December 21, 2006

Mr. Karl W. Singer
Chief Nuclear Officer and
Executive Vice President
Tennessee Valley Authority
6A Lookout Place
1101 Market Street
Chattanooga, TN 37402-2801

SUBJECT: SEQUOYAH NUCLEAR PLANT, UNITS 1 AND 2 — SAFETY EVALUATION OF RELIEF REQUEST FOR THE THIRD 10-YEAR INSERVICE INSPECTION INTERVAL AND TEST PROGRAM FOR SNUBBERS (TAC NOS. MC9657 AND MC9658)

Dear Mr. Singer:

By letter dated January 25, 2006, and supplemented by letter dated September 15, 2006, the Tennessee Valley Authority (TVA, the licensee) submitted a relief request for its Third 10-Year Inservice Inspection (ISI) Interval and Test Program for snubber examination at the Sequoyah Nuclear Plant (SQN), Units 1 and 2. TVA proposed to perform snubber examination and testing in accordance with the SQN Technical Requirements Manual (TRM) as an alternative to the American Society of Mechanical Engineers Section XI Code requirements.

The NRC staff has completed its review of the submitted relief request and concludes that the proposed alternative to use the TRM requirements for snubber visual inspection and functional testing provides an acceptable level of quality and safety. Therefore, pursuant to Title 10 of the *Code of Federal Regulations*, Section 50.55a(a)(3)(i), the NRC staff authorizes the proposed alternative for the third 10-year ISI interval for SQN Units 1 and 2.

Sincerely,

/RA/
E C Marinos / for
Douglas V. Pickett, Acting Chief
Plant Licensing Branch II-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-327 and 50-328

Enclosure: Safety Evaluation

cc: See next page

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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELIEF REQUEST FOR THE THIRD 10-YEAR INSERVICE INSPECTION

INTERVAL AND TEST PROGRAM FOR SNUBBERS

TENNESSEE VALLEY AUTHORITY

SEQUOYAH NUCLEAR PLANT, UNITS 1 AND 2

DOCKET NOS. 50-327 AND 50-328

1.0 INTRODUCTION

By letter dated January 25, 2006, and supplemented by letter dated September 15, 2006, the Tennessee Valley Authority (TVA, the licensee) submitted a relief request for its Third 10-Year Inservice Inspection (ISI) Interval and Test Program for snubber examination at the Sequoyah Nuclear Plant (SQN), Units 1 and 2.

The licensee requested relief from certain inservice inspection and examination requirements of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code) Section XI, 2001 Edition through 2003 Addenda, Article IWF-5000. Article IWF-5000 references ASME/ANSI OM, Part 4 (OM-4), 1987 Edition with OMa-1988. TVA proposed to perform snubber examination and testing in accordance with the SQN Technical Requirements Manual (TRM) as an alternative to the ASME Section XI Code requirements. The SQN, Units 1 and 2 third 10-year ISI interval commenced June 1, 2006.

2.0 REGULATORY EVALUATION

The ISI of ASME Code Class 1, 2, and 3 components shall be performed in accordance with Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components," of the ASME Code and applicable addenda as required by Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.55a(g), except where specific written relief has been granted by the NRC, pursuant to 10 CFR 50.55a(g)(6)(i). Section 50.55a(a)(3) states that alternatives to the requirements of paragraph (g) may be used, when authorized by the NRC, if: (i) the proposed alternatives would provide an acceptable level of quality and safety, or (ii) compliance with the specified requirements would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

Pursuant to 10 CFR 50.55a(g)(4), ASME Code Class 1, 2, and 3 components (including supports) shall meet the requirements, except the design and access provisions and the

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preservice examination requirements, set forth in the ASME Code, Section XI, to the extent practical within the limitations of design, geometry, and materials of construction of the components. The regulations require that inservice examination of components and system pressure tests conducted during the first 10-year interval and subsequent intervals comply with the requirements in the latest edition and addenda of Section XI of the ASME Code incorporated by reference in 10 CFR 50.55a(b), 12 months prior to the start of the 120-month interval, subject to the limitations and modifications listed therein. The applicable edition of Section XI of the ASME Code for the SQN Units 1 and 2 third 10-year ISI interval is the 2001 Edition up to and including the 2003 Addenda.

