WOLF CREEK
NUCLEAR OPERATING CORPORATION

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ET 05-0014

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

Subject: Docket 50-482: 10 CFR 50.55a Request Number I3R-03 for the Third Ten-Year Interval Inservice Inspection (ISI) Program – Request for Relief to Allow Use of Alternate Requirements for Snubber Inspection and Testing

Gentlemen:

Pursuant to 10 CFR 50.55a(a)(3)(i), Wolf Creek Nuclear Operating Corporation (WCNOC) hereby requests NRC approval for use of an alternative to the requirements of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel (BPV) Code, Section XI for inservice inspection and testing of snubbers for the third 10-year interval of WCNOC's Inservice Inspection (ISI) Program.

Attachment 1 provides 10 CFR 50.55a Request Number I3R-03, which requests an alternative to the requirements of ASME Section XI. This alternative would be the continued use of WCNOC Technical Requirements Manual Section 3.7.20, "Snubbers", as the governing set of requirements for snubber inspection and testing. Attachment 2 provides Technical Requirements Manual Section TR 3.7.20, "Snubbers," and the associated Bases. Relief was previously approved for the Second Ten-Year ISI Interval as Relief Request I2R-15 by NRC letter dated October 24, 1997.

The Third Ten-Year ISI Program Plan and other 10 CFR 50.55a Requests for the Third ISI Interval are not ready for submittal at this time and will be submitted at a later date. To help expedite the review of this 10 CFR 50.55a Request, it is being submitted separately.

WCNOC requests approval of this 10 CFR 50.55a Request by February 6, 2006. Approval of this relief request will allow WCNOC to continue to utilize the existing Technical Requirements Manual requirements governing snubber inspection and testing during refueling outages for the third 10-year interval. The third 10-year interval began September 3, 2005.

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There are no commitments contained within this letter. If you have any questions, please contact me at (620) 364-4084 or Mr. Kevin Moles at (620) 364-4126.

Sincerely,

Terry J. Garrett

TJG/rlg

Attachment I 10 CFR 50.55a Request Number I3R-03
Attachment II Technical Requirements Manual Section TR 3.7.20, "Snubbers," and the associated Bases

cc: J. N. Donohew (NRC), w/a
W. B. Jones (NRC), w/a
B. S. Mallett (NRC), w/a
Senior Resident Inspector (NRC), w/a

10 CFR 50.55a Request Number I3R-03

Proposed Alternative
In Accordance with 10 CFR 50.55a(a)(3)(i)

Alternative Provides Acceptable Level of Quality and Safety

1. ASME Code Components Affected

All Safety-Related ASME Section XI Code Class 1, 2, and 3 snubbers.

2. Applicable Code Edition and Addenda

ASME Boiler and Pressure Vessel Code, Section XI 1998 Edition through 2000 Addenda

3. Applicable Code Requirement

An alternative is requested to the following ASME Section XI requirements for inspection and testing of snubbers:

(a) Preservice/Inservice examinations in accordance with ASME/ANSI OM, Part 4.
(b) Preservice/Inservice tests in accordance with ASME/ANSI OM, Part 4.
(c) Third-party Authorized Inspection Agency inspection activities for snubber examination and testing in accordance with IWA-2210.
(d) Reporting of snubber examinations and testing in accordance with IWA-6200.

4. Reason for Request

ASME Section XI, 1998 Edition through 2000 Addenda, Subarticles IWF-5200 (a) and (b) and IWF-5300 (a) and (b) specify that snubber preservice/inservice examinations and tests be performed in accordance with ASME/ANSI OM, Part 4.

Snubber inspections and tests at Wolf Creek Generating Station (WCGS) are currently performed under the Technical Requirements Manual (TRM) Section 3.7.20, "Snubbers," and implementing procedures. The current inspection/testing program as defined by the TRM provides for an acceptable level of quality and safety equal to or greater than that of ASME Section XI.

5. Proposed Alternative and Basis for Use

In lieu of implementing the Section XI requirements for snubber examination and testing, it is proposed that the preservice/inservice inspection and testing be performed under WCGS TRM 3.7.20, "Snubbers," and implementing procedures. The proposed alternative and basis for the use is discussed in Sections A) through E) below.

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For clarification, this 50.55a Request includes only the snubber and its pin-to-pin connections and does not include the remaining portion of the Section III NF support containing a snubber. As required by IWF-5200 (c) and IWF-5300 (c) the examination of the remaining portion of the support, including integral and nonintegral attachments, for supports containing snubbers will be performed in accordance with Section XI Subsection IWF as part of the In-Service Inspection (ISI) Program Plan. Specifically, as part of the examinations required by the ISI Program Plan, WCGS will visually examine (VT-3) the ASME Section III NF portion of supports in accordance with Subsection IWF, but will exclude the snubber and its pin-to-pin connections to the rest of the support.

