reason for Request," it states that "VCSNS Unit 1 is required to perform VT-3 visual examination on Class 1, 2, and 3 supports, including attachment hardware, per ASME Section XI. VCSNS is also required to perform visual examinations and testing on snubber assemblies in accordance with ASME OM Code, Subsection ISTD. When incorporating the criteria of Subsection ISTD into the Snubber Program, VCSNS Unit 1 will update Surveillance Test Procedure STP-803.002, Mechanical Snubber Visual Examination to include the visual examination of snubber attachment hardware (pin-to-pipe and pin-to-structure) along with the visual examination of the snubber assembly (pin-to-pin). With the proposed procedure update, the visual examination criteria of snubber program will meet the requirements established by ASME Section XI.

(1) Please verify and confirm that the proposed visual examination criteria of the Snubber Program will be identical to the VT-3 visual examination per IWA-2213 (IWA-2213(a) thru IWA-2213(g)) of ASME Section XI, Edition 2007 with 2008 Addenda.

(2) The relief request did not mention details about hydraulic snubbers and the proposed update of the procedure is related to mechanical snubbers. Please verify that hydraulic snubbers are not installed at VCSNS or VCSNS hydraulic snubbers procedures will be revised to add the VT-3 requirements.

SCE&G Response

- (1) Snubber visual examinations at VCSNS are performed by certified VT-3 Examiners, and the proposed visual examination criteria will meet the intent of IWA-2213 (IWA-2213(a) through IWA-2213(g)).

IWA-2213(a) reads as follows: VT-3 examination is conducted to determine the general mechanical and structural condition of components, and their supports by verifying parameters such as clearances, settings, and physical displacements; and to detect discontinuities and imperfections, such as loss of integrity at bolted or welded connections, loose or missing parts, debris, corrosion, wear, or erosion. VT-3 includes examination for conditions that could affect operability or functional adequacy of constant load and spring-type supports.

The acceptance criteria in the VCSNS Mechanical Snubber Visual Examination Test Procedure, STP-803.002, will require that the snubber meet all the following conditions to be acceptable for operability:

1. No physical damage to the snubber or its support assembly.
2. Snubbers and support assembly shall be free of arc strikes/weld splatter.
3. Snubber shall be free of any foreign material (i.e., paint, grease, albi, tape, grit, boron, etc.) that would interfere with its normal operation.
4. Snubber is not bound against obstruction which will restrict the action of the snubber.
5. Snubber bolts, screws, threaded fasteners on piping components and structural attachments are in place and secured.
6. Pivot pins are in place, secure and show no presence of wear corrosion or loss of integrity.
7. Spherical bearings shall be centered within the allowable offsets and free of rust.
8. Attachment welds are to be examined for any cracking. Plates, pipe clamps, etc. are to be observed for deformation or other conditions which would indicate any portion of the system has been overstressed.
9. Snubber assembly alignment is within applicable angular tolerance.

STP-803.002 also inspects for the following deficiencies which are acceptable for operability, however a condition report is generated and the test deficiency is denoted on the work document and is required to be corrected:

1. Spacers that are broken, missing, or have obvious pitting shall be replaced.

2. Spherical bearings that are not centered, but acceptable shall be re-centered.
3. Paint on spherical bearing required the performance of a swing clearance check.
4. Broken or missing cotter pins or retaining rings shall be replaced.
5. Snubber orientation corresponds with the design drawing.

The inspection criteria in STP-803.002 closely parallel the code VT-3 visual examination requirements and will meet the intent of IWA-2213.

- (2) There are no hydraulic snubbers installed at VCSNS, Unit 1.

RAI No. 3

In a VCSNS, Unit 1, Technical Specification amendment request submittal dated October 3, 2013 (ADAMS Accession No. ML13281A190), Attachment 5, "Snubber Examination, Testing, and Service Life Monitoring (SLM) Program Plan."

(a) Section 1.3 states, in part, that inspection, testing and SLM of snubbers shall be implemented and performed in accordance with the requirements of SAP-101, "Station Administrative Snubber Program Document". Please verify and confirm that VT-3 will be implemented in STP-101 along with Procedure STP-803.002.

(b) Section 4.2, states that VCSNS will be implementing Code Case OMN-13 to extend visual examination of snubbers (pin-to-pin) frequency at least once every 10 years. Please provide the frequency of visual examination of snubbers associated attachment hardware (pin-to-pipe and pin-to-structure) during this extended 10 year interval.

