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**Issue MNS-SLC-16.9.15, SNUBBERS**

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16.9 AUXILIARY SYSTEMS

16.9.15 Snubbers

COMMITMENT All snubbers shall be FUNCTIONAL.

-----NOTE-----  
Snubbers installed on non-safety systems may be excluded from these requirements provided their failure or the failure of the system on which they are installed would not have an adverse affect on any safety-related system.  
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APPLICABILITY At all times for snubbers located on systems required OPERABLE.

REMEDIAL ACTIONS

-----NOTE-----  
Conditions A, B, and C are applicable to "seismic snubbers" as defined in the BASES.  
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CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>A. -----NOTE----- If the opposite train of the associated system becomes inoperable for reasons not related to snubbers while in Condition A, exit Condition A and enter Condition C. -----</p> <p>One or more seismic snubbers associated with one train of a multiple train system non-functional for maintenance or testing and the opposite train of the associated system is operable.</p> <p><u>OR</u></p> <p>One or more seismic snubbers associated with a single train system non-functional for maintenance or testing.</p>	<p>A.1.1 Verify that at least one AFW train (including a minimum set of supporting equipment required for its successful operation) not associated with the non-functional snubber(s), or alternative core cooling method, is OPERABLE.</p> <p><u>AND</u></p>	<p>Immediately</p>
	<p>A.1.2 Verify the opposite train of the associated system is operable, if a multiple train system.</p> <p><u>AND</u></p>	<p>Immediately</p>
	<p>A.1.3 Log the affected system(s) for tracking in eSOMS.</p> <p><u>AND</u></p>	<p>Immediately</p>
	<p>A.1.4 Enter the applicable ACTIONS for the train or component associated with the non-functional snubber(s).</p>	<p>72 hours</p>
	<p><u>OR</u></p> <p>A.2 Declare the supported system inoperable.</p>	<p>Immediately</p>

(continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>B. One or more seismic snubbers associated with more than one train of a multiple train system non-functional for maintenance or testing.</p>	<p>B.1.1 Verify that at least one AFW train (including a minimum set of supporting equipment required for its successful operation) not associated with the non-functional snubber(s), or alternative core cooling method, is OPERABLE.</p> <p><u>AND</u></p>	<p>Immediately</p>
	<p>B.1.2 Enter the applicable ACTIONS for the train or component associated with the non-functional snubber.</p>	<p>12 hours</p>
	<p><u>OR</u></p> <p>B.2 Declare the supported system inoperable.</p>	<p>Immediately</p>

(continued)



CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>E. One or more snubbers with any significant non-seismic loads non-functional for maintenance or testing.</p>	<p>E.1 Enter the applicable ACTIONS for any affected system(s) and component(s) that are determined to be inoperable.</p> <p><u>OR</u></p> <p>E.2 Perform an engineering evaluation to determine the effect of the non-functional snubber on the operability of the associated system.</p>	<p>Immediately</p> <p>Prior to removing the snubber from service.</p>
<p>F. One or more snubbers non-functional due to actual failure of the snubber or failure to meet test acceptance criteria.</p>	<p>F.1 Perform an engineering evaluation to determine the effect of the non-functional snubber on the operability of the associated system.</p>	<p>72 hours</p>

TESTING REQUIREMENTS

NOTES

Snubber testing and inspection requirements shall be performed in accordance with the ASME OM Code, Subsections ISTA and ISTD in compliance with 10 CFR 50.55a. These requirements are implemented by administrative procedure AD-EG-MNS-1618 (Reference 14).

Administrative Procedure AD-EG-MNS-1618 "McGuire Nuclear Station Snubber Program Plan" is incorporated by reference into SLC 16.9.15 and is therefore subject to the control of 10 CFR 50.59.