A) - Visual Snubber Examinations

The WCGS TRM Snubber Program visual inspection requirements for snubbers are comparable with Section XI VT-3 requirements. IWF-5000 requires that the OM Part 4 examinations be performed using the VT-3 visual examination method described in IWA-2213. IWA-2213 reads as follows:

"VT-3 examinations are 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 examinations for conditions that could affect operability or functional adequacy of snubbers and constant load and spring supports."

The WCGS TRM states that:

"Visual inspections shall verify that: 1) There are no visible indications of damage or impaired OPERABILITY, 2) Attachments to the foundation or support structure are functional, and 3) Fasteners for attachment of the snubber to the component and to the snubber anchorage are functional."

The WCGS procedure that implements the TRM snubber inspections includes requirements to inspect for the following unacceptable indications:

- Indications of degradation and severe operating environments
- Loose, missing, or incorrectly installed structural connections or fasteners
- Corrosion or solid deposits that could result in unacceptable snubber performance
- Deformation
- Weld arc strikes, paint, weld slag, adhesive or other deposits on indicator tube or support cylinder that could result in unacceptable snubber performance
- Spherical bearing not fully engaged in attachment lug
- Binding of the snubber in the structural or component attachment
- Misalignment in excess of design off-set or installation tolerances
- Visible indications of damage or impaired operability

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The intent and scope of the ASME/ANSI OM, Part 4, and the WCGS Snubber Program are essentially equal, although the Code wording is more detailed than the TRM in listing specific items to be included. However, the implementing procedure for the TRM snubber inspections closely parallels the Code listing. In addition, the TRM snubber inspections include the snubber attachment to the foundation or supporting structure up to and including the fasteners for connecting the snubbers to the pipe attachment or component attachment. Also, the TRM snubber inspections are performed by personnel that are certified to perform Visual, VT-3 examinations per IWA-2300. The alternative qualification requirements of IWA-2317 will not be utilized.

The WCGS TRM also incorporates the reduced visual inspection frequency table as provided in NRC Generic Letter 90-09, which is similar to the provisions in OM Code Subsection ISTD. This results in a significant reduction in unnecessary radiological exposure to plant personnel, a savings in company resources, and compliance with visual inspection requirements while maintaining the same confidence level in snubber operability as that provided by following Section XI requirements.

B) - Snubber Testing

The WCGS TRM snubber testing requirements for snubbers are comparable with ASME/ANSI OM, Part 4. ASME/ANSI OM, Part 4, requires, in part, that:

"Snubber operational readiness test shall verify the following:
(a) activation is within the specified range of velocity or acceleration in tension and in compression;
(b) release rate, when applicable, is within the specified range in tension and in compression. For units specifically required not to be displaced under continuous load, ability of the snubber to withstand load without displacement;
(c) for mechanical snubbers, drag force is within specified limits, in tension and in compression."

The WCGS TRM states that:

"The snubber functional test shall verify that:

a. Activation (restraining action) is achieved within the specified range in both tension and compression;
b. For mechanical snubbers, the force required to initiate or maintain motion of the snubber is within the specified range in both directions of travel.

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."

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The WCGS TRM snubber testing program provides for comprehensive and conservative requirements that are effective in providing a reliable snubber population. This results in increased confidence in plant safety. The use of the WCGS TRM addresses the intent and scope of the requirements Section XI Article IWF-5000 in a single governing document that can be consistently applied.

C) – Authorized Inspection Agency

Services of an Authorized Inspection Agency (AIA) and Authorized Nuclear Inservice Inspectors (ANIIs) are not included in the OM Code and are not explicitly defined in ASME Section XI for snubber inspections and tests. Similarly, WCGS's snubber inspection and testing in accordance with TRM Section 3.7.20 has not included involvement of an AIA or ANIIs in the previous two 10-year inspection intervals. ANII qualification in accordance with ASME QAI-1 does not include knowledge of OM Code examinations and tests for snubber operability nor of WCGS's TRM requirements for snubber inspections and tests. Therefore, exclusion of services of an AIA and ANIIs do not result in a reduction of quality and safety.