3.0 TECHNICAL EVALUATION

3.1 Relief Request Snubber

3.1.1 Licensee Relief Request

The licensee proposed an alternative to the following ASME Code, Section XI, requirements for inspection and testing of ASME Code Class 1, 2 and 3 snubbers at SQN Units 1 and 2:

(a) IWA-4530(b), “Preservice Examination and Testing”

(b) IWF-5200(a) and (b), “Preservice Examinations and Tests”

(c) IWF-5300(a) and (b), “Inservice Examinations and Tests”

(d) IWF-5400, “Repair/Replacement Activities”

(e) IWA-6210(c), “Summary Report”

(f) IWA-6230, “Summary Report Preparation”

(g) IWA-6240, “Summary Report Submittal”

(h) IWA-2100, “Examination and Inspection”

3.1.2 Code Requirements

(a) ASME Section XI, IWA-4530(b) requires preservice inspection and testing to be in accordance with IWF-5200 following repair/replacement of a snubber.

(b) ASME Section XI, IWF-5200(a) and (b) requires preservice examinations and tests in accordance with ASME/ANSI OM Part 4, 1987 Edition, OMa-1988 Addenda, using the VT-3 visual examination method in accordance with IWA-2213.

(c) ASME Section XI, IWF-5300(a) and (b) requires inservice examinations and tests in accordance with ASME/ANSI OM Part 4, 1987 Edition, OMa-1988 Addenda, using the VT-3 visual examination method in accordance with IWA-2213.

(d) ASME Section XI, IWF-5400 references IWF-5200 for snubber examination and test requirements following repair/replacement activities.

(e) ASME Section XI, IWA-6210(c) requires the preparation of preservice and inservice inspection summary reports for Class 1 and 2 supports.

(f) ASME Section XI, IWA-6230 requires the preparation of an inservice inspection summary report after each refueling outage.

(g) ASME Section XI, IWA-6240 requires the submittal of summary reports to the regulatory authority.

(h) ASME Section XI, IWA-2100 requires Authorized Nuclear Inservice Inspector (ANII) involvement for snubber examination and testing.

3.1.3 Licensee's Proposed Alternative

Technical Requirements Manual (TRM) TR 3/4.7.9, "Snubbers," will be used to perform visual examinations and functional testing of ASME Code Class 1, 2 and 3 snubbers in lieu of meeting ASME Section XI requirements.

3.1.4 Licensee's Basis for Requesting Relief (as stated)

SQN Units 1 and 2 are required to update the 2001 Edition, 2003 Addenda, of the ASME Section XI Code for the third 10-year snubber test and inspection interval. The code requirements contain snubber inspection and testing methodologies that are nearly identical to the methodologies prescribed in SQN's TRM for examination and testing of snubbers. Compliance with the ASME code would introduce a redundant set of snubber requirements and present unnecessary confusion in sample selection, data collection, acceptance criteria, and corrective actions. Additional confusion is created by the difference in snubber grouping. ASME Section XI addresses Class 1, 2, 3, and Metal Containment (MC) component supports while the SQN TRM addresses all safety-related snubbers which include Class 1, 2, 3, and MC component supports. Approximately half of the snubbers at SQN would be required to be tested in accordance with ASME Section XI, while the other half would be tested in accordance with the TRM. Introducing two nearly redundant sets of snubber requirements present unnecessary confusion in sample selection, snubber grouping, data collection, acceptance criteria, and corrective actions. Accordingly, the administration of overlapping programs and criteria to the varied population of snubbers becomes difficult to apply.