SCE&G Response

- (a)** The Station Administrative Procedure for snubbers at VCSNS is SAP-0161, *Snubber Program Document*. The VCSNS Surveillance Test Procedure for the visual examination of snubbers is STP-803.002, *Mechanical Snubber Visual Examination*. For clarity, SAP-0161 is referenced in the Snubber Program Plan in ML13281A190 versus SAP-101 or STP-101. Section 1.3 of The Snubber Examination, Testing, and Service Life Monitoring Program Plan states that "the inspection, testing, and the service life monitoring ...shall be implemented and performed in accordance with SAP-0161, Station Administrative Snubber Program Document."

SAP-0161 also states that visual surveillance of mechanical snubbers at VCSNS is conducted in accordance with STP-803.002. All of the surveillance requirements would be contained in STP-803.002. In addition, snubber visual examinations at VCSNS are performed by certified VT-3 examiners. The Mechanical Snubber Visual Examination Procedure, STP-803.002, will be enhanced to proceduralize the current practice of using VT-3 certified examiners.

- (b)** VCSNS has a snubber population of 662 snubbers. Of these, 453 are classified as Essential Snubbers and are subjected to the requirements of the ASME OM Code (Class 1, Class 2, Class 3, or Quality Related). Typically, VCSNS tests approximately 125 snubbers

each refueling outage. With OMN-13 implemented, the complete support assembly of the entire snubber population would be examined within the 10 years. Therefore, a larger population of examinations is performed on the associated attached hardware of snubbers than what is required by ASME Section XI, Table IWF-2500-1.

RAI No. 4

While using OMN-13 for snubbers during the extended interval of 10 years, if the number of unacceptable snubbers (pin-to-pin) exceeds the ISTD-4252-1 limits (these unacceptable snubbers can be found during non-inspection activities such as walkdowns or any other events i.e. water hammer, etc.), what action will be taken and how will these findings align with the supports and attachments inspection.

SCE&G Response

Condition reports are generated to address the unacceptable snubbers and the inspection interval will be reduced in accordance with ISTD-4252-1. SAP-0161 requires that the cumulative number of unacceptable snubbers be tracked and maintained throughout the ten year interval. The procedure also provides guidance on how to adjust the examination interval in accordance with Code Case OMN-13 if necessary.

RAI No.5

IWF-2430(a) states, in part, that component supports examinations performed in accordance with Table IWF-2500-1 that reveal flaws or relevant conditions exceeding the acceptance standards of IWF-3400, and that require corrective measures, shall be extended, during the current outage, to include the component supports immediately adjacent to flawed supports. Please explain how this situation (to include supports adjacent to flawed supports) will be considered, while using the proposed relief request to perform the visual examination of snubbers (pin-to-pin) and associated attachment hardware (pin-to-pipe and pin-to-structure, excluding integral attachments). (Note: The adjacent flawed supports could be with or without a snubber).

SCE&G Response

STP-803.002 directs the initiation of a nonconformance (NC) evaluation when the snubber examination reveals an unacceptable snubber. The procedure also requires the unacceptable snubber be functionally tested per engineering direction.

SAP-0161 requires the following actions for a failed snubber:

1. Initiation of a CR.
2. Determination of the probable cause of degradation.
3. Assessment of the potential effects on the piping system or component to which the snubber is attached.

The evaluation of the potential effects on the piping system meets the intent of the IWF-2430(a) to identify other supports or components that could be affected by the same failure mode of the unacceptable support.

RAI No. 6

NRC staff believes that the contents of referenced precedence documents listed in the Section 7, "Precedents," are different than the submitted relief request of RR-4-08. Please verify and revise as appropriate.

SCE&G Response

VCSNS requests that the precedents be removed as they do not specifically apply to the VCSNS request to use an alternative to Section XI. See Attachment 2 of this submittal for a revision to RR-4-08, Section 7.

**VIRGIL C. SUMMER NUCLEAR STATION (VCSNS) UNIT 1
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ATTACHMENT 2

REVISED RR-4-08

**SOUTH CAROLINA ELECTRIC & GAS COMPANY (SCE&G)
VIRGIL C. SUMNER NUCLEAR STATION (VCSNS) UNIT 1
RELIEF REQUEST RR-4-08**

1. ASME Code Component Affected

ASME Code Classes: Code Classes 1, 2 and 3

References: ASME Section XI, IWF-1220 (2007)
ASME Section XI, IWF-1300 (2007) and
Figure IWF-1300-1(f) (2007)
ASME Section XI, IWF-2500 (2008a) and
Table IWF-2500-1 (2007)
ASME Section XI, IWF-3410 (2007)
ASME OM Code, Subsection ISTA (2004)
ASME OM Code, Subsection ISTD (2004)