D) – Reports

Section XI IWA-6000, Records and Reports, requires Owners to prepare the Owner's Report for Inservice Inspection, Form NIS-1 for preservice and inservice examination of Class 1 and 2 pressure retaining components and their supports and submit the report to the NRC. However, IWA-6000 is not clear concerning what records and reports are required for snubbers. IWA-6340 clearly does not address records for snubber testing and is not clear regarding snubber examination records. OM Part 4 does clearly require records of snubber examinations and tests to be prepared and maintained by the Owner but does not require submittal of any reports to the NRC. Wolf Creek Nuclear Operating Corporation utilizes Code Case N-532-1 for the third ISI interval at WCGS, which addresses reporting provisions in lieu of IWA-6000. Code Case N-532-1 does not address snubber examinations and tests.

The Wolf Creek Nuclear Operating Corporation Quality Assurance Program maintains records of snubber inspections and tests performed in accordance with the TRM and implementing procedures in lieu of the requirements of Section XI and OM Part 4. These records are available for review to demonstrate the acceptability of snubbers at WCGS.

E) - Conclusion

Snubber inspections and tests at WCGS are currently performed under the TRM Section 3.7.20, "Snubbers." The current inspection/testing program as defined by the TRM provides for an acceptable level of quality and safety equal to or greater than that of ASME Section XI.

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6. Duration of Proposed Alternative

Snubber visual inspections and testing will be scheduled and performed in accordance with TRM 3.7.20, "Snubbers," during the third inspection interval that begins on September 3, 2005 and ends on September 2, 2015.

7. Precedents

Wolf Creek Relief Request I2R-15 was previously granted to use the TRM alternative during the second 10-year inservice inspection interval for snubber testing/inspection. Reference Wolf Creek Letter Numbers WM 95-0129, dated 8/30/1995, ET 95-0126, dated 11/17/1995, and NRC approval SER dated 10/24/1997. (TAC No. M93381)

The NRC approved McGuire Nuclear Station Unit 2 Relief Request RR-03-002 on November 22, 2004 to allow the use of their Selected Licensee Commitment 16.9.15 for their third 10-year inservice inspection interval for snubber testing/inspection. (TAC No. MC2384)

Susquehanna Steam Electric Station Units 1 and 2 Relief Request 3RR-03 was approved by the NRC on September 24, 2004 to allow the use of their TRM snubber program for their third 10-year inservice inspection interval for snubber testing/inspection. (TAC Nos. MC1185 and MC1186)

Attachment II

Technical Requirements Manual Section 3.7.20, "Snubbers," and the associated Bases

3.7 PLANT SYSTEMS

3.7.20 Snubbers

TR 3.7.20 All required snubbers shall be OPERABLE, and no system, or portion thereof, has experienced an unexpected, potentially damaging transient.

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

ACTIONS

NOTE
Separate Condition entry is allowed for each affected system.

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. NOTE Required Action A.2 must be completed whenever this Condition is entered. One or more required snubbers inoperable.	A.1.1	Restore required snubber(s) to OPERABLE status.	72 hours
	OR		
	A.1.2	Replace required snubber(s).	72 hours
	AND		
	A.2	Perform an engineering evaluation per section 5 of Table TR 3.7.20-4 on the attached component.	72 hours
B. A system, or portion thereof, has experienced an unexpected, potentially damaging snubber transient.	B.1	Perform an inspection of required snubbers affected by transient in accordance with Table TR 3.7.20-1.	Within 6 months following the event

(continued)

ACTION (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Required Action and associated Completion Time not met.	C.1 Declare attached system inoperable.	Immediately

TECHNICAL SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
TSR 3.7.20.1	Perform visual inspections of each required snubber in accordance with Table TR 3.7.20-2.	In accordance with Table TR 3.7.20-3
TSR 3.7.20.2	----------NOTE---------- This surveillance shall not be performed in MODES 1 and 2. ---------- Perform a functional test on a representative sample of each type of snubber in accordance with Table TR 3.7.20-4.	18 months
TSR 3.7.20.3	Verify that the service life of mechanical snubbers is not exceeded.	In accordance with Snubber Service Life Program

Table TR 3.7.20-1
Transient Event Inspection

1.	An inspection shall be performed of all snubbers attached to sections of systems that have experienced unexpected, potentially damaging transients as determined from a review of operational data and a visual inspection of the systems within 6 months following such an event.
2.	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: a) Manually induced snubber movement; or b) Evaluation of in-place snubber piston setting; or c) Stroking the mechanical snubber through its full range of travel.

Table TR 3.7.20-2
Visual Inspections

1. Schedule

   a. Snubbers are categorized as inaccessible or accessible during reactor operation. Each of these categories (inaccessible and accessible) may be inspected independently according to the schedule determined by Table TR 3.7.20-3.

   b. The visual inspection interval for each type of snubber shall be determined based upon the criteria provided in Table TR 3.7.20-3.