One programmatic area that should be noted is the snubber examination schedules. Examination schedules that are in SQN's TRM snubber program adopt the provisions provided in NRC Generic Letter (GL) 90-09, "Alternative Requirements for Snubber Visual Inspection Intervals and Corrective Actions." The purpose of the GL was to provide alternative guidance to snubber inspection schedules that were excessively restrictive. The alternative schedule was to alleviate the expenditure of unnecessary resources and prevent radiological exposure associated with the overly restrictive examination schedules. The implementation of

ASME/ANSI OM Part 4, 1987 Edition, OMa-1988 Addenda, would return the examination schedule for approximately half of the snubbers in SQN's snubber examination program to the

frequency which existed prior to the publication of GL 90-09. This would essentially cancel the relaxation provided by GL 90-09.

The current snubber program for SQN is defined by the TRM (TR 3/4.7.9) and provides for a level of quality and safety equal to or greater than the ASME code. The ASME code provides for failure mode grouping of snubbers that fail visual examination, meaning only those snubbers identified as being in that group would require shortened examination intervals. Under SQN's TRM snubber program, all snubbers in the population would be placed in a shortened inspection interval. On this basis, SQN's TRM snubber program is more conservative in corrective action than the ASME code. As previously discussed, administering different criteria to a varied population of snubbers can create confusion while selecting test samples, applying acceptance criteria, corrective action, and examination schedules for failed snubbers. This situation could increase the possibility of applying the wrong action, thus creating a nonconformance, an inoperability, or even a violation of the TRM.

In order to eliminate any misinterpretation or confusion in administering requirements for snubbers, and to remove the possibility of applying contradicting requirements to the same snubber(s), TVA proposes to examine and test snubbers in accordance with SQN's TRM (TR 3/4.7.9). The SQN TRM for testing and examination of snubbers provides an equal or greater level of quality and safety than the ASME Code.

Because relief is sought from the ASME Section XI snubber examination and test requirements, TVA does not plan to include a third party for ASME Section XI snubber examination or test activities. The ASME code would require Authorized Nuclear Inservice Inspector (ANII) involvement. The SQN TRM snubber program does not require ANII involvement for examination and test requirements. The SQN TRM snubber program is directed by a designated snubber program engineer. The snubber program engineer provides oversight of the TRM snubber program during implementation. Included in the oversight are responsibilities for serving as the TRM test director in accordance with TVA's procedure for conducting a test, and for reviewing the TRM examination and test data. By reviewing and evaluating the TRM examination and test data, the snubber program engineer provides an acceptable level of quality and safety without third party inspector participation. ANII involvement for snubber repair and replacement activities is maintained as required by TVA's ASME Section XI Repair and Replacement Program.

Because relief is sought from the ASME Section XI requirements for the preparation and submittal of summary reports for snubber examinations and tests, TVA does not plan to prepare snubber summary reports for submittal to NRC. The SQN TRM is implemented by site procedures (surveillance instructions) that retain inspection and test results for snubbers. On-site retention of the snubber inspection and test results in a summary report format is considered acceptable for recording this data. Performance of each test or inspection is documented and retained with the site procedure as a summary report with data similar to the requirements prescribed in the ASME Section XI Code.

ASME Section XI VT-3 certification required by personnel performing snubber visual examinations is an additional certification as compared to the SQN TRM snubber program training qualifications. Personnel performing the TRM visual examinations are trained specifically on the TRM implementing instructions prior to performing the examinations. Training and documentation of personnel to the visual acceptance criteria, specifically in the TRM implementing instructions, provides an acceptable level of quality and safety. TVA does not plan to require VT-3 certification. In lieu of VT-3 certification, TVA plans to implement visual requirements that meet ASME Section XI, 2001 Edition, 2003 Addenda, Paragraph IWA-2321(a), "Visual Acuity", for inspection personnel.

3.1.5 Evaluation of Snubber Relief Request

The licensee requested authorization of an alternative to the requirements of the ASME Code, Section XI, paragraphs IWF-5200(a), and (b), and IWF-5300(a), and (b). The licensee proposed that the visual examinations and functional testing of ASME Code Class 1, 2 and 3 snubbers be performed in accordance with the requirements of SQN TRM TR 3/4.7.9 and its procedures in lieu of meeting the requirements in the ASME Code, Section XI, paragraphs IWF-5200(a), and (b), and IWF-5300(a), and (b).

