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SCE&G®
A SCANA COMPANY

October 3, 2013
RC-13-0151

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

Dear Sir/Madam:

Subject: VIRGIL C. SUMMER NUCLEAR STATION UNIT 1 (VCSNS)
DOCKET NO. 50-395
OPERATING LICENSE NO. NPF-12
REVISION TO LICENSE AMENDMENT REQUEST - LAR 12-06014
CHANGES TO SNUBBER SURVEILLANCE REQUIREMENTS

Reference: Letter from T. D. Gatlin (VCSNS) to Document Control Desk (NRC), "License Amendment Request - LAR 12-06014 Changes to Snubber Surveillance Requirements," dated April 2, 2013 (RC-13-0048) [ML13095A107]

South Carolina Electric & Gas Company (SCE&G), acting for itself and as an agent for South Carolina Public Service Authority, is submitting a revision to the Attachments that were enclosed in the referenced License Amendment Request (LAR) to the Technical Specifications (TS) for Virgil C. Summer Nuclear Station Unit 1 (VCSNS) dated April 2, 2013 (ML13095A107).

VCSNS is providing clarification to items from the referenced LAR through additional information located in the attachments. Attachment 1 provides a revision to the description and assessment of the proposed changes. Attachment 2 provides the existing TS page marked up to show the proposed changes. Attachment 3 provides a revised (clean) TS page. Attachment 4 contains a detailed comparison of the current TS 4.7.7 Surveillance Requirements (SR) to the proposed Inservice Inspection (ISI) program requirements and justification of changes. Attachment 5 provides a copy of the proposed Snubber Program Plan. These revised pages supersede the previously submitted pages.

A047
NRR

This letter contains no commitments. If you should have any questions, please contact Mr. Bruce L. Thompson at (803) 931-5042.

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

10/03/13
Executed On

Thomas D. Gatlin

WLT/TDG/sq
Enclosure:
Description of Revisions to LAR 12-06014

Attachments:
1. Description and Assessment "revised"
2. Proposed Technical Specification Changes (Mark-Up) "revised"
3. Technical Specification Pages "revised"
4. TS 4.7.7 SR Comparison to ISI Program Requirements "revised"
5. Proposed Snubber Program Plan "revised"

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

Enclosure 1

Description of Revisions to LAR 12-06014

VCSNS Unit 1 is providing clarification to items from LAR 12-06014, Changes to Snubber Surveillance Requirements. VCSNS Unit 1 has defined the fourth 10-year Inservice Inspection (ISI) as beginning January 1, 2014 and ending December 31, 2024. VCSNS Unit 1 has also updated the proposed Technical Specification (TS) changes to include reference in TS 4.7.7 Surveillance Requirements (SR) to the proposed TS 6.8.4.n Snubber Testing Program. These changes are needed to enhance the clarity of the information provided in LAR 12-06014.

Attachment 1 provides a revision to add the fourth ISI interval end date to pages 1 and 3 of the Description and Assessment attachment submitted with LAR 12-06014. The original submittal of LAR 12-06014 (RC-13-0048) is now listed as a reference on page 7. Attachment 2 provides a revision to page 3/4 7-16 of the existing TS pages marked up to include reference to TS 6.8.4.n Snubber Testing Program in TS 4.7.7 SR. Attachment 3 provides a revised (clean) TS page 3/4 7-16. Attachment 4 contains a revised version of the detailed comparison of the current TS 4.7.7 SR to the proposed ISI program requirements and justification of changes. This revision clarified the visual inspection interval on pages 2 and 6. Attachment 5 provides a revised copy of the proposed Snubber Program Plan, which now includes the fourth ISI interval start and end date on page 4. Attachments 1, 4, and 5 supersede the previously submitted Attachments 1, 4, and 5 from the referenced letter (RC-13-0048). TS page 3/4 7-16 mark up and revised pages will replace previously submitted page 3/4 7-16 from the referenced letter (RC-13-0048).

A table of the revisions is included on Page 2 of this Enclosure.

SCE&G - Revisions to LAR 12-06014		
Revision Number	Location in Original Submittal of LAR 12-06014	Description of Change
1	Attachment 1, Page 1	Added interval end date
1	Attachment 1, Page 3	Added interval end date
1	Attachment 1, Page 7	Added RC-13-0048 as a reference
1	Attachment 2, Page 2	Added reference of TS 6.8.4.n to TS 4.7.7
1	Attachment 4, Page 2	Clarified visual inspection
1	Attachment 4, Page 5	Clarified visual inspection
1	Attachment 4, Page 6	Clarified visual inspection
1	Attachment 5, Page 4	Added interval start and end date

VIRGIL C. SUMMER NUCLEAR STATION (VCSNS) Unit 1
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ATTACHMENT 1

Description and Assessment "revised"

1.0 SUMMARY DESCRIPTION

In accordance with the provisions of 10 CFR 50.90, South Carolina Electric & Gas (SCE&G) is submitting a license amendment request to revise Technical Specification (TS) 3/4.7.7, "Snubbers," for Virgil C. Summer Nuclear Station (VCSNS). The proposed change would revise the TS surveillance requirements for snubbers to conform to the revised VCSNS Snubber Testing Program.

2.0 DETAILED DESCRIPTION

VCSNS is currently nearing the completion of the third 10-year Inservice Inspection (ISI) interval. The fourth 10-year ISI interval at VCSNS begins on January 1, 2014 and ends December 31, 2024. Currently, snubber testing and examination are performed in accordance with the specific requirements of TS 3/4.7.7 as authorized in NRC correspondence under TAC No. MC4323 (Accession No. ML051290198) dated May 10, 2005. As required by 10 CFR 50.55a(b)(3)(v)(B), SCE&G intends to adopt Subsection ISTD, "Preservice and Inservice Examination and Testing of Dynamic Restraints (Snubbers) in Light-Water Reactor Nuclear Power Plants," of the ASME OM Code, 2004 Edition with 2005 and 2006 Addenda. The proposed changes to the VCSNS TS are summarized below: REV 1

- Reference to Specification 4.7.7.g in TS ACTION 3.7.7 would be replaced with reference to Specification 4.7.7.
- TS Surveillance Requirement (SR) 4.7.7 would be revised to remove specific surveillance requirements for demonstrating snubber operability. The current requirements would be replaced by a reference to the "Snubber Testing Program."