TEST	FREQUENCY
<p>TR 16.9.15.1 Perform visual inspection for inaccessible and accessible snubbers in accordance with Administrative Procedure AD-EG-MNS-1618.</p>	<p>In accordance with Administrative Procedure AD-EG-MNS-1618.</p>
<p>TR 16.9.15.2 -----NOTE-----            In case of a severe dynamic event, mechanical snubbers in that system which experienced the event shall be inspected during the refueling outage to assure that the mechanical snubbers have freedom of movement and are not frozen up             Perform an inspection to determine if there has been a severe dynamic event for systems which have the potential for a severe dynamic event.</p>	<p>18 months, in accordance with Administrative Procedure AD-EG-MNS-1618.</p>
<p>TR 16.9.15.3 Perform functional testing for snubbers in accordance with Administrative Procedure AD-EG-MNS-1618.</p>	<p>18 months, in accordance with Administrative Procedure AD-EG-MNS-1618.</p>
<p>TR 16.9.15.4 -----NOTE-----            The parts replacement shall be documented and the documentation shall be retained for the duration of the unit operating license.             Verify that the service life of snubbers has not been exceeded or will not be exceeded prior to the next scheduled surveillance inspection.</p>	<p>18 months, in accordance with Administrative Procedure AD-EG-MNS-1618.</p>

## BASES

This commitment contains requirements for plant snubbers. There are snubbers installed for seismic loads only (i.e., those loads induced by seismic events, "earthquakes") and snubbers that are installed for the combined effects of both seismic loads and non-seismic loads (i.e., those dynamic loads induced by operational events such as steamhammer, waterhammer, LOCAs, and pipe rupture). Thus for the purpose of this commitment, there are two categories of snubbers:

- 1) snubbers which have only seismic loads, and snubbers which have both seismic and non-seismic loadings, but Engineering has determined that the non-seismic loads are insignificant and do not effect the operability of the associated system. Since the seismic loads are those of significance, these snubbers are termed "Seismic Snubbers" in this commitment; and
- 2) snubbers which have both seismic and non-seismic loadings and Engineering has determined that the non-seismic loads are significant and do effect the operability of the associated system.

The Remedial Actions for each of these snubber categories are discussed below. Remedial Action F.1 and the Testing Requirements of this commitment apply to both categories of snubbers. The programmatic requirements for the visual inspection and functional testing of snubbers do not meet the criteria in 10 CFR 50.36(c)(2)(ii) for inclusion in the plant TS, and as such, are appropriate for control by this commitment and are the same for both categories of snubbers.

The snubber requirements of SLC 16.9.15 were originally located in the Technical Specifications. The Nuclear Regulatory Commission (NRC) authorized the use of these requirements, while located in Technical Specifications, as an acceptable alternative to the requirements of the ASME Code, 1989 Edition, Section XI, Article IWF-5000 (References 3, 4). Subsequently, rulemaking per 10 CFR 50.55a was revised to require all snubber examination and testing to be performed in accordance with the ASME OM Code, Subsection ISTD. Therefore, the ASME OM Code, Subsection ISTD is invoked by rulemaking and the third interval relief requests (References 3, 4) are no longer valid.

All snubbers are required to be FUNCTIONAL to ensure that the structural integrity of the Reactor Coolant System and all other safety-related systems is maintained during and following a seismic or other event initiating dynamic loads. Snubbers excluded from this inspection program are those installed on nonsafety-related systems and then only if their failure or failure of the system on which they are installed, would have no adverse effect on any safety-related system.

Snubbers removed from service for any reason cannot be considered FUNCTIONAL since it is not connected to the supported system or component.



BASES (continued)

Seismic Snubbers

Seismic snubbers are installed primarily to address loads resulting from a seismic event. However, some seismic snubbers do have other non-seismic loads, but these other loads have been determined to have an insignificant effect on the operability of the associated system, as determined by Engineering. If used, TS LCO 3.0.8 contains the OPERABILITY requirements for seismic snubbers.