The applicable edition of Section XI of the ASME Code for the SQN third 10-year ISI interval is the 2001 Edition through 2003 Addenda. ASME Section XI, paragraphs IWF-5200(a) and (b), and IWF-5300(a) and (b), references OM-4, 1987 Edition with OMa-1988.

ASME Section XI, paragraphs IWF-5200(a) and IWF-5300(a) require that snubber preservice and inservice examinations be performed in accordance with OM-4, using the VT-3 visual examination method described in IWA-2213. Paragraphs IWF-5200(b) and IWF-5300(b) require that snubber preservice and inservice tests be performed in accordance with OM-4.

ASME Section XI, paragraphs IWF-5200(c) and IWF-5300(c) require that integral and nonintegral attachments for snubbers, including lugs, bolting, pins, and clamps, be examined in accordance with the requirements of Subsection IWF.

OM-4 specifies the requirements for visual examination (paragraph 2.3), and functional testing (paragraph 3.2) of snubbers. The licensee proposes to use SQN TRM TR 3/4.7.9 surveillance requirements for visual inspection and functional testing of all safety-related snubbers. A visual inspection is the observation of the condition of installed snubbers to identify those that are damaged, degraded, or inoperable as caused by physical means, leakage, corrosion, or environmental exposure. To verify that a snubber can operate within specific performance limits, the licensee performs functional testing that typically involves removing the snubber and testing it on a specially designed stand or bench. The performance of visual examinations is a separate process that complements the functional testing program and provides additional confidence in snubber operability.

SQN TRM TR 3/4.7.9 incorporates GL 90-09, "Alternative Requirements for Snubber Visual Inspection Intervals and Corrective Actions." GL 90-09 acknowledges that the visual inspection schedule (as contained in OM-4) is excessively restrictive and that licensees with large snubber populations have spent a significant amount of resources and have subjected plant personnel to unnecessary radiological exposure to comply with the visual examination requirements. GL 90-09 states that its alternative schedule for visual inspection provides the same confidence

level as that provided by OM-4.

SQN TRM TR 3/4.7.9 defines inservice examination requirements, examination frequency, method of examination, subsequent examination intervals, failure evaluation, inservice operability test requirements, initial snubber sample size, additional sampling, failure evaluation, test failure mode groups, and corrective actions for the 10 percent sample plan that are similar to those provided by OM-4. OM-4 requirements and TRM TR 3/4.7.9 criteria are compared and summarized in the following table:

	Criteria	**ASME/ANSI OM Part 4 -1988**	**Sequoyah, Units 1 and 2, TRM 3/4.7.9 Requirements**
Inservice Examination			
1.	Visual Examination	Paragraph 2.3.1.1, Visual Examination, states that snubber visual examinations shall identify impaired functional ability due to physical damage, leakage, corrosion, or degradation.	TR 4.7.9.c requires that visual inspections verify (1) that there are no visible indications of damage or impaired operability; (2) bolts attaching the snubber to the foundation or supporting structure are secure; and (3) snubbers attached to sections of safety-related systems are functional.
2.	Visual Examination Interval Frequency	Paragraph 2.3.2.2 provides Examination Interval frequency and additional examination requirements.	Table TR 4.7.9-1 provides snubber visual inspection interval frequency.
3.	Method of Visual Examination	IWF-5200(a) and IWF-5300(a) requires use of the VT-3 visual examination method described in IWA-2213.	The personnel performing the TRM visual examinations are trained specifically on the TRM implementing instructions prior to performing the examination. The licensee plans to implement visual requirements of IWA-2321(a), in lieu of VT-3 requirements.
4.	Subsequent Examination Intervals	Paragraph 2.3.2 provides guidance for inservice examination intervals based on the number of unacceptable snubbers discovered.	Table TR 4.7.9-1 provides a snubber visual inspection interval based on the number of unacceptable snubbers discovered. These requirements are similar to NRC GL 90-09.