- Add a new TS Section 6.8.4.n, "Snubber Testing Program," to the Administrative Controls section (Section 6.0) of TS to provide a description of the snubber program requirements.

Mark-ups of the proposed TS pages are provided in Attachment 2. A comparison of the current SR 4.7.7 requirements to the revised snubber program requirements and justification of the changes are provided in Attachment 4. Attachment 5 contains the Snubber Testing Plan.

3.0 TECHNICAL EVALUATION

Licensees are required by 10 CFR 50.55a(g) or 10 CFR 50.55a(b)(3)(v)(B) to perform the ISI and testing of snubbers in accordance with the ASME OM Code and the applicable addenda, except where the NRC has granted specific written relief pursuant to 10 CFR 50.55a(g)(6)(i), or authorized alternatives pursuant to 10 CFR 50.55a(a)(3).

As noted in Regulatory Issue Summary 2010-06, licensees have the option to control the ASME Code-required ISI and testing of snubbers through their TS. For plants using their TS to govern ISI and testing of snubbers, 10 CFR 50.55a(g)(5)(ii) requires that if a revised ISI program for a facility conflicts with the TS, the licensee shall apply to the Commission for amendment of the TS. Therefore, when performing 120-month program updates in accordance with 10 CFR 50.55a(g)(4), licensees must submit any required amendments to ensure their TS remain consistent with the new code of record or NRC-approved alternatives used in lieu of the Code requirements.

The proposed change replaces the specific TS requirements for snubber examination, testing and service life monitoring with a reference to the Snubber Testing Program, thereby ensuring the TS remain consistent with the ISI program.

Snubbers will continue to be demonstrated OPERABLE by performance of the Snubber Testing Program. This program will be maintained in compliance with 10 CFR 50.55a per the proposed section TS 6.8.4.n. The program for ISI and testing of snubbers in accordance with ASME OM Code and the applicable addenda as required by 10 CFR 50.55a(g) is required to include evaluation of supported components/systems when snubbers are found to be unacceptable.

The proposed change to TS ACTION 3.7.7 for inoperable snubbers is administrative in nature and is required for consistency with the proposed change to SR 4.7.7.

4.0 REGULATORY EVALUATION

4.1 Applicable Regulatory Requirements

VCSNS is currently nearing the completion of the third 10-year ISI interval. The fourth 10-year ISI interval at VCSNS begins on January 1, 2014 and ends December 31, 2024. Currently, snubber testing and examination are performed in accordance with the specific requirements of TS 3/4.7.7. Relief was authorized pursuant to 50.55a(a)(3)(i), for the third 10-year inservice inspection interval at VCSNS under TAC No. MC4323 (Accession No. ML051290198) dated May 10, 2005. REV 1

10 CFR 50.55a(g)(4)(ii) requires that inservice examination of components conducted during successive 120-month inspection intervals must comply with the requirements of the latest edition and addenda of the Code incorporated by reference in 10 CFR 50.55a(b)(3), 12 months before the start of the 120-month inspection interval. If a revised ISI program for a facility conflicts with the TS for the facility, 10 CFR 50.55a(g)(5)(ii) requires licensees to apply to the Commission for amendment of the TS.

For the VCSNS fourth 10-year ISI interval beginning January 1, 2014 and ending December 31, 2024, as required by 10 CFR 50.55a(b)(3)(v)(B), SCE&G intends to adopt Subsection ISTD, "Preservice and Inservice Examination and Testing of Dynamic Restraints (Snubbers) in Light-Water Reactor Nuclear Power Plants," of the ASME OM Code, 2004 Edition with 2005 and 2006 Addenda, in place of the specific requirements of TS 3/4.7.7 as previously authorized in NRC relief correspondence dated May 10, 2005. REV 1

The purpose of this amendment request is to remove the specific surveillance requirements for demonstrating snubber operability from the TS since the ISI program will be revised to include the requirements of the OM Code Subsection ISTD in the Snubber Testing Program. As such, the proposed changes to TS 3/4.7.7 are necessary to conform the TS to the revised ISI program.

4.2 Precedence

The changes proposed to TS 3/4.7.7 are similar to changes submitted by Public Service Electric and Gas (PSEG) Nuclear, LLC for Salem Generating Station, Units 1 and 2 and Dominion Nuclear Connecticut (DNC), Inc for Millstone Power Station Unit 2. The applicable references for these similar changes are provided below:

4.2.1 PSEG Letter LR-N10-0363, License Amendment Request: Changes to Snubber Surveillance Requirements [for Salem Units 1/2], dated October 4, 2010 (Accession No. ML102780066).

4.2.2 PSEG Letter LR-N11-0107, Response to Draft Request for Additional Information - License Amendment Request: Changes to

Snubber Surveillance Requirements [for Salem Units 1/2], dated April 7, 2011 (Accession No. ML110980107).

4.2.3 PSEG Letter LR-N11-0151, Response to Draft Request for Additional Information - License Amendment Request: Changes to Snubber Surveillance Requirements [for Salem Units 1/2], dated May 23, 2011 (Accession No. ML111430636)

4.2.4 DNC Letter 11-354, License Amendment Request to Revise Snubber Surveillance Requirements [for Millstone Power Station Unit 2], dated September 21, 2011 (Accession No. ML11270A051).