LCO 3.0.8 establishes conditions under which systems are considered to remain capable of performing their intended safety function(s) when associated seismic snubbers are not capable of providing their associated support function(s). This LCO states that the supported system is not considered to be inoperable solely due to one or more of these snubbers not being capable of performing their associated support function(s). Thus, any affected supported LCO(s) are not required to be declared not met solely for this reason, if risk is assessed and managed. This is appropriate because a limited length of time is allowed for inspection, testing, maintenance, or repair of one or more of these snubbers not capable of performing their associated support function(s), remedial actions are specified in this commitment, and the low probability of a seismic event concurrent with an event that would require operation of the supported system occurring while the snubber(s) are not capable of performing their associated support function(s), and as applicable, due to the availability of the redundant train of the supported system.

If the allowed time expires and the seismic snubber(s) are unable to perform their associated support function(s), the affected supported system's LCO(s) must be declared not met and the Conditions and Required Actions entered in accordance with LCO 3.0.2.

Snubbers with Both Seismic and Significant Non-Seismic Loads

If the affected snubber has more than one function, one of which MUST be seismic loads, then LCO 3.0.8 may be applied. However, there must be a deterministic analysis that demonstrates that the supported system can still perform its function for the non-seismic load(s). For example, if the affected snubber has support functions for both seismic loads and LOCA loads (i.e., blowdown loads), then only that LOCA load is considered deterministically to determine if the system is OPERABLE. If the supported TS system is OPERABLE for the non-seismic loads, then LCO 3.0.8 may be applied to the seismic loads. Otherwise, LCO 3.0.8 may not be applied and the FUNCTIONALITY requirements are contained in this commitment.

Remedial Actions - A

Remedial Action A applies when one or more seismic snubbers associated with one train of a multiple train system and the opposite train of the associated system is operable or associated with a single train system are non-functional for maintenance or testing, thus are not capable of providing their associated support function(s). This commitment allows up to 72 hours to restore the seismic snubber(s) before declaring the supported system inoperable, provided: 1) there is an immediate determination that at least one AFW train (including a minimum set of supporting equipment required for its successful operation) not associated with the non-functional snubber(s), or alternative core cooling method (e.g., feed and bleed, firewater system or "aggressive secondary cooldown" using the steam generators) is OPERABLE, 2) the opposite

BASES (continued)

train of the supported system is OPERABLE, if applicable, and 3) the affected system is logged for tracking in TSAIL. The 72- hour Completion Time is reasonable based on the low probability of a seismic event concurrent with an event that would require operation of the supported system occurring while the seismic snubber(s) are not capable of performing their associated support function, and due to the availability of the redundant train of the supported system (if applicable).

At the end of the specified 72-hour period the required seismic snubbers must be able to perform their associated support function(s), or the affected supported system LCO(s) shall be declared not met.

Condition A is modified by a Note which specifies that if the opposite train of the associated system becomes inoperable for reasons not related to snubbers while in Condition A, Condition A can be exited and Condition C is entered.

If the provisions of LCO 3.0.8 are not entered, the supported system shall be declared inoperable immediately.

Remedial Action - B

When one or more seismic snubber(s) are not capable of providing their associated support function(s) to more than one train of a multiple train supported system, this commitment allows 12 hours to restore the seismic snubber(s) before declaring the supported system(s) inoperable, provided there is an immediate determination that at least one AFW train (including a minimum set of supporting equipment required for its successful operation) not associated with the non-functional snubber(s), or alternative core cooling method (e.g., feed and bleed, firewater system or "aggressive secondary cooldown" using the steam generators) is OPERABLE. The 12-hour Completion Time is reasonable based on the low probability of a seismic event concurrent with an event that would require operation of the supported system occurring while the seismic snubber(s) are not capable of performing their associated support function.

At the end of the specified 12-hour period the required seismic snubbers must be able to perform their associated support function(s), or the affected supported system(s) LCO(s) shall be declared not met.

If the provisions of LCO 3.0.8 are not entered, the supported system shall be declared inoperable immediately.