Examination Category: F-A

Item Numbers: F1.10, F1.20, F1.30 and F1.40

Description: Visual Examination of Snubber Attachment Hardware
(Pin-to-Pipe and Pin-to-Structure), Excluding
Integral Attachments

Components: Code Class 1, 2 and 3 Snubbers

2. Applicable Code Edition and Addenda

2004 Edition of the OM Code with the 2005 and 2006 Addenda

3. Applicable Code Requirement

The examination requirements for supports and associated attachment hardware are specified in ASME Section XI, IWF-2500. Table IWF-2500-1, Examination Category F-A requires that visual VT-3 examinations be performed on Class 1, 2 and 3 piping and component supports.

The examination and testing of Snubbers is governed by ASME OM Code, Subsection ISTD as per ASME Section XI, IWF-1220 and 10 CFR 50.55a(b)(3)(v)(B).

When determining the boundaries for support examinations, IWF-1300(g) states,

“All integral and nonintegral connections within the boundary governed by IWF rules and requirements are included.”

This verifies that attachment hardware is included in the examination boundary. The interface boundaries for the examination of Snubbers and snubber attachment boundaries for the examination of Snubbers and snubber attachment hardware is further addressed in IWF-1300(h) which states,

“The examination boundary of a support containing a snubber shall not include the connection to the snubber assembly (pins).”

These boundaries are shown graphically in Figure IWF-1300-1(f).

4. Reason for Request

VCSNS Unit 1 is required to perform VT-3 visual examinations on Class 1, 2 and 3 supports, including attachment hardware, per ASME Section XI. VCSNS is also required to perform visual examinations and testing on snubber assemblies in accordance with ASME OM Code, Subsection ISTD. When incorporating the criteria of Subsection ISTD into the Snubber Program, SCE&G included the visual examination of the snubber assembly (pin-to-pin). VCSNS Unit 1 will update Surveillance Test Procedure STP-803.002, *Mechanical Snubber Visual Examination*, to include the visual examination of snubber attachment hardware (pin-to-pipe and pin-to-structure, excluding integral attachments). With the proposed procedure update, the visual examination criteria of the Snubber Program will meet the requirements established by ASME Section XI. Having two nearly identical sets of requirements for the visual examination of snubber attachment hardware would require the performance of redundant examinations and cause unnecessary confusion in the sample selection, data collection and documentation of these examinations.

5. Proposed Alternative and Basis for Use

Proposed Alternative

Pursuant to 10 CFR 50.55a(z)(1), SCE&G proposes to perform the visual examination of snubbers and associated attachment hardware (pin-to-pipe and pin-to-structure, excluding integral attachments) upon revision to STP-803.002, which will provide the requirements necessary to implement and administer a comprehensive snubber surveillance, testing, maintenance, and service life monitoring program. STP-803.002 is written to meet ASME OM Code, Subsection ISTA, “General Requirements” and Subsection ISTD, “Preservice and Inservice Examination and Testing of Dynamic Restraints (Snubbers) in Light-Water Reactor Nuclear Power Plants.”

The examination of integral attachments will be in accordance with ASME Section XI, Table IWB-2500-1 (Examination Category B-K), Table IWC-2500-1 (Examination Category C-C) and Table IWD-2500-1 (Examination Category D-A).

Basis for Use

The examination and testing requirements for snubbers are documented in VCSNS STP-803.002. The proposed revision to the procedure will require an examination frequency that establishes a high level of confidence in the acceptability of the plant's snubbers. In addition, the revised procedure will require the visual examination of snubber attachments, support attachments and attachments to the supporting foundation, including nuts, bolts, studs, welds, pins spacers and embedments. Upon revision, the visual examination criteria established in STP-803.002 will meet the examination criteria specified in ASME Section XI, IWF-3410. Performing both the ASME Section XI and Snubber Program examinations would be redundant and would not improve the level of quality and safety in the plant. In addition, it would increase the occupational radiation exposure due to the repetitive activity.

The examinations on integral attachments that are associated with snubber attachment hardware are not included in the scope of this request for relief. The examination of these items will continue in accordance with ASME Section XI.

6. Duration of Proposed Alternative

SCE&G will implement the alternative requirements during the fourth 10-year inservice inspection (ISI) interval at VCSNS Unit 1 which began January 1, 2014 and ends December 31, 2023.

7. Precedents

No precedents