4.2.5 DNC Letter 12-086, Response to Request for Additional Information Regarding License Amendment Request to Revise Snubber Surveillance Requirements [for Millstone Power Station Unit 2], dated February 24, 2012 (Accession No. ML12062A069).

A minor difference is noted between these precedent license amendment requests and the VCSNS request. The SCE&G request is in response to the requirement of 10 CFR 50.55a(b)(3)(v)(B) to perform the ISI and testing of snubbers. Testing will be in accordance with Subsection ISTD of the ASME OM Code and the applicable addenda when using the 2006 Addenda and later editions and Addenda of Section XI of the ASME Boiler and Pressure Vessel (B&PV) Code.

The previously referenced license amendment requests were made prior to the splitting of 10 CFR 50.55a(b)(3)(v) into parts (A) and (B) with the endorsement of the 2006 Addenda of the Section XI Code. 10 CFR 50.55a(b)(3)(v)(A) permitted the optional use of OM Code Subsection ISTD, "Preservice and Inservice Examination and Testing of Dynamic Restraints (Snubbers) in Light-Water Reactor Nuclear Power Plants," 2004 Edition, in place of the requirements for snubbers in the B&PV Code, Section XI, Articles IWF-5200(a) and (b), and IWF-5300(a) and (b). 10 CFR 50.55a(b)(3)(v) previously required that when using this alternative, preservice and inservice examination of snubbers must be performed using the VT-3 method specified in IWA-2213.

4.3 No Significant Hazards Consideration Determination

SCE&G requests adoption of an approved change to the plant specific Technical Specifications for VCSNS Unit 1, to revise TS 3/4.7.7, "Snubbers".

As required by 10 CFR 50.91(a), an analysis of the issue of no significant hazards consideration is presented below:

1. **Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?**

   Response: No.

   The proposed changes would revise SR 4.7.7 to conform the TS to the revised ISI program for snubbers. Snubber examination, testing and service life monitoring will continue to meet the requirements of 10 CFR 50.55a(g). Snubber examination, testing and service life monitoring is not an initiator of any accident previously evaluated. Therefore, the probability of an accident previously evaluated is not significantly increased.

   Snubbers will continue to be demonstrated OPERABLE by performance of a program for examination, testing and service life monitoring in compliance with 10 CFR 50.55a or authorized alternatives. The proposed change to TS ACTION 3.7.7 for inoperable snubbers is administrative in nature and is required for consistency with the proposed change to SR 4.7.7. The proposed change does not adversely affect plant operations, design functions or analyses that verify the capability of systems, structures, and components to perform their design functions. Therefore, the consequences of accidents previously evaluated are not significantly increased.

   Based on the above, this change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. **Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?**

   Response: No.

   The proposed changes do not involve any physical alteration of plant equipment. The proposed changes do not alter the method by which any safety-related system performs its function. As such, no new or different types of equipment will be installed, and the basic operation of installed equipment is unchanged. The methods governing plant operation and testing remain consistent with current safety analysis assumptions.

Therefore, it is concluded that this change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Does the proposed change involve a significant reduction in a margin of safety?

Response: No.

The proposed changes ensure snubber examination, testing and service life monitoring will continue to meet the requirements of 10 CFR 50.55a(g). Snubbers will continue to be demonstrated OPERABLE by performance of a program for examination, testing and service life monitoring in compliance with 10 CFR 50.55a or authorized alternatives. The proposed change to TS ACTION 3.7.7 for inoperable snubbers is administrative in nature and is required for consistency with the proposed change to SR 4.7.7.

Therefore, it is concluded that the proposed change does not involve a significant reduction in a margin of safety.

Based on the above, SCE&G concludes that the proposed change presents no significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and, accordingly, a finding of "no significant hazards consideration" is justified.

4.4 Conclusion

10 CFR 50.55a(g)(4)(ii) requires that inservice examination of components conducted during successive 120-month inspection intervals must comply with the requirements of the latest edition and addenda of the Code incorporated by reference in 10 CFR 50.55a(b) 12 months before the start of the 120-month inspection interval.

If a revised ISI program for a facility conflicts with the TS of the facility, 10 CFR 50.55a(g)(5)(ii) requires licensees to apply to the Commission for amendment of the TS to conform the TS to the revised ISI program.

The proposed change amends the TS surveillance requirements to conform the TS to the revised ISI program for snubbers which shall meet the requirements of 10 CFR 50.55a(g) except where the NRC has granted specific written relief, pursuant to 10 CFR 50.55a(g)(6)(i), or authorized alternatives pursuant to 10 CFR 50.55a(a)(3).

In conclusion, based on the considerations discussed above, (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be

conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

5.0 ENVIRONMENTAL EVALUATION

The proposed change would change a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, or would change an inspection or surveillance requirement. However, the proposed change does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluent that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed change meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed change.

6.0 REFERENCES

6.1 NRC Letter dated May 10, 2005, Virgil C. Summer Nuclear Station, Unit No. 1 - Request for Relief No. RR-III-01 Regarding Snubber Visual Examination and Functional Testing (TAC No. MC4323) (Accession No. ML051290198)

6.2 NRC Regulatory Issue Summary 2010-06, "Inservice Inspection and Testing Requirements of Dynamic Restraints (Snubbers)," June 1, 2010 (Accession No. ML101310338).