2. Acceptance Criteria

   a. Visual inspections shall verify that:

      1) There are no visible indications of damage or impaired OPERABIITY,

      2) Attachments to the foundation or supporting structure are functional, and

      3) Fasteners for attachment of the snubber to the component and to the snubber anchorage are functional.

   b. 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:

      1) The cause of the rejection is clearly established and remedied for that particular snubber and for other snubbers, irrespective of type, that may be generically susceptible; and

      2) The affected snubber is functionally tested in the as-found condition and determined OPERABLE per Table TR 3.7.20-4, section 3.

      3) A review and evaluation shall be performed and documented to determine system OPERABILITY with an unacceptable snubber. If OPERABILITY can not be justified, the system shall be declared inoperable and the applicable Technical Specification LCO or Technical Requirements Manual TR shall be considered not met.

Table TR 3.7.20-3 (Page 1 of 2)
Snubber Visual Inspection Interval

	NUMBER OF UNACCEPTABLE SNUBBERS		
POPULATION OR CATEGORY[a,b]	COLUMN A EXTEND INTERVAL[c,f]	COLUMN B REPEAT INTERVAL[d,f]	COLUMN C REDUCE INTERVAL[e,f]
1	0	0	1
80	0	0	2
100	0	1	4
150	0	3	8
200	2	5	13
300	5	12	25
400	8	18	36
500	12	24	48
750	20	40	78
≥ 1000	29	56	109

Note a: The next visual inspection interval for a snubber category shall be determined based upon the previous inspection interval and the number of unacceptable snubbers found during that interval. Snubbers may be categorized, based upon their accessibility during power operation, as accessible or inaccessible. These categories may be examined separately or jointly. However, categories must be determined and documented before any inspection and that determination shall be the basis upon which to determine the next inspection interval for that category.

Note b: Interpolation between population per category and the number of unacceptable snubbers is permissible. Use next lower integer for the value of the limit for Columns A, B, and C if that integer includes a fractional value of unacceptable snubbers as determined by interpolation.

Note c: If the number of unacceptable snubbers is equal to or less than the number in Column A, the next inspection interval may be twice the previous interval but not greater than 48 months.

Table TR 3.7.20-3 (Page 2 of 2)
Snubber Visual Inspection Interval

Note d:	If the number of unacceptable snubbers is equal to or less than the number in Column B but greater than the number in Column A, the next inspection interval shall be the same as the previous interval.
Note e:	If the number of unacceptable snubbers is equal to or greater than the number in Column C, the next inspection interval shall be two-thirds of the previous interval. However, if the number of unacceptable snubbers is less than the number in Column C but greater than the number in Column B, the next interval shall be reduced proportionally by interpolation, that is, the previous interval shall be reduced by a factor that is one-third of the ratio of the difference between the number of unacceptable snubbers found during the previous interval and the number in Column B to the difference in the numbers in Column B and C.
Note f:	The provisions of TSR 3.0.2 are applicable for all inspection intervals up to and including 48 months.

Table TR 3.7.20-4 (Page 1 of 3)
Functional Tests

1. A representative sample of snubbers of each type shall be tested using one of the following sample plans. The sample plan shall be selected prior to the test period and cannot be changed during the test period.

   a. At least 10% of the total of each type of snubber 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 section 4 of this Table, an additional 5% of that type of snubber shall be functionally tested until no more failures are found or until all snubbers of that type have been functionally tested, or

   b. A representative sample of each type of snubber shall be functionally tested in accordance with Figure TR 3.7.20-1. "C" is the total number of snubbers of a type found not meeting the acceptance requirements of section 4 of this Table. The cumulative number of snubbers of a type tested is denoted by "N". At the end of each day's testing, the new values of "N" and "C" (previous day's total plus current day's increments) shall be plotted on the Figure TR 3.7.20-1. If at any time the point plotted falls in the "Accept" region, testing of snubbers of that type 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.

2. If during the functional testing, additional testing is required due to failure of snubbers, the unacceptable snubbers may be categorized into failure mode group(s). A failure mode group shall include all unacceptable snubbers that have a given failure mode and all other snubbers subject to that same failure mode. Once a failure mode group has been established, it can be separated for continued testing apart from the general population of snubbers. However, all unacceptable snubbers in the failure mode group shall be counted as one unacceptable snubber for additional testing in the general population. Testing in the failure mode group shall be based on the number of unacceptable snubbers and shall continue in accordance with the sample plan selected for the type or until all snubbers in the failure mode group have been tested. Any additional unacceptable snubbers found in the failure mode group shall be counted for continued testing only for that test failure mode group. In the event that a snubber(s) becomes included in more than one test failure mode group, it shall be counted in each failure mode group and shall be subject to the corrective action of each test failure mode group.

