

June 2, 2006

Mr. Rick A. Muench  
President and Chief Executive Officer  
Wolf Creek Nuclear Operating Corporation  
Post Office Box 411  
Burlington, KS 66839

SUBJECT: WOLF CREEK GENERATING STATION - RELIEF REQUEST I3R-03 FOR THE  
THIRD 10-YEAR INTERVAL INSERVICE INSPECTION AND EXAMINATION OF  
SNUBBERS (TAC NO. MC8571)

Dear Mr. Muench:

By letter dated September 28, 2005 (ET 05-0014), as supplemented by letter dated April 13, 2006 (ET 06-0017), Wolf Creek Nuclear Operating Corporation (the licensee) proposed an alternative to the requirements of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code), Section XI, 1998 Edition up to and including the 2000 Addenda, with regard to visual examination and functional testing of snubbers for the Wolf Creek Generating Station (WCGS). This is Relief Request (RR) I3R-03. The licensee requested to use the snubber surveillance program requirements defined in Section 3.7.20 of the Technical Requirements Manual of the WCGS Updated Safety Analysis Report in lieu of the applicable ASME Code requirements specified in Section XI, Article IWF-5000 for the third 10-year inservice inspection (ISI) interval for WCGS.

Based on the enclosed safety evaluation, the alternative to the requirements in Section XI of the ASME Code in RR I3R-03 provides an acceptable level of quality and safety. Based on this, pursuant to 10 CFR 50.55a(a)(3)(i), the Commission authorizes the proposed alternative in RR I3R-03 for the third 10-year ISI interval at WCGS.

Sincerely,

David Terao, Chief  
Plant Licensing Branch IV  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-482

Enclosure: Safety Evaluation

cc w/encl: See next page

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**/RA/**

David Terao, Chief  
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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO THIRD 10-YEAR INTERVAL INSERVICE EXAMINATION PROGRAM FOR  
SNUBBERS RELIEF REQUEST I3R-03  
WOLF CREEK NUCLEAR OPERATING CORPORATION  
WOLF CREEK GENERATING STATION  
DOCKET NO. 50-482

## 1.0 INTRODUCTION

By letter dated September 28, 2005 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML052780343), the Wolf Creek Nuclear Operating Corporation (the licensee) submitted Relief Request (RR) I3R-03 for its third 10-year inservice inspection (ISI) program interval for snubbers at Wolf Creek Generating Station (WCGS). The licensee requested relief from certain ISI requirements of Section XI of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code) 1998 Edition through 2000 Addenda, Article IWF-5000. Article IWF-5000 references ASME/ANSI [American Nuclear Standard Institute] Operation and Maintenance (OM) Code, Part 4 (OM-4), 1987 Edition with OMa-1988.

In response to the Nuclear Regulatory Commission (NRC) staff's request for additional information (RAI), the licensee submitted its supplemental letter dated April 13, 2006 (ADAMS Accession No. ML061100452).

## 2.0 REGULATORY REQUIREMENT

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 paragraph 50.55a(g) of Title 10 of the *Code of Federal Regulations* (i.e., 10 CFR 50.55a(g)), except where specific written relief has been granted by the Commission, 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 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 licensee stated that the applicable edition of Section XI of the ASME Code for the WCGS third 10-year ISI interval is the 1998 Edition up to and including the 2000 Addenda, and the third 10-year ISI interval for WCGS commenced September 3, 2005.

### 3.0 TECHNICAL EVALUATION OF RR I3R-03

#### 3.1 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 WCGS:

1. Preservice and inservice examinations in accordance with paragraphs IWF-5200(a) and IWF-5300(a) for visual examination of snubbers.
2. Preservice and inservice tests in accordance with paragraphs IWF-5200(b) and IWF-5300(b) for snubbers.
3. Third-party Authorized Inspection Agency inspection activities for snubber examination and testing in accordance with IWA-2210.
4. Reporting of snubber examinations and testing in accordance with IWA-6200.