6.3 Virgil C. Summer, Unit 1, Current Facility Operating License NPF-12, Tech Specs, Revised 12/21/2012 (Accession No. ML052870422)

6.4 Letter from T. D. Gatlin (VCSNS) to Document Control Desk (NRC), "License Amendment Request - LAR 12-06014 Changes to Snubber Surveillance Requirements," dated April 2, 2013 (RC-13-0048) [ML13095A107] REV 1

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ATTACHMENT 2

Proposed Technical Specification Changes (Mark-Up) "revised"

SCE&G - EXPLANATION OF CHANGES

Page	Revision Number	Affected Section	Description of Change	Reason for Change
3/4 7-16	Rev 1	3.7.7 4.77	Change to Surveillance Requirements	10 CFR 50.55a(g)(5)(ii)
3/4 7-17	Rev 0	4.7.7	See ML13095A107	10 CFR 50.55a(g)(5)(ii)
3/4 7-18	Rev 0	4.7.7	See ML13095A107	10 CFR 50.55a(g)(5)(ii)
3/4 7-19	Rev 0	4.7.7	See ML13095A107	10 CFR 50.55a(g)(5)(ii)
3/4 7-20	Rev 0	Figure 4.7-1	See ML13095A107	10 CFR 50.55a(g)(5)(ii)
3/4 7-21	Rev 0	Table 1.7-2	See ML13095A107	10 CFR 50.55a(g)(5)(ii)
6-12i	Rev 0	6.8.4	See ML13095A107	10 CFR 50.55a(g)(5)(ii)
B 3/4 7-4f	Rev 0	3/4.7.7	See ML13095A107	10 CFR 50.55a(g)(5)(ii)
B 3/4 7-5	Rev 0	3/4.7.7	See ML13095A107	10 CFR 50.55a(g)(5)(ii)

REV 1

PLANT SYSTEMS

3/4.7.7 SNUBBERS

LIMITING CONDITION FOR OPERATION

3.7.7 All snubbers on systems required for safe shutdown/accident mitigation shall be OPERABLE. This includes safety and non-safety related snubbers on systems used to protect the code boundary and to ensure the structural integrity of these systems under dynamic loads.

APPLICABILITY: MODES 1, 2, 3 and 4. MODES 5 and 6 for snubbers located on systems required OPERABLE in those MODES.

ACTION:

With one or more snubbers inoperable, within 72 hours replace or restore the inoperable snubber(s) to OPERABLE status and perform an engineering evaluation per Specification 4.7.7.g on the attached component or declare the attached system inoperable and follow the appropriate ACTION statement for that system.

by performance of the Snubber Testing Program in Section 6.8.4.n.

SURVEILLANCE REQUIREMENTS

4.7.7 Each snubber shall be demonstrated OPERABLE ~~by performance of the following augmented inservice inspection program and the requirements of Specification 4.0.5.~~

~~a. Inspection Types~~

~~As used in this specification, type of snubber shall mean snubbers of the same design and manufacturer, irrespective of capacity.~~

~~b. Visual Inspections~~

~~Snubbers are categorized as accessible or inaccessible during power operation. Each of these categories may be inspected independently according to the schedule determined by Table 4.7-2. The visual inspection interval for each category of snubber shall be determined based on the criteria provided in Table 4.7-2, and the first inspection interval determined using this criteria shall be based upon the previous inspection interval as established by the requirements in effect before Amendment No. 103.~~

~~c. Refueling Outage Inspections~~

~~Each refueling outage an inspection shall be performed of all the snubbers defined in Section 3.7.7 attached to sections of safety systems piping that have experienced unexpected, potentially damaging transients as determined from a review of operational data and a visual inspection of the systems. In addition to satisfying the visual inspection acceptance criteria, freedom of motion of mechanical snubbers shall be verified using at least one of the following:~~

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ATTACHMENT 3

Technical Specification Pages "revised"

Proposed Technical Specification Changes Summary

Replace the following pages of the Appendix A to Operating License Number NPF-12, Technical Specifications with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Remove Pages	Insert Pages	Revision Number
3/4 7-16	3/4 7-16	Rev 1
3/4 7-17	3/4 7-17	Rev 0
3/4 7-18	-	Rev 0
3/4 7-19	-	Rev 0
3/4 7-20	-	Rev 0
3/4 7-21	-	Rev 0
-	6-12i	Rev 0
B 3/4 7-4f	B 3/4 7-4f	Rev 0
B 3/4 7-5	B 3/4 7-5	Rev 0

PLANT SYSTEMS

3/4.7.7 SNUBBERS

LIMITING CONDITION FOR OPERATION

3.7.7 All snubbers on systems required for safe shutdown/accident mitigation shall be OPERABLE. This includes safety and non-safety related snubbers on systems used to protect the code boundary and to ensure the structural integrity of these systems under dynamic loads.

APPLICABILITY: MODES 1, 2, 3 and 4. MODES 5 and 6 for snubbers located on systems required OPERABLE in those MODES.

ACTION:

With one or more snubbers inoperable, within 72 hours replace or restore the inoperable snubber(s) to OPERABLE status and perform an engineering evaluation for Specification 4.7.7 on the attached component or declare the attached system inoperable and follow the appropriate ACTION statement for that system.

SURVEILLANCE REQUIREMENTS

4.7.7 Each snubber shall be demonstrated OPERABLE by performance of the Snubber Testing Program in Section 6.8.4.n.

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ATTACHMENT 4

TS 4.7.7 SR Comparison to ISI Program Requirements "revised"

Current TS Surveillance Requirement	Revised ISI Program Requirement	Justification for Change
4.7.7.a Inspection Types As used in this specification, type of snubber shall mean snubbers of the same design and manufacturer, irrespective of capacity.	ISTD-5252 allows for defined test plan groups (DTPGs) to be established based upon differences in design, application, size, or type.	The revised ISI program requirements for inspection types allow the same distinction for DTPGs as SR 4.7.7.a.
4.7.7.b Visual Inspections Snubbers are categorized as accessible or inaccessible during power operation. Each of these categories may be inspected independently according to the schedule determined by Table 4.7-2. The visual inspection interval for each category of snubber shall be determined based on the criteria provided in Table 4.7.2, and the first inspection interval determined using this criteria shall be based upon the previous visual inspection interval as established by the requirements in effect before Amendment No. 103.	ISTD-4220(a) requires all snubbers to be considered one population for examination, or alternatively, to categorize them individually as accessible or inaccessible. The categories of accessible and inaccessible snubbers shall be considered separately for examination. ISTD-4220(b) requires the decision to examine the snubbers as one population or as separate categories to be made and documented before the scheduled examination begins and not changed during the examination.	Use of ISTD-4200 for snubber inservice visual examination in lieu of current SR 4.7.7.b does not change the number of snubbers required to be examined or the required visual examination intervals.