(continued)

Table TR 3.7.20-4 (Page 2 of 3)
Functional Tests

3. Testing equipment failure during functional testing may invalidate that day's testing and allow that day's testing to resume anew at a later time provided all snubbers tested with the failed equipment during the day of equipment failure are re-tested. The representative sample selected for the functional test sample plans shall be randomly selected from the snubbers of each type and reviewed before beginning the testing. The review shall ensure, as far as practicable, that they are representative of the various configurations, operating environments, range of size, and capacity of snubbers of each type. Snubbers placed in the same location as snubbers which failed the previous functional test shall be re-tested at the time of the next functional test but shall not be included in the sample plan.

4. Functional Test Acceptance Criteria

The snubber functional test shall verify that:

a. Activation (restraining action) is achieved within the specified range in both tension and compression;

b. For mechanical snubbers, the force required to initiate or maintain motion of the snubber is within the specified range in both directions of travel.

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.

5. Functional Test Failure Analysis

a. An engineering evaluation shall be made on each required snubber which fails 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 type which may be subject to the same failure mode.

b. When a required snubber is found inoperable, an engineering evaluation shall be performed on the component(s) to which the inoperable snubber is attached. The purpose of this engineering evaluation shall be to determine if the component(s) to which the inoperable snubber is attached is adversely affected by the inoperability of the snubber (i.e. whether the component remains capable of performing its required function).

(continued)

Table TR 3.7.20-4 (Page 3 of 3)
Functional Tests

5. (continued)

c. When a required snubber being functionally tested either fails to lock up or fails to move, i.e., frozen-in-place, the cause of this failure will be evaluated. If this failure is determined to be caused by manufacturer or a design deficiency, all snubbers of the same type subject to the same defect shall be functionally, tested. These additional snubbers shall be tested independent of those initially chosen to be inspected during the present interval.

6. Functional Testing of Repaired and Replaced Snubbers

Snubbers which have failed to meet either 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 in the unit. Mechanical snubbers shall have met the acceptance criteria subsequent to their most recent service, and the freedom-of-motion test must have been performed within 12 months prior to being installed in the plant.