	Criteria	ASME/ANSI OM Part 4 -1988	Sequoyah, Units 1 and 2, TRM 3/4.7.9 Requirements
5.	Inservice Examination Failure Evaluation	Section 2.3.4 states that snubbers not meeting examination and acceptance criteria shall be evaluated to determine the cause of unacceptability.	TR 4.7.9.c states that during visual examination, if snubbers appears inoperable; then (1) the cause of the rejection is clearly established and remedied for that particular snubber and for other generically susceptible snubbers, and (2) the affected snubber is functionally tested in the as-found condition. Hydraulic snubbers with inoperable single or common fluid reservoirs which have uncovered fluid ports shall be declared inoperable.
Inservice Operability Test			
1.	Inservice Operability Test Requirements	Paragraph 3.2.1.1, Operability Test, states that snubber operational readiness tests shall verify activation, release rate, and breakaway force or drag force by either an in-place or bench test.	TR 4.7.9.d states that snubbers shall be functionally tested either in-place or in a bench test. TR 4.7.9.e requires snubber functional tests to verify (1) activation in tension and compression; (2) bleed or release where required; (3) force required to initiate or maintain motion within the specified range in both directions of travel.
2.	Snubber Sample size	Paragraph 3.2.3 states that each defined test plan group shall use either a 10 percent sampling plan; a “37 testing sample plan;” or a “55 testing sample plan” during each refueling outage.	TR 4.7.9.d states that a representative sample of 10 percent of the total of the safety-related snubbers in use in the plant shall be functionally tested either in place or in a bench test.
3.	Additional Sampling	The snubbers which have been found unacceptable per the testing criteria shall be subject to para. 3.2.3.1 (b), which states that the additional sample size must be at least one-half the size of the initial sample size of the “defined test plan group” of snubbers.	TR 4.7.9.f requires if any selected snubber fails to lock up or fails to move due to manufacture or design deficiency, all snubbers of the same design, subject to the same defect shall be tested. If a snubber does not meet the functional test acceptance criteria, an additional lot equal to one-half the original lot size shall be functionally tested for each failed snubber.

	Criteria	ASME/ANSI OM Part 4 -1988	Sequoyah, Units 1 and 2, TRM 3/4.7.9 Requirements
4.	Failure Evaluation	Paragraph 3.2.4.1 states that snubbers not meeting the operability testing acceptance criteria in paragraph 3.2.1 shall be evaluated to determine the cause of the failure.	TRM TR 4.7.9.f states an engineering evaluation shall be made of each failure to meet the functional test acceptance criteria to determine the cause of the failure.
5.	Test Failure Mode Groups	Paragraph 3.2.4.2 states that unacceptable snubber(s) shall be categorized into failure mode group(s). A test failure mode group(s) shall include all unacceptable snubbers that have a given failure mode, and all other snubbers subject to the same failure mode.	TRM TR 4.7.9.f states an engineering evaluation shall be made of each failure to meet the functional test acceptance criteria to determine the cause of the failure. The result of this analysis shall be used, if applicable, in selecting snubbers to be tested in the subsequent lot in an effort to determine the operability of other snubbers which may be subject to the same failure mode.
6.	Corrective Actions for 10 percent Sample Plan	Paragraph 3.2.5.1 states that unacceptable snubbers shall be repaired, modified, or replaced.	TRM TR 4.7.9.h states that 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 results shall be tested to meet the functional test criteria before installation.

Inservice Examination Requirements

(1) Visual Examination

TRM TR 4.7.9.c states that visual inspections shall verify that: (1) there are no visible indications of damage or impaired operability; (2) bolts attaching the snubber to the foundation or supporting structure are secure; and (3) snubbers attached to sections of safety-related systems that have experienced unexpected potentially damaging transients since the last inspection period shall be evaluated for the possibility of concealed damage and functionally tested, if applicable, to confirm operability. The visual examination per TRM TR 4.7.9 verifies visible indication of damage or impaired operability of snubbers as well as its attachments and supports. OM-4, paragraph 2.3.1.1, requires snubber visual examinations to identify impaired functional ability due to physical damage, leakage, corrosion, or degradation. Therefore, TRM TR 4.7.9 snubber visual examination requirements are considered to be equivalent to the

snubber visual examination requirements of OM-4 paragraphs 2.3.1.1 and provides an acceptable level of quality and safety.