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Current TS Surveillance Requirement	Revised ISI Program Requirement	Justification for Change
4.7.7.c Refueling Outage Inspections Each refueling outage an inspection shall be performed of all the snubbers defined in section 3.7.7 attached to sections of safety systems piping that have experienced unexpected, potentially damaging transients as determined from a review of operational data and a visual inspection of the systems. In addition to satisfying the visual inspection acceptance criteria, freedom of motion of mechanical snubbers shall be verified using at least one of the following: (i) manually induced snubber movement; (ii) evaluation of in-place snubber piston setting; or (iii) stroking the mechanical snubber through it full range of travel.	ISTD-1750 states that if a transient dynamic event (e.g., water hammer, steam hammer) occurs that may affect snubber operability, then the affected snubbers and systems shall be reviewed and any appropriate corrective action taken. ISTD-1800 requires an evaluation to be performed of the system(s) or components of which an unacceptable snubber is a part, for possible damage to the supported system or component. ISTD-5325 also requires the operational readiness of all snubbers in this FMG to be evaluated by stroking or testing.	Use of ISTD-1750, ISTD-1800 and ISTD-5325 to evaluate snubbers subject to any unexpected potentially damaging transients as do the requirements of SR 4.7.7.c.

Current TS Surveillance Requirement	Revised ISI Program Requirement	Justification for Change
4.7.7.d Visual Inspection Acceptance Criteria Visual inspections shall verify (1) that there are no visible indications of damage or impaired OPERABILITY and (2) attachments to the foundation or supporting structure are functional, and (3) fasteners for the attachment of the snubbers to the component and to the snubber anchorage are functional.	ISTD-4210 states that inservice examination shall be a visual examination to identify physical damage, leakage, corrosion, or degradation that may have been caused by environmental exposure or operating conditions; and that external characteristics that may indicate operational readiness of the snubber shall be examined. ISTD-4231 requires that examinations shall include observations for loose fasteners, or members that are corroded or deformed disconnected components or other conditions that might interfere with the proper restraint of movement. If observed these conditions shall be evaluated. ISTD-4232 requires that examinations verify snubbers do not restrain thermal movement to an extent that unacceptable stresses could develop in the snubber, the pipe, or other equipment that the snubber is designed to protect or restrain. ISTD-4233 requires that examinations verify snubbers are free of defects that may be generic to particular designs as may be detected by visual examination.	10 CFR 50.55a(b)(3)(v) allows the use of subsection ISTD for inservice examination requirements. The revised ISI program requirements for inservice examination satisfy the visual inspection acceptance criteria in SR 4.7.7.d.

Current TS Surveillance Requirement	Revised ISI Program Requirement	Justification for Change
4.7.7.d Visual Inspection Acceptance Criteria (cont) Snubbers which appear inoperable as a result of visual inspections shall be classified as unacceptable and may be reclassified acceptable for the purpose of establishing the next visual inspection interval, provided that (i) the cause for being classified as unacceptable is clearly established and remedied for that particular snubber and for other snubbers irrespective of type that may be generically susceptible; and (ii) the affected snubber is functionally tested in the as found condition and determined OPERABLE per Specifications 4.7.7.f.	ISTD-4240 permits snubbers classified as unacceptable during inservice examination to be tested in accordance with the requirements of ISTD-5210. Results that satisfy the operational readiness test criteria of ISTD-5210 shall be used to accept the snubber, provided the test demonstrates that the unacceptable condition did not affect operational readiness.	The revised ISI program requirements for inservice examination is equivalent to the visual inspection acceptance criteria in SR 4.7.7.d.

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Current TS Surveillance Requirement	Revised ISI Program Requirement	Justification for Change
4.7.7.d Visual Inspection Acceptance Criteria (cont) When a fluid port of a hydraulic snubber is found to be uncovered, the snubber shall be declared inoperable and shall not be determined OPERABLE via functional testing unless the test is started with the piston in the as-found setting, extending the piston rod in the tension mode direction. All snubbers found connected to an inoperable common hydraulic fluid reservoir shall be counted as unacceptable and may be reclassified as acceptable for determining the next visual inspection interval provided that criterion (i) and (ii) above are met. A review and evaluation shall be performed and documented to justify continued operation with an unacceptable snubber. If continued operation cannot be justified, the snubber shall be declared inoperable and the ACTION requirements of 3.7.7 shall be met.	ISTD-4233 requires that fluid supply or content for hydraulic snubbers shall be observed. If the fluid is less than the minimum amount, the installation shall be identified as unacceptable, unless a test establishes that the performance of the snubber is within specified limits. Tests shall be performed in accordance with ISTD-5210(b) and ISTD-5210(c). The initial test shall start with the piston at the as-found setting and be performed in the extension (tension) direction, or in a mode that more closely resembles the operating and design requirements of the snubber. ISTD-4270 requires that snubbers that do not meet examination requirements of ISTD-4230 shall be evaluated to determine the root cause of the unacceptability. ISTD-4280 requires that unacceptable snubbers shall be adjusted, repaired, modified, or replaced.	The revised ISI program requirements for inservice examination is equivalent to the visual inspection acceptance criteria in SR 4.7.7.d.