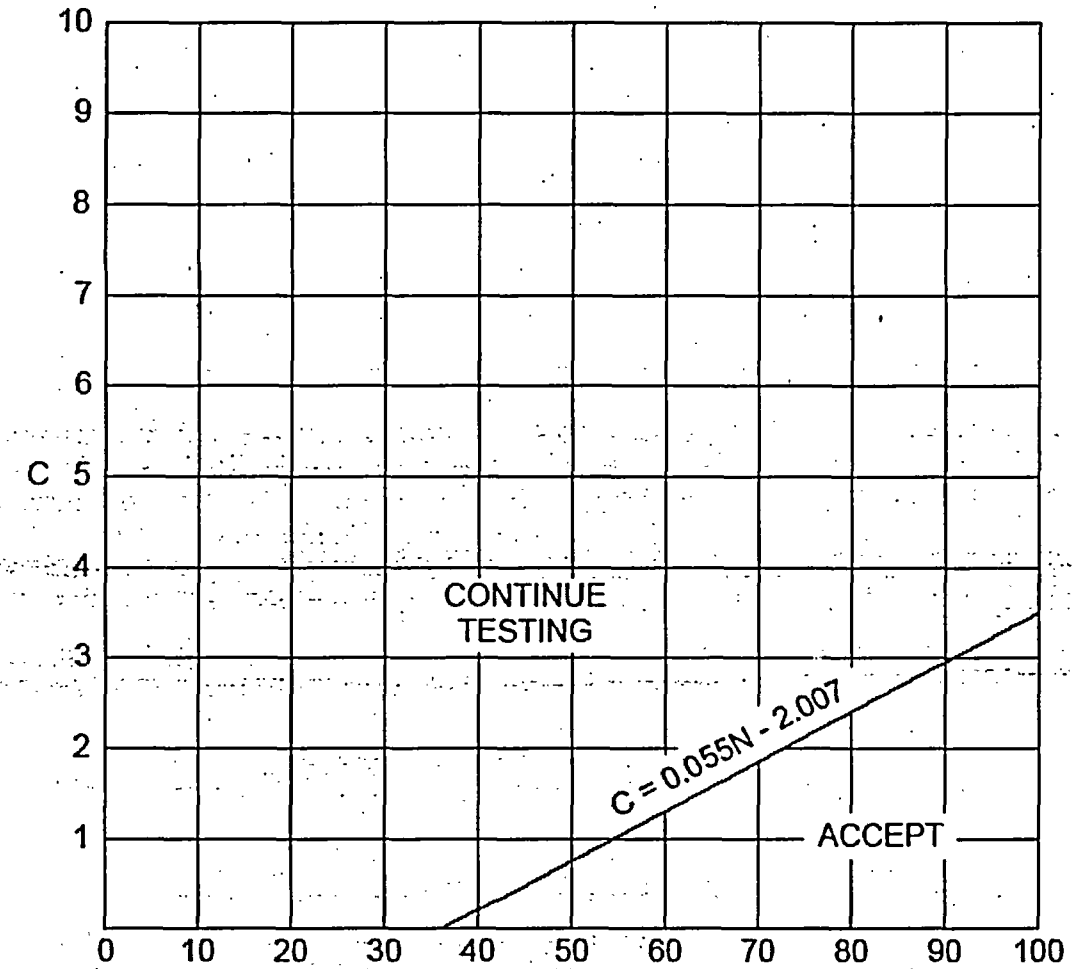

Figure TR 3.7.20-1 (page 1 of 1)

Sample Plan 1.b for Snubber Functional Test

B 3.7 PLANT SYSTEMS

TR B 3.7.20 Snubbers

BASES

BACKGROUND

Component standard supports, are those metal supports which are designed to transmit loads from the pressure-retaining boundary of the component to the building structure. Although classified as component standard supports, snubbers require special consideration due to their unique function. Snubbers are designed to provide no transmission of force during normal plant operations, but function as a rigid support when subjected to dynamic transient loadings. Therefore, snubbers are chosen in lieu of rigid supports where restricting thermal growth during normal operation would induce excessive stresses in the piping nozzles or other equipment. The location and size of the snubbers are determined by stress analysis. Depending on the design classification of the particular piping, different combinations of load conditions are established. These conditions combine loading during normal operation, seismic loading and loading due to plant accidents/transients to four different loading sets. These loading sets are designated as: normal, upset, emergency, and faulted condition. The actual loading included in each of the four conditions, depends on the design classification of the piping. The calculated stresses in the piping and other equipment, for each of the four conditions, must be in conformance with established design limits.

Supports for pressure-retaining components are designed in accordance with the rules of the ASME Boiler and Pressure Vessel Code, Section III, Division 1 (Ref. 1). The combination of loadings for each support, including the appropriate stress levels, meet the criteria of Regulatory Guide 1.124, "Design Limits and Loading Combinations for Class 1 Linear-Type Component Supports" (Ref. 2), and Regulatory Guide 1.130, "Design Limits and Loading Combinations for Class 1 Plate-and -Shell-Type Component Supports" (Ref. 3).

Snubbers are classified and grouped by design and manufacturer but not by size. For example, mechanical snubbers utilizing the same design features of the 2-kip, 10-kip, and 100-kip capacity manufactured by Company "A" are of the same type. The same design mechanical snubbers manufactured by Company "B" for the purposes of this Technical Requirements would be of a different type. Snubbers may also be classified and grouped by their inaccessibility or accessibility for the purpose of visual inspection. Therefore, each snubber type may be grouped for inspection in accordance with accessibility.

BASES

BACKGROUND (continued)

A list of individual snubbers with detailed information regarding the snubber's location, size and system(s) which it affects is available at the plant in accordance with Section 50.71(c) of 10 CFR Part 50. The accessibility of each snubber is determined and approved by the Plant Safety Review Committee. The determination is based upon the existing radiation levels and the expected time to perform a visual inspection in each snubber location as well as other factors associated with accessibility during plant operations (e.g., temperature, atmosphere, location etc.), and the recommendations of Regulatory Guides 8.8 and 8.10 (Refs. 7 and 8). The addition or deletion of any mechanical snubber is performed in accordance with Section 50.59 of 10 CFR Part 50.

The Snubber Service Life Program is administered through TR 5.5.5. The service life of a snubber is established via manufacturer input and information through consideration of the snubber service conditions and associated installation and maintenance records (newly installed snubber, seal replaced, spring replaced, in high radiation area, in high temperature area, etc.). The requirement to monitor the snubber service life is included to ensure that the snubbers periodically undergo a performance evaluation in view of their age and operating conditions. These records will provide statistical bases for future consideration of snubber service life.