(2) Visual Examination Interval Frequency

TRM Table 4.7.9-1 provides snubber visual inspection interval frequency requirements which are different than the OM-4 visual inspection interval requirements. Table 4.7.9-1 incorporates the visual inspection interval frequency requirements as specified in GL 90-09. GL 90-09 acknowledges that the visual inspection interval frequency (as contained in OM-4) is excessively restrictive and that licensees with large snubber populations have spent a significant amount of resources and have subjected plant personnel to unnecessary radiological exposure to comply with the visual examination requirements. GL 90-09 states that its alternative schedule (interval frequency) for visual inspection provides the same confidence level as that provided by OM-4. Therefore, the licensee proposed alternative provides an acceptable level of quality and safety.

(3) Method of Visual Examination

IWF-5200(a) and IWF-5300(a) requires that preservice and inservice examination be performed in accordance with ASME/ANSI OM, Part 4, using the VT-3 visual examination method described in IWA-2213. IWA-2213 states that VT-3 examinations are conducted to determine the general mechanical and structural condition of components and their supports by verifying parameters such as clearance, settings, and physical displacements; and to detect discontinuities and imperfections, such as loss of integrity at bolts and welded connections, loose or missing parts, debris, corrosion, wear, or erosion. The licensee states that the SQN TRM snubber program is directed by a designated snubber program engineer. The personnel performing the TRM visual examinations are trained specifically on the TRM implementing instructions prior to performing the examination. The licensee plans to implement visual requirements of IWA-2321(a), “Visual Acuity,” for the inspection personnel.

The intent and scope of OM-4, VT-3 examination requirements are equivalent to the SQN TRM visual inspection requirements. The licensee states that personnel performing the visual examination shall be qualified to perform the TRM required examinations and testing of snubbers. Therefore, the NRC staff finds the licensee’s method of snubber visual inspection provides an acceptable level of quality and safety.

(4) Subsequent Examination Intervals

TRM Table 4.7.9-1 establishes subsequent snubber visual inspection intervals based on the number of unacceptable snubbers discovered, in lieu of OM-4, paragraph 2.3.2 requirements. These requirements are equivalent to the guidance provided in GL 90-09, which has been approved for use by the NRC. Therefore, the NRC staff finds that the subsequent examination intervals contained in TRM Table 4.7.9-1 provide an acceptable level of quality and safety.

(5) Inservice Examination Failure evaluation

OM-4, paragraph 2.3.4.1 requires that snubbers not meeting examination criteria be evaluated to determine the cause of unacceptability. Paragraph 2.3.4.2 states that snubbers found unacceptable, may be tested in accordance with the requirements of paragraph 3.2. TRM

TR 4.7.9.c states that snubbers which appear inoperable (unacceptable) as a result of visual examination may be determined operable for the purpose of establishing the next visual inspection interval, providing that (1) the cause of the rejection is clearly established and remedied for that particular snubber and for other snubbers that may be generically susceptible and (2) the affected snubber is functionally tested in the as-found condition and determined operable per TR 4.7.9.e, "Functional Test Acceptance Criteria." Hydraulic snubbers with inoperable single or common fluid reservoirs which have uncovered fluid ports shall be declared inoperable. The staff finds that the TRM requirements are considered to be equivalent to the snubber failure evaluation requirements of OM-4 paragraph 2.3.4. Therefore, the TRM's inservice examination failure evaluation requirements provide an acceptable level of quality and safety.