REV 1

Current TS Surveillance Requirement	Revised ISI Program Requirement	Justification for Change
4.7.7.e Functional Tests During the first refueling shutdown and at least once per 18 months thereafter, a representative sample of either: (1) At least 10% of the total of each type of snubber in use in the plant shall be functionally tested either in place or in a bench test. For each snubber of a type that does not meet the functional test acceptance criteria of specification 4.7.7.f, an additional 10% of that type of snubber shall be functionally tested, or	ISTD-5200 requires snubber operational readiness testing to be performed each fuel cycle. Testing shall be performed during normal system operation, or during system or plant outages. ISTD-5223 and ISTD-5224 permit snubbers to be tested in their installed location or in a bench test. ISTD-5261 requires snubbers of each Defined Test Plan Group (DTPG) to be tested using either: (a) the 10% testing sample plan (b) the 37 testing sample size ISTD-5330 requires the snubbers of each DTPG and failure mode group (FMG) to be tested as required. Testing is complete when the mathematical expressions of ISTD-5331 are satisfied, or all snubbers in the DTPG or FMG have been tested. ISTD-5331 requires that testing shall satisfy the mathematical expressions as follows: (a) for each DTPG $N \geq 0.1n + C(0.1n/2)$ (b) for each FMG $N_F \geq C_F(0.1n/2)$	The frequency of snubber testing in the revised program is unchanged from the frequency specified in current TS SR 4.7.7.e. The initial sample size in the revised program is as large as the size specified in current SR 4.7.7.e. The revised program provides for an expanded sample of one half the initial sample be tested for each failed snubber when using the 10% test plan. Although the present program requires an additional sample of the same 10% for each failed snubber this is not considered to be a reduction in safety since the proposed program includes an increased emphasis on service life monitoring, and this proposed test program has been previously approved by the regulator and is widely in use elsewhere.

Current TS Surveillance Requirement	Revised ISI Program Requirement	Justification for Change
4.7.7.e Functional Tests (cont.) (2) A representative sample of each type of snubber shall be functionally tested in accordance with Figure 4.7-1, "C" is the total number of snubbers of a type found not meeting the acceptance requirements of Specification 4.7.7.f. The cumulative number of snubbers of a type tested is denoted by "N". At the end of each days testing, the new values of "N" and "C" (previous day's total plus current day's increments) shall be plotted on Figure 4.7-1. If at any time the point plotted falls in the "Accept" region, testing of that type snubber may be terminated. When the point plotted lies in the "Continue Testing" region, additional snubbers of that type shall be tested until the point falls in the "Accept" region or all the snubbers of that type have been tested. The representative sample selected for functional testing shall include the various configurations, operating environments, and the range of size and capacity of snubbers of each type. The representative sample shall be weighted to include more snubbers from severe service areas such as near heavy equipment. Snubbers placed in the same location as snubbers which failed the previous functional test shall be included in the next test lot if the failure analysis shows that a failure was due to location.	ISTD-5411 requires an initial sample of 37 snubbers to be selected randomly from each 37 plan DTPG. ISTD-5431 requires testing to satisfy the mathematical expressions as follows: *(a)* for each DTPG $N \geq 36.49 + 18.18C$ *(Fig. ISTD-5431-1)* Figure ISTD-5431-1 reflects the same acceptance line as SR Figure 4.7-1 only it is defined in terms of N rather than C. ISTD-5500 requires that snubbers placed in the same location as snubbers that failed the previous inservice operational readiness test shall be retested at the time of next operational readiness testing unless the cause of the failure is clearly established and corrected.	The initial sample size using the 37 plan in the revised program is as large as the size specified in current SR 4.7.7.e. Figure ISTD-5431-1 reflects the same acceptance line as SR Figure 4.7-1 only it is defined in terms of N rather than C. It requires the same equation to be satisfied to complete testing. Retests of failed snubber locations are required by the revised program as in SR 4.7.7.e.

Current TS Surveillance Requirement	Revised ISI Program Requirement	Justification for Change
4.7.7.f Functional Test Acceptance Criteria The snubber functional test shall verify that: 1. Activation (restraining action) is achieved within the specified range in both tension and compression, except that inertia dependent, acceleration limiting mechanical snubbers, may be tested to verify only that activation takes place in both directions of travel. 2. Snubber bleed, or release rate where required, is present in both tension and compression, within the specified range. 3. Where required, the force required to initiate or maintain motion of the snubber is within the specified range in both directions of travel. 4. The snubber ability to withstand displacement under continuous loading. 5. Fasteners for attachment of the snubber to the component and to the snubber anchorage are secure. Testing methods may be used to measure parameters indirectly or parameters other than those specified if those results can be correlated to the specified parameters through established methods.	ISTD-5210(a), (b) and (c) require the same verification for operational readiness testing. ISTD-4231 Requires Snubbers to be installed so they are capable of restraining movement when activated. Examinations include fasteners and other components that might interfere with proper restraint of movement. ISTD-5226 States when test methods are used that either measure parameters indirectly, or measure parameters other than those specified, the results shall be correlated with specified parameters through established methods.	The revised ISI program requirements for snubber acceptance criteria are equivalent to those of current SR 4.7.7.f.

Current TS Surveillance Requirement	Revised ISI Program Requirement	Justification for Change
4.7.7.g Functional Test Failure Analysis An engineering evaluation shall be made of each failure to meet the functional test acceptance criteria to determine the cause of the failure. The results of this evaluation shall be used, if applicable, in selecting snubbers to be tested in an effort to determine the OPERABILITY of other snubbers irrespective of the type that may be subject to the same failure mode.	ISTD-5271 states that snubbers that do not meet test requirements shall be evaluated to determine the root cause of the failure. ISTD-5272 states that snubbers found unacceptable according to operational readiness test requirements should be assigned to FMGs unless the failure is isolated or unexplained. FMGs shall include all unacceptable snubbers with the same failure mode and all other snubbers with similar potential for similar failure.	The revised ISI program requirements for snubber acceptance criteria are equivalent to those of current SR 4.7.7.g.
4.7.7.g Functional Test Failure Analysis (cont.) For snubbers found inoperable, an engineering evaluation shall be performed on the components to which the inoperable snubbers are attached. The purpose of this engineering evaluation shall be to determine if the components to which the inoperable snubbers are attached were adversely affected by the inoperability of the snubbers in order to ensure that the component remains capable of meeting the desired service.	ISTD-1800 requires an evaluation be performed on the system(s) or component(s) of which an unacceptable snubber is a part, for possible damage to the supported system or component.	The revised ISI program requirements for snubber acceptance criteria are equivalent to those of current SR 4.7.7.g.