APPLICABLE SAFETY ANALYSES

Pipe and equipment supports, in general, are not directly considered in designing the accident sequences for theoretical hazard evaluations. Further, various Probabilistic Risk Assessment (PRA) studies have indicated that snubbers are not of prime importance in a risk significant sequence (Refs. 4 and 5). Therefore, the function of the snubbers is not essential in mitigating the consequences of a DBA or transient (Refs. 6 and 9).

TR

This TR requires that all snubbers utilized on safety related equipment be OPERABLE, and no system, or portion there of, has experienced and unexpected, potentially damaging transient. Snubbers that are utilized on non-safety related systems, are also required to be OPERABLE if a failure could have an adverse effect on a safety related system. Individual snubbers may be removed from service for functional testing within the limits established herein without violating these requirements, although Required Actions and Completion Times still apply.

APPLICABILITY

The OPERABILITY of required snubbers is required in MODES 1, 2, 3, and 4. For MODES 5 and 6, the OPERABILITY is limited to those snubbers located on systems which need to be OPERABLE in MODES 5 and 6.

BASES

ACTIONS

A Note has been added to the ACTIONS to clarify the application of Completion Time rules. The Conditions of this Technical Requirement may be entered independently for each affected system. The Completion Time(s) of the inoperable snubber will be tracked separately for each affected system starting from the time the Condition was entered for that system as a result of discovery of an inoperable snubber.

A.1.1, A.1.2, and A.2

If one or more required snubbers have been declared inoperable, the snubber(s) must be restored to OPERABLE status within 72 hours. Alternatively, the snubber(s) must be replaced in the 72 hours. Condition A is modified by a Note that requires that Required Action A.2 be completed whenever Condition A is entered. Thus, if the snubber is restored to OPERABLE status, the Condition will require the completion of an engineering evaluation per section 5 of Table TR 3.7.20-4.

The engineering evaluation is performed to:

a) Determine the cause of the failure

As a result of this evaluation, the need for testing other snubbers will be considered. The results from the testing will be used to consider expanded functional testing and cause examination with consideration of manufacturing and design deficiency.

b) Determine the impact on the supported component

This evaluation shall determine if the inoperable snubber has adversely affected the attached component.

The 72 hours is based on engineering experiences and is reasonable, considering the time it will take to identify the problem and take the proper corrective actions.

B.1

If the plant has experienced an unexpected, potentially damaging snubber transient, an inspection per Table TR 3.7.20-1 is performed on all snubbers attached to sections of systems that have experienced the transient. The potential impact of the transient is assessed by reviewing operating data and by visually inspecting the associated system. In addition to the visual inspection, the freedom-of-motion of the mechanical snubber(s) is verified per Table TR 3.7.20-1.

BASES

ACTIONS

B.1 (continued)

The Completion Time of 6 months has been assigned based upon industry practice.

C.1

If Required Actions and associated Completion Times of Condition A or B are not met, the supported system or component is immediately declared inoperable.

TECHNICAL SURVEILLANCE REQUIREMENTS

Surveillance Testing is performed in accordance with the applicable requirements of ASME Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components" (Ref. 1).

Permanent or other exemptions from the surveillance program for individual snubbers may be granted by the Commission if a justifiable basis for exemption is presented and, if applicable, snubber life destructive testing was performed to qualify the snubber for the applicable design conditions at either the completion of their fabrication or at a subsequent date. Snubbers so exempted shall be listed in the list of individual snubbers indicating the extent of the exemptions.

In order to establish the inspection frequency for each type of snubber on a safety related system, it was assumed that the frequency of snubber failures and initiating events is constant with time and that the failure of any snubber could cause the system to be unprotected and to result in failure during an assumed initiating event. Inspections performed before that interval has elapsed may be used as a new reference point to determine the next inspection. However, the results of such early inspections performed before the original required time interval has elapsed (nominal time less 25%) may not be used to lengthen the required inspection interval. Any inspection whose results require a shorter inspection interval will override the previous schedule.

TSR 3.7.20.1

TSR 3.7.20.1 comprises a visual inspection of the snubbers. A pre-fuel load visual inspection and functional test has been performed on each snubber using the acceptance criteria listed in Table TR 3.7.20-2. The baseline takes into account that the snubbers have experienced thermal cycling and normal operating service as a result of previous hot functional testing. The initial inservice inspection has been performed on the

BASES

TECHNICAL SURVEILLANCE REQUIREMENTS

TSR 3.7.20.1 (continued)

snubbers prior to completion of the first refueling outage. The frequency of subsequent surveillances depends on the number of snubbers found inoperable from each previous inspection as provided in Table TR 3.7.20-3 and the Inservice Inspection Program as described in TR 5.5.6. The acceptance criteria and corrective actions are listed in Table TR 3.7.20-2.