#### 3.2 Applicable ASME Code Requirements

The applicable ASME Code, Section XI requirements are the following:

1. ASME Code, Section XI, paragraphs IWF-5200(a) and IWF-5300(a) requires that snubber preservice and inservice examinations be performed in accordance with OM-4, using the VT-3 visual examination method described in IWA-2213.
2. Paragraphs IWF-5200(b) and IWF-5300(b) requires that snubber preservice and inservice tests be performed in accordance with OM-4.
3. ASME Code, Section XI, IWA-2210 specifies duties of the inspector related to examination and testing.
4. ASME Code, Section XI, paragraph IWA-6200 requires that the owner prepare records of examination, tests, replacements and repairs.

#### 3.3 Licensee's Proposed Alternative

In its application, the licensee proposed to use Technical Requirements Manual (TRM) Section 3.7.20, "Snubbers," and its associated bases, to perform visual examinations and functional testing of the ASME Code Class 1, 2 and 3 snubbers in lieu of meeting the applicable

ASME Code, Section XI requirements.

### 3.4 Licensee's Basis for Requesting Relief

As stated in its application, the licensee provided the following basis for its proposed alternative to the applicable ASME Code requirements:

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

For clarification, this [10 CFR] 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[s]ervice Inspection (ISI) Program Plan. Specifically, as part of the examinations required by the ISI Program Plan, WCGS will visually examine (VT-3) the ASME [Code,] Section III NF portion of [the] 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:

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

The intent and scope of the ASME/ANSI OM, Part 4, and the WCGS Snubber Program are essentially equal, although the [ASME] 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 [ASME] 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 [ASME] 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."

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 [in] 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 (ANIs) are not included in the [ASME] OM Code and are not explicitly defined in ASME [Code,] 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 ANIs in the previous two 10-year inspection intervals. ANI qualification in accordance with ASME [Code,] QAI-1 does not include knowledge of [ASME] 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 ANIs 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 [by the NRC] 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 [Code,] Section XI.

#### Duration of Proposed Alternative

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

#### Precedent[ ]

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)

### 3.5 NRC Staff Evaluation of RR I3R-03

In its application, the licensee requested authorization to use 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 (pin-to-pin) be performed in accordance with the requirements of WCGS TRM Section 3.7.20, and its associated bases, in lieu of meeting the requirements in the ASME Code, Section XI, paragraphs IWF-5200(a) and (b), and IWF-5300(a) and (b).

ASME Code, Section XI, paragraphs IWF-5200(a) and IWF-5300(a) requires 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)



requires that snubber preservice and inservice tests be performed in accordance with OM-4. OM-4 specifies the requirements for visual examination (paragraph 2.3), and functional testing (paragraph 3.2) of snubbers. The licensee proposes to use the WCGS TRM Section 3.7.20 surveillance requirements for visual inspection and functional testing of all safety-related snubbers (pin-to-pin). 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.

WCGS TRM Section 3.7.20 incorporates Generic Letter (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.

WCGS TRM Section 3.7.20 defines inservice examination requirements, 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 WCGS TRM Section 3.7.20 criteria are summarized and compared in the following table:

	<b>Criteria</b>	<b>ASME/ANSI OM Part 4 -1988</b>	<b>WCGS TRM 3.7.20 Requirements</b>
	<b>Inservice Examination</b>		
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.	WCGS TRM Table TR 3.7.20-2 requires that visual inspections shall verify that there are: (1) no visible indications of damage or impaired operability; (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>Criteria</b>	<b>ASME/ANSI OM Part 4 -1988</b>	<b>WCGS TRM 3.7.20 Requirements</b>
2.	Visual Examination Interval Frequency	Paragraph 2.3.2.2 provides examination interval frequency and additional examination requirements.	WCGS TRM Table TR 3.7.20-3 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.	In the response to the RAI, the licensee stated that WCGS TRM snubber inspections are performed by personnel who are certified to perform VT-3 per IWA-2300.
4.	Subsequent Examination Intervals	Paragraph 2.3.2 provides guidance for inservice examination intervals based on the number of unacceptable snubbers discovered.	WCGS TRM Table TR 3.7.20-3 provides a snubber visual inspection interval based on the number of unacceptable snubbers discovered. These requirements are similar to NRC GL 90-09.
5.	Failure Evaluation	Section 2.3.4 states that snubbers not meeting examination and acceptance criteria shall be evaluated to determine the cause of unacceptability.	In the response to the RAI, the licensee stated that WCGS TRM requirements for visual examination failures are comparable to OM-4, Section 2.3.4.
<b>Inservice Operability Test</b>			
1.	Inservice Operability Test Requirements	Paragraph 3.2.1.1, Operability Test, states those snubber operational readiness tests shall verify activation, release rate, and breakaway force or drag force by either an in-place or bench test.	Table TR 3.7.20-4, Section 1, states that snubbers shall be functionally tested either in place or in a bench test. Table TR 3.7.20-4, Section 4, requires a functional test to verify activation in tension and compression, and force required to initiate or maintain motion within the specified range in both directions of travel for mechanical snubbers.
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.	Table TR 3.7.20-4, Section 1(a), states that at least 10 percent of the total of each type of snubber shall be functionally tested either in place or in a bench test.