Current TS Surveillance Requirement	Revised ISI Program Requirement	Justification for Change
4.7.7.g Functional Test Failure Analysis (cont.) If any snubber selected for functional testing either fails to lockup or fails to move, i.e., frozen in place, the cause will be evaluated and if caused by the manufacturer or design deficiency all snubbers of the same type subject to the same defect shall be functionally tested. This testing requirement shall be independent of the requirements stated in Specification 4.7.7.e for snubbers not meeting the functional test acceptance criteria.	ISTD-5271 states that snubbers that do not meet test requirements shall be evaluated to determine the root cause of the failure. ISTD-5272 states that snubbers found unacceptable according to operational readiness test requirements should be assigned to FMGs unless the failure is isolated or unexplained. FMGs shall include all unacceptable snubbers with the same failure mode and all other snubbers with similar potential for similar failure. As an alternative to additional testing for Design or Manufacturing FMGs, ISTD-5323 requires no additional testing when all snubbers in the FMGs are replaced or modified in accordance with ISTD-1600. If replacement or modification is not performed in accordance with ISTD-5323, additional testing is required in accordance with ISTD-5324. Testing is required to continue until the acceptance limit is satisfied or all snubbers in the FMG have been tested.	The revised program requirements for manufacturer or design deficiencies require replacement or modification of all snubbers in the FMG or additional testing until the mathematical expression of ISTD-5331(b) is satisfied or all snubbers in the FMG have been tested. This may result in fewer snubbers being tested after a test failure. However, the revised program requirements provide adequate assurance of snubber OPERABILITY because all potentially affected snubbers will be replaced or modified; or the acceptance limit for additional testing will be met, demonstrating an acceptable level of reliability.

Current TS Surveillance Requirement	Revised ISI Program Requirement	Justification for Change
4.7.7.h Functional Testing of Repaired and Replaced Snubbers Snubbers which fail the visual inspection or the functional test acceptance criteria shall be repaired or replaced. Replacement snubbers and snubbers which have repairs which might affect the functional test result shall be tested to meet the functional test criteria before installation in the unit. These snubbers shall have met the acceptance criteria subsequent to their most recent service, and the functional test must have been performed within 12 months before being installed in the unit.	ISTD-1610 Requires replacement or modified snubber(s) to have a proven suitability for the application and environment and; ISTD-5134 Requires adjusted, modified, repaired, or replacement snubbers to be tested to meet the requirements of ISTD-5120 prior to service.	The revised ISI program requirements for supported component(s) or system evaluation are equivalent to those of current SR 4.7.7.h.
4.7.7.i Snubber Seal Replacement Program The seal service life of hydraulic snubbers shall be monitored to ensure that the seal's service life is not exceeded between surveillance inspections. Seal materials, and applications shall be determined and established based on engineering information and the seals shall be replaced so that the maximum service life will not be exceeded during a period when the snubber is required to be OPERABLE. The seal replacements shall be documented and the documentation shall be retained in accordance with Specification 6.10.2.	ISTD-6100 requires initial snubber service life to be predicted based on manufacturer's recommendation or design review. ISTD-6200 and ISTD-6200(c) requires service life to be evaluated at least once each fuel cycle. If the evaluation indicates that service life will be exceeded before the next scheduled system or plant outage, the snubber shall be reconditioned such that its service life will be extended to or beyond the next scheduled system or plant outage. ISTA-9310 requires the maintenance of records in accordance with the Owners QA program.	The service life evaluation requirements in ISTD-6100 and ISTD-6200 are equivalent to the requirements in current TS SR 4.7.7.i.
Figure 4.7-1 SAMPLING PLAN FOR SNUBBER FUNCTIONAL TEST	Fig. ISTD-5431-1, The 37 Testing Sample Plan	Figure ISTD-5431-1 reflects the same acceptance line as SR Figure 4.7-1 only it is defined in terms of N rather than C.

Current TS Surveillance Requirement	Revised ISI Program Requirement	Justification for Change
TABLE 4.7-2 SNUBBER VISUAL INSPECTION INTERVAL	ISTD-4252(b) requires inservice examinations to be conducted in accordance with Table ISTD-4252-1.	Table ISTD-4252-1 is identical to SR Table 4.7-2 for population/category population sizes.

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

ATTACHMENT 5

Proposed Snubber Program Plan "revised"

Virgil C. Summer Nuclear Station, Unit 1

Snubber Examination, Testing, and Service Life Monitoring Program Plan

Revision 1

South Carolina Electric & Gas
Virgil C. Summer Nuclear Station, Unit 1
P.O. Box 88
Jenkinsville, SC 29065

Revision Log

Revision Number	Revision Description	Date
1	Included end date of the 4th ISI interval on Page 4.	9/24/13

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SECTION

INTRODUCTION:

1.1 Purpose:
To provide requirements for the performance and administration of assessing the operational readiness of those dynamic restraints (Snubbers) whose specific functions are required to ensure the integrity of the Reactor Coolant Pressure Boundary.

1.2 Scope:
The program plan was prepared to meet the requirements of the following subsections of the American Society of Mechanical Engineers (ASME) OM Code 2004 Edition with 2005 and 2006 Addenda.