The visual inspections are designed to detect obvious indications of inoperability of the snubbers. Removal of insulation or direct contact with the snubbers is not required initially. However, suspected causes of inoperability are to be investigated and all snubbers of the same type and all snubbers subjected to the same failure mode are to be inspected more frequently.

The visual inspection frequency is based upon maintaining a constant level of snubber protection during an earthquake or severe transient and the number of unacceptable snubbers found during the previous inspection. As a result, the required inspection intervals vary inversely with the number of inoperable snubbers found during an inspection. If a snubber fails the visual acceptance criteria, the snubber is declared unacceptable and cannot be declared OPERABLE via functional testing. However, if the cause of rejection is understood and remedied for that type of snubber and for any other type of snubbers that may be generically susceptible and OPERABILITY verified by testing, that snubber may be reclassified acceptable for the purpose of establishing the next surveillance interval.

Snubbers may be categorized according to accessibility as noted in the Notes to Table TR 3.7.20-3. The accessibility of each snubber is determined based on radiation level as well as other factors such as temperature, atmosphere, location, etc. The recommendations of Regulatory Guide 8.8, "Information Relevant to Maintaining Occupational Radiation Exposure as Low a Practicable," (Ref. 7) and Regulatory Guide 8.10, "Operation Philosophy for Maintaining Occupational Radiation Exposure as Low as Practicable," (Ref. 8) are considered in planning and implementing the visual inspection program.

Since the visual inspections are augmented by a functional testing program, the visual inspection need not be a hands on inspection, but shall require visual scrutiny sufficient to assure that fasteners or mountings for connecting the snubbers to supports or foundations have no visible bolts, pins or fasteners missing, or other visible signs of physical damage such as cracking or loosening.

BASES

TECHNICAL SURVEILLANCE REQUIREMENTS (continued)

TSR 3.7.20.2

This TSR is modified by a Note which restricts the performance of this TSR to during periods of plant shutdown.

TSR 3.7.20.2 comprises the functional testing of snubbers. The testing for these snubbers have been separated into two sample plans as described in Table TR 3.7.20-4. Sample Plan 1.a (10%) is typically used for the snubbers with small population. Sample plan 1.b. (Figure TR 3.7.20-1) is typically used for snubbers with large population. Figure TR 3.7.20-1 was developed using "Wald's Sequential Probability Ratio Plan" as described in "Quality Control and Industrial Statistics" by Acheson J. Duncan.

The sample plan shall be selected prior to the test period and cannot be changed during the test period.

Snubber functional testing is performed to the requirements of Table TR 3.7.20-4 and performed prior to the completion of each refueling outage. The 18 month Frequency, in conjunction with the Note, is based on the need to perform this surveillance under the conditions that apply during a unit outage.

TSR 3.7.20.3

This TSR addresses the monitoring of the service life of the snubbers in accordance with the Snubber Service Life Program described in TR 5.5.5. The requirement to monitor the snubber service life is included to ensure that the snubbers periodically undergo a performance evaluation in view of their age and operating conditions.

BASES

REFERENCES

1. ASME Boiler and Pressure Vessel Code, Section III and XI.

2. Regulatory Guide 1.124, "Design Limits and Loading Combinations for Class 1 Linear-Type Component Supports," Revision 1, January 1978.

3. Regulatory Guide 1.130, "Design Limits and Loading Combinations for Class 1 Plate-and Shell-Type Component Supports," Revision 1, October 1978.

4. "Zion Probabilistic Safety Study", Commonwealth Edison Company, September 1981.

5. "Millstone Unit 3 Probabilistic Safety Study," North-East Utilities Company, August 1983.

6. NRC Staff Review of Nuclear Steam Supply System Vendor Owners Groups' Application of the Commission's Interim Policy Statement Criteria to Standard Technical Specifications. Attachment to letter dated May 1988 from T. E. Murley, NRC to W. S. Wilgus, Chairman the B&W Owners Group.

7. Regulatory Guide 8.8, "Information Relevant to Maintaining Occupational Radiation Exposure as Low as Practicable."

8. Regulatory Guide 8.10, "Operating Philosophy for Maintaining Occupational Radiation Exposure as Low as Practicable."

9. WCAP-11618, "MERITS Program-Phase II, Task 5, Criteria Application," including Addendum 1 dated April, 1989, Section 3.7.9.