	Criteria	ASME/ANSI OM Part 4 -1988	WCGS TRM 3.7.20 Requirements
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.	Table TR 3.7.20-4, Section 1(a), requires an additional 5 percent of the type of snubber that failed functional testing, to be tested.
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.	Table TR 3.7.20-4, Section 5(c), states that, if a snubber being functionally tested either fails to lock up or fails to move (i.e., is frozen in place), the cause of failure will be evaluated. If the failure is caused by the manufacturer or design deficiency, all snubbers of the same type subject to the same defect shall be functionally tested.
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.	Table TR 3.7.20-4, Section 2, states that 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.
6.	Corrective Actions for 10 percent Sample Plan	Paragraph 3.2.5.1 states that unacceptable snubbers shall be repaired, modified, or replaced.	TR 3.7.20, Section A, requires that inoperable snubbers be repaired, modified, or replaced before operability can be restored.

### Inservice Examination Requirements

#### (1) Visual Examination

WCGS TRM Table TR 3.7.20-2 states that visual inspections shall verify that: (1) there are no visible indications of damage or impaired operability; (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. The visual examination per WCGS TRM Section 3.7.20 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, WCGS TRM Section 3.7.20 snubber visual examination requirements are equivalent to snubber visual examination requirements of OM-4, paragraph 2.3.1.1.

## (2) Visual Examination Interval Frequency

WCGS TRM Table TR 3.7.20-3 provides snubber visual inspection interval frequency requirements which are different than the OM-4 visual inspection interval requirements. Table TR 3.7.20-3 incorporates the visual inspection interval frequency as specified in GL 90-09 and 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 NRC staff finds that this 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. VT-3 includes examinations for conditions that could affect operability or functional adequacy of snubbers and constant load and spring type supports. Under the visual snubber examinations in the above basis of relief, the licensee stated that the WCGS TRM Snubber Program visual inspection requirements inspect for the following indications:

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

Therefore, the intent and scope of OM-4, VT-3 examination requirements are equivalent to the WCGS TRM Snubber Program visual inspection requirements. ASME Code, Section XI, paragraph IWA-2300 specifies the qualification of nondestructive examination personnel. In the response to the RAI, the licensee stated that WCGS TRM snubber inspections are performed

by personnel who are certified to perform VT-3 inspections per IWA-2300. Based on this, the NRC staff finds that the licensee's method of snubber visual inspection provides an acceptable level of quality and safety.

#### (4) Subsequent Examination Intervals

WCGS TRM Table TR 3.7.20-3 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 WCGS TRM Table TR 3.7.20-3 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. WCGS TRM Table 3.7.20-2, Section 2(b)(2), states that the affected snubber is functionally tested in the as-found condition and determined operable per the acceptance criteria of WCGS TRM Table 3.7.20-4, Section 3, which are equivalent to the requirements of OM-4, Section 3.2. Based on this, the NRC staff finds that the WCGS TRM's inservice examination failure evaluation requirements provide an acceptable level of quality and safety.