Inservice Operability Test Requirements

(1) Operability Test

TRM TR 4.7.9.d, requires that snubbers be functionally tested either in-place or in a bench test. TRM TR 4.7.9.e, states that a snubber functional test is to verify (1) activation in tension and compression; (2) bleed or release where required, in tension and compression; and (3) force required to initiate or maintain motion of the snubber is within the specified range in both directions of travel. OM-4, paragraph 3.2.1.1, Operability Test, states that snubber operational readiness tests verify activation, release rate, and breakaway force or drag force by either an in-place or bench test. The staff finds that the TRM requirements are considered to be equivalent to the snubber operability test requirements of OM-4 paragraph 3.2.1. Therefore, the TRM operability test requirements provide an acceptable level of quality and safety.

(2) Snubber Sample Size

TRM TR 4.7.9.d states that a representative sample of 10 percent of the total of the safety-related snubbers in use in the plant shall be functionally tested either in-place or in a bench test. These tests are normally performed during refueling outages. OM-4, Section 3.2.3 requires either a 10 percent testing sampling plan, a "37 testing sample plan," or a "55 testing sample plan." The licensee is using a 10 percent sample criteria which is equivalent to the 10 percent sample testing requirements of OM-4. As a result, the number of snubbers tested during outages are considered to be equivalent to the OM-4 requirements. Therefore, the TRM snubber sample size provides an acceptable level of quality and safety.

(3) Additional Sampling

TR 4.7.9.f states that if any selected snubber fails to lock up or fails to move due to manufacture or design deficiency, all snubbers of the same design, subject to the same defect shall be tested. If a snubber does not meet the functional test acceptance criteria, an additional lot equal to one-half the original lot size shall be functionally tested for each failed snubber. OM-4, paragraph 3.2.3.1(b) states that the additional sample size must be at least one-half the size of the initial sample size of the "defined test plan group" of snubbers. That is, for a 10 percent sample program, an additional 5 percent of the same type of snubber in the overall

population would need to be tested. The NRC staff finds that the TRM 4.7.9.f requirements for additional sampling are considered to be equivalent to the OM-4 requirements. Therefore, the

TRM snubber additional sampling requirements provides an acceptable level of quality and safety.

(4) Inservice Operability Failure Evaluation

OM-4 paragraph 3.2.4.1 requires that snubbers not meeting operability testing acceptance criteria in paragraph 3.2.1 be evaluated to determine the cause of the failure. The cause of failure evaluation requires the review of information related to other unacceptable snubbers and the determination whether other snubbers of similar design would require further examination. TRM TR 4.7.9.f states that if any selected snubber fails to lock up or fails to move due to manufacture or design deficiency, all snubbers of the same design, subject to the same defect shall be tested. If a snubber does not meet the functional test acceptance criteria, an additional lot equal to one-half the original lot size shall be functionally tested for each failed snubber. An engineering evaluation shall be made of each failure to meet the functional test acceptance criteria to determine the cause of the failure. The result of this analysis shall be used, if applicable, in selecting snubbers to be tested in the subsequent lot in an effort to determine the operability of other snubbers which may be subject to the same failure mode. Therefore, the NRC staff finds that the TRM TR 4.7.9.f requirements related to inservice operability failure evaluation are considered to be equivalent to the OM-4 requirements and provides an acceptable level of quality and safety.

(5) Test Failure Mode Groups

OM-4 paragraph 3.2.4.2 requires that unacceptable snubber(s) be categorized into failure mode group(s). A test failure mode group shall include all unacceptable snubbers that have a given failure mode, and all other snubbers subject to the same failure mode. TRM TR 4.7.9.f states an engineering evaluation shall be made of each failure to meet the functional test acceptance criteria to determine the cause of the failure. The result of this analysis shall be used, if applicable, in selecting snubbers to be tested in the subsequent lot in an effort to determine the operability of other snubbers which may be subject to the same failure mode. Testing shall continue until no additional inoperable snubber is found within a subsequent required lot or all snubbers of the original inspection group have been tested, or all suspect snubbers identified by the failure analysis have been tested, as applicable. Therefore, the staff finds that the TRM requirements are considered to be equivalent to the OM-4 requirements, and provides an acceptable level of quality and safety.