- Subsection ISTA, "*General Requirements*"

  ISTA contains the requirements directly applicable to inservice examination and testing including the Owner's Responsibility and Records Requirements.

- Subsection ISTD, "*Preservice and Inservice Examination and Testing of Dynamic Restraints (Snubbers) in Light-Water Reactor Nuclear Power Plants*"

  ISTD establishes requirements for preservice and inservice examination and testing, and the service life monitoring of Dynamic Restraints *(Snubbers)* in light-water reactor nuclear power plants. The snubbers covered are required to support the systems and components that are required in shutting down a reactor to the safe shutdown condition, in maintaining the safe shutdown condition, or in mitigating the consequences of an accident.

1.3 Discussion:
In order to ensure the required operability of all safety related snubbers for VCSNS during a seismic or other events, initiating dynamic loads, the inspection, testing, and the service life monitoring of these snubbers shall be implemented and performed in accordance with the requirements of SAP-0161, Station Administrative Snubber Program Document.

The examination boundaries shall include the snubber assembly from pin to pin inclusive. Coordination with the ISI program owner will be required to complete the surveillance requirements for piping and structural attachments. Integral and nonintegral attachments for snubbers shall be examined in accordance with the requirements of the ASME Code Section XI, Article IWF-2500(a), (b), (c) and (d) within the ISI program.

The Snubber Program described in SAP-0161 adheres to the requirements of the ASME OM Code, Subsection ISTD, 2004 Edition with 2005 and 2006 Addenda, as required by 10CFR50.55a(b)(3)(v).

2.0 EXAMINATION, TESTING AND SERVICE LIFE MONITORING REQUIREMENTS:

2.1 Visual Examinations, Functional Testing, and Service Life requirements shall be performed to the extent specified within SAP-0161 and referenced Surveillance Test Procedures (STP).

2.2 Snubbers are grouped into Defined Test Plan Groups (DTPGs) by design type, size, and accessibility in accordance with ISTD-5252. Each DTPG will be tested using the 10% sample plan per ISTD-5300. There are no snubbers attached to the Steam Generators. All mechanical snubbers at Virgil C. Summer Station Unit 1 are grouped as separate DTPGs by size.

DTPGs
PSA 1/4
PSA 1/2
PSA 1
PSA 3
PSA 10
PSA 35
PSA 100

2.4 The service life of all snubbers shall be monitored and snubbers replaced, reconditioned or evaluated in accordance with SAP-0161 and ISTD-6200 to ensure that the service life is not exceeded between surveillance inspections. The replacement or reconditioning shall be documented and records retained in accordance with VCSNS procedures.

3.0 EXAMINATION and TESTING METHODS:

3.1 Visual examinations shall be performed by individuals qualified in accordance with VCSNS procedures. These examinations are conducted to ensure the mechanical and structural condition of the snubber support location and to observe conditions that could affect functional adequacy. Visual examinations and functional testing shall be performed to verify the requirements specified within SAP-0161 are met in accordance with Subsection ISTD.

4.0 EXAMINATION and TESTING FREQUENCY:

4.1 Visual Examinations and Functional Testing shall be performed at the frequency specified within SAP-0161 and ISTD-4250 and ISTD-5240. VCSNS currently performs accessible and inaccessible snubber visual examinations as one group with the frequency shown in Table ISTD 4252-1.

4.2 Code Case OMN-13, which allows the extension of the visual examination interval, will be implemented for snubber inspections during the fourth 10-year ISI interval which begins on January 1, 2014 and ends on December 31, 2024. Code Case OMN-13 is approved for use in Regulatory Guide 1.192 (June 2003). The Visual Examinations of Table ISTD 4252-1may be extended in accordance REV 1

with Code Case OMN-13 once the prerequisites of the code case have been satisfied.

4.3 Visual Examinations shall be performed whenever new snubbers are installed, reinstallation of existing or swapped snubbers that were functionally tested, or after repairs, replacements or modifications.

4.4 Functional testing requirements for new installations or spares shall be equal to or more stringent than that specified within SAP-0161.

5.0 EXAMINATION, TESTING AND SERVICE LIFE MONITORING EVAUATION:

5.1 Snubbers that do not appear to conform to the Visual Examination requirements of SAP-0161, shall be reported for evaluation and appropriate corrective action.

5.2 Snubbers that do not appear to conform to the visual examination acceptance requirements and are later confirmed as operable as a result of functional testing may be declared operable for the purpose of establishing the next visual inspection interval, providing that the unacceptable condition did not affect operational readiness.

5.3 Snubbers that do not meet the operability testing acceptance criteria in SAP-0161 shall be evaluated to determine the cause of the failure and appropriate corrective action taken.

5.4 The service life of a snubber is evaluated using manufacturing input and engineering information gained through consideration of the snubber service conditions and inservice functional test results. A service life monitoring program is included in SAP-0161.

6.0 REPAIR, REPLACEMENT, AND MODIFICATION REQUIREMENTS:

6.1 Repairs, Replacements and Modifications performed on snubbers under this program shall conform, as applicable, to the requirements specified within the ASME Code, Section XI.

7.0 SCHEDULING:

7.1 The Visual Examinations, Functional Testing schedules, and Service Life Replacements shall be established, tracked and maintained in accordance with SAP-0161 and Subsection ISTD by the Snubber Program Engineer.

7.2 The Snubber Program Engineer shall identify and track expanded or additional testing and/or examinations as required by SAP-0161 and Subsection ISTD.

8.0 REPORTS and RECORDS:

8.1 Reports and records for the Visual Examinations and Functional Testing shall be maintained for all snubbers included within the Snubber Program.

8.2 Applicable records and reports, as required for Repair and Replacements, shall be maintained for snubbers.

8.3 Records of the service life of all snubbers listed in this program, including the date at which the service life commences or expires, and associated installation and maintenance records will be maintained.