### Inservice Operability Test Requirements

#### (1) Operability Test

WCGS TRM Table TR 3.7.20-4, Section 1, states that snubbers are to be functionally tested either in-place or in a bench test. WCGS TRM Table TR 3.7.20-4, Section 4, states that a snubber functional test is to verify (a) activation in tension and compression and (b), for mechanical snubbers, the force required to initiate or maintain motion 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. In the response to the RAI, the licensee stated that WCGS Procedure MPM M218A-01, "Snubber Functional Test," establishes acceleration test acceptance criteria and drag force criteria, and implements the WCGS TRM requirements. The licensee also stated that OM-4, Section 3.2.1.1(c) is not applicable to WCGS because the snubber population does not contain hydraulic snubbers and, therefore, "release rate" is not applicable. Based on this, the NRC staff finds that the WCGS TRM requirements are equivalent to the snubber operability test requirements of OM-4 paragraph 3.2.1. Therefore, the NRC staff also finds that the WCGS TRM operability test requirements provide an acceptable level of quality and safety.

#### (2) Snubber Sample Size

WCGS TRM Table TR 3.7.20-4, Section 1(a) states that at least 10 percent of the total of each type of snubber must 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 the 10 percent sample criterion which is equivalent to the 10 percent sample testing requirement of OM-4. As a result, the number of snubbers tested during outages is equivalent to the OM-4 requirements. Therefore, the NRC staff finds that the WCGS TRM snubber sample size provides an acceptable level of quality and safety.

### (3) Additional Sampling

WCGS TRM Table TR 3.7.20-4, Section 1(a), requires an additional 5 percent of the type of snubber that failed functional testing be tested. 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 to say, 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. Based on this, the NRC staff finds that the WCGS TRM Table TR 3.7.20-4 requirements for additional sampling are equivalent to the OM-4 requirements, and, therefore, provide 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 are to be evaluated to determine the cause of the failure. The cause-of-failure evaluation requires a review of the information related to other unacceptable snubbers and a determination of whether other snubbers of similar design would require further examination. WCGS TRM Table TR 3.7.20-4, Section 5(a), states that an engineering evaluation must be made on each snubber that fails to meet the functional test acceptance criteria of WCGS TRM Table TR 3.7.20-4, Section 4, 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 that may be subject to the same failure mode. Based on this, the NRC staff finds that the WCGS TRM, Section 3.7.20, requirements related to inservice operability failure evaluation are equivalent to the OM-4 requirements and, therefore, provide 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. WCGS TRM Table TR 3.7.20-4, Section 2, states that the unacceptable snubbers may be categorized into failure mode groups. 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. During a phone call to clarify the requirements for failure mode groups, the licensee stated that the verb "may be" is intended to mean that the licensee may (1) categorize the unacceptable snubbers into failure mode groups and sample snubbers from each of the failure mode groups or (2) test all the unacceptable snubbers and, therefore, not categorize the unacceptable snubbers into failure mode groups. Based on this, the NRC staff finds that the WCGS TRM requirements

equivalent to the OM-4 requirements and, therefore, provide 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. WCGS TRM Table TR 3.7.20-4, Section 6, states that snubbers that have failed to meet either the visual or the functional test acceptance criteria as specified in WCGS TRM Table TR 3.7.20-2, Section 2(a), and Table TR 3.7.20-4, Section 4, shall be repaired or replaced. Based on this, the NRC staff finds that the WCGS TRM corrective actions associated with unacceptable snubbers at WCGS are equivalent to the OM-4 requirements and, therefore, provide an acceptable level of quality and safety.

Authorized Inspection Agency (AIA)

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 AIA to verify examination, tests, and repair/replacement activities. The licensee states that IWA-2110, "Duties of the Inspector" does not contain any requirements associated with the ANII associated with snubber examination and testing. The licensee proposed to perform snubber examination and testing in accordance with WCGS TRM Section 3.7.20 without involvement of an AIA or ANII, which is consistent with the previous two 10-year inspection intervals at WCGS. OM-4, Section 1.2, states that the Owner is responsible for qualifying the personnel performing the examination and test, and providing written procedures or instructions for complying with the requirements of OM-4. TS 5.4.1 requires the licensee to have written procedures for the plant activities including this type of examination and testing in accordance with WCGS TRM Section 3.7.20. Because the snubber examination and testing will use licensee-qualified personnel and written procedures, the NRC staff concludes that it is consistent with the OM-4 requirements and, therefore, the proposed alternative using licensee-qualified personnel provides an acceptable level of quality and safety.