(6) Inservice Operability Testing Corrective Actions (for 10 percent testing sample plan)

OM-4, paragraph 3.2.5.1 requires that unacceptable snubbers be adjusted, repaired, modified, or replaced. TRM TR 4.7.9.h states that 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 results shall be tested to meet the functional test criteria before installation. Therefore, the NRC staff finds that the TRM corrective actions associated with unacceptable snubbers at SQN are considered to be equivalent to the OM-4 requirements and provides an acceptable level of quality and safety.

Repair and Replacement Activities

IWF-5400, Repair/replacement activities, states that snubbers installed, corrected or modified

by repair/replacement activities shall be examined and tested in accordance with the applicable requirements of IWF-5200 prior to return to service. ASME Section XI, IWF-5200 references OM-4, 1987 Edition with OMa-1988. TRM TR 4.7.9.h states that replacement snubbers and snubbers which have repairs which might affect the functional test results shall be tested to meet the functional test criteria before installation. Therefore, the NRC staff finds that the TRM requirements related to repair and replacement activities associated with snubbers at SQN are considered to be equivalent to IWF-5200 requirements and provides an acceptable level of quality and safety.

Record of snubber examinations and testing

ASME Section XI, IWA-6210(c) requires the preparation of preservice and inservice inspection summary reports for Class 1 and 2 snubbers. IWA-6230, requires the preparation of an inservice inspection summary report after each refueling outage. IWA-6240, requires the submittal of summary reports to the regulatory authority. The licensee states that relief is sought from the ASME Section XI requirements for the preparation and submittal of summary reports for snubber examinations and tests, and the licensee does not plan to prepare snubber summary reports for submittal to the NRC. ASME Section XI, IWF-5200 and IWF-5300, references OM-4, 1987 Edition with OMa-1988. OM-4, Section 1.7 requires records of snubber examinations and tests be prepared and maintained by the Owner in accordance with the Owner's administrative procedures. The licensee states that the SQN TRM is implemented by site procedures (surveillance instructions) that retain inspection and test results for snubbers. On-site retention of the snubber inspection and test results in a summary report format is considered acceptable for recording this data in accordance with the TRM and implementing procedures in lieu of the requirements of Section XI and OM-4, and these records are available for review to demonstrate the acceptability of snubbers at SQN. Therefore, the licensee's proposed method of preparing and maintaining records of snubber examinations and tests provides an acceptable level of quality and safety.

Authorized Inspection Agency

ASME, Section XI, IWA-2110, "Duties of the Inspector," specifies various inspector duties related to examination and testing activities. IWA-9000 states that an ANII is a person who is employed and has been qualified by an Authorized Inspection Agency (AIA) to verify examination, tests and repair/replacement activities. The SQN TRM snubber program does not require ANII involvement for examination and test requirements. The SQN TRM snubber program is directed by a designated snubber program engineer. The snubber program engineer provides oversight of the TRM snubber program during implementation. The snubber program engineer's responsibilities include serving as the TRM test director in accordance with TVA's procedure for conducting a test, and reviewing the TRM examination and test data. ANII involvement for snubber repair and replacement activities is maintained as required by TVA's ASME Section XI Repair and Replacement Program. By reviewing and evaluating the TRM examination and test data, the snubber program engineer provides an acceptable level of quality and safety without third party inspector participation.

Conclusion

Based on the above discussions, the staff finds that snubber visual examinations and functional testing, conducted in accordance with TRM TR 3/4.7.9, provides reasonable assurance of

snubber operability and provides a level of quality and safety equivalent to that of the ASME Code, Section XI, subarticles IWF-5200(a) and (b), and IWF-5300(a) and (b). The staff concludes that the proposed alternative to use SQN TRM TR 3/4.7.9 for snubber visual inspection and functional testing provides an acceptable level of quality and safety. Therefore, pursuant to 10 CFR 50.55a(a)(3)(i), the licensee's alternative is authorized for the SQN Units 1 and 2, third ten-year ISI interval.

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