Record of Snubber Examinations and Testing

ASME Code, Section XI, Article IWA-6000, "Record and Reports," requires Owners to prepare a Report for Inservice Inspection, Form NIS-1, for preservice and inservice inspection of Class 1 and 2 pressure retaining components and their supports. In response to the RAI, the licensee stated that IWF-5000 separates the inservice/preservice snubber examinations from those required for integral and nonintegral attachments for snubbers. Specifically, IWF-5200(a) and IWF-5300(a) require that snubber examinations be performed in accordance with OM-4, while IWF-5200(c) and IWF-5300(c) require that integral and nonintegral attachments for snubbers, including lugs, bolting, pin, and clamps shall be examined in accordance with the requirements of Subsection IWF. Therefore, the recordkeeping requirements for snubbers are controlled per OM-4 while integral and nonintegral attachments for snubbers are controlled per Section XI, IWA-6000. 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 WCGS Quality Assurance Program maintains records of snubber inspection and tests performed in accordance with the WCGS TRM and implementing procedures in lieu of the requirements of Section XI and OM-4, and these records

are available for review by the NRC to demonstrate the acceptability of snubbers at WCGS. Therefore, the NRC staff finds that the licensee's proposed method of preparing and maintaining records of snubber examinations and tests provides an acceptable level of quality and safety.

### 3.6 Conclusion

Based on the above evaluation, the NRC staff finds that the snubber visual examinations and functional testing, which are conducted at WCGS in accordance with WCGS TRM TR 3.7.20, provide (1) reasonable assurance of snubber operability and (2) 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). Therefore, the NRC staff also finds the licensee's proposed alternative in RR I3R-03 provides an acceptable level of quality and safety with respect to snubber visual inspection and functional testing.

### 4.0 CONCLUSION

Based on the information provided, the NRC staff concludes that the proposed alternative to use WCGS TRM, Section 3.7.20, 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 in RR I3R-03 is authorized for the WCGS third 10-year ISI interval. It should be noted that, in authorizing RR I3R-03, the portions of WCGS TRM Section 3.7.20 that describe the alternative snubber visual inspection and functional testing in RR I3R-03 become a regulatory requirement for performing ISI and testing of snubbers in place of the applicable ASME Code requirements given in Section 3.2 of this safety evaluation. Any future changes to these requirements shall be submitted to NRC for authorization pursuant to 10 CFR 50.55a(a)(3) or as an exemption pursuant to 10 CFR 50.12.

### 5.0 REFERENCES

- *U.S. Code of Federal Regulations*, "Domestic Licensing of Production and Utilization Facilities," Part 50, Chapter I, Title 10, "Energy," Section 50.55a, Codes and standards.
- Generic Letter (GL) 90-09, "Alternative Requirements for Snubber Visual Inspection Intervals and Corrective Actions," dated December 11, 1990.
- *American Society of Mechanical Engineers Boiler and Pressure Vessel Code*, Section XI, Rules for Inservice Inspection of Nuclear Power Plant Components.
- *American Society of Mechanical Engineers Operation and Maintenance Code*, Inservice Testing of Nuclear Power Plant Components.
- Letter from Terry J. Garrett, of Wolf Creek Nuclear Operating Corporation to the NRC, "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 Alternative Requirements for Snubber Inspection and Testing," dated September 28, 2005.



- Letter from Terry J. Garrett, of Wolf Creek Nuclear Operating Corporation to the NRC, "Docket 50-482: Wolf Creek Nuclear Operating Corporation's Response to Request for Additional Information Regarding 10 CFR 50.55a Request Number I3R-03 - Request for Relief to Allow Use of Alternative Requirements for Snubber Inspection and Testing," dated April 13, 2006.

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