Remedial Action - C

When one or more seismic snubbers are not capable of providing their associated support function(s) to one train of a multiple train supported system, and the opposite train of the supported system is inoperable for reasons not related to snubbers, this commitment allows up to 72 hours to restore the seismic snubber(s) before declaring the supported system inoperable provided: 1) there is an immediate determination that at least one AFW train (including a minimum set of supporting equipment required for its successful operation) not associated with the non-functional snubber(s), or alternative core cooling method (e.g., feed and bleed,

**BASES (continued)**

firewater system or "aggressive secondary cooldown" using the steam generators) is OPERABLE, and 2) there is an immediate assessment of risk associated with the resulting configuration and the risk assessment is acceptable. The 72-hour Completion Time from failure to meet the COMMITMENT (in case Condition C is entered after exiting Condition A) is reasonable based on the low probability of a seismic event concurrent with an event that would require operation of the supported system occurring while the seismic snubber(s) are not capable of performing their associated support function, and due to an acceptable conclusion of the risk assessment.

At the end of the specified 72-hour period the required seismic snubbers must be able to perform their associated support function(s), or the affected supported system LCO(s) shall be declared not met.

If the provisions of LCO 3.0.8 are not entered, the supported system shall be declared inoperable immediately.

**Risk Assessment and Management**

Remedial Action A, B, and C require that risk be assessed and managed. Industry and NRC guidance on the implementation of 10 CFR 50.65(a)(4) (the Maintenance Rule) does not address seismic risk. However, use of these commitments should be considered with respect to other plant maintenance activities, and integrated into the existing Maintenance Rule Process to the extent possible so that maintenance on any unaffected train or subsystem is properly controlled, and emergent issues are properly addressed. When using this commitment to remove seismic snubber(s) from a functional state, the risk assessment must ensure that at least one AFW train (including a minimum set of supporting equipment required for its successful operation) not associated with the non-functional snubber(s), or alternative core cooling method (e.g., feed and bleed, firewater system or "aggressive secondary cooldown" using the steam generators) is OPERABLE. This risk assessment is tracked by use of the TSAIL program. The risk assessment need not be quantified, but may be a qualitative awareness of the vulnerability of systems and components when one or more snubbers are not able to perform their associated support function. Actions that could be taken include protection of other trains or subsystems for example.

**Remedial Action - D**

If the Required Action and associated Completion Time of Condition A, B or C are not met, the applicable ACTIONS for the train(s) or components(s) associated with the non-functional seismic snubber shall be entered immediately.

**Remedial Action - E**

Should one or more snubbers which have any significant non-seismic loads be non-functional for the purposes of maintenance or testing, OPERABILITY of the affected system(s) and component(s) must be determined and the applicable ACTIONS entered immediately. If there remains a reasonable assurance of OPERABILITY of the affected system(s) or component(s) with the condition of a non-functional snubber(s), then it is not necessary to enter the respective ACTIONS for inoperable system(s) and component(s).

BASES (continued)

Remediate Action - F

Should one or more snubbers (of either category) fail to meet testing acceptance criteria or be discovered in a condition where failure is apparent, an engineering evaluation is to be performed within 72 hours, as described in "Functional Test Failure Analysis".

The snubber-testing program may remove snubbers from service and restore OPERABILITY of the snubber application by replacement with another like snubber. In this situation, if the removed snubber application by replacement with another like snubber. In this situation, if the removed snubber later fails to meet test acceptance criteria, Conditions A, B, C, and E are not applicable since the snubber component has no current required function; however, ACTION F.1 would be applicable. During the 72 hours allowed to perform an engineering evaluation, or at any other time when conditions of the affected system(s) and component(s) are determined to no longer support a reasonable assurance of OPERABILITY, applicable ACTIONS shall be entered immediately.

Snubber Testing/Inspection/Service Life Requirements

Snubber testing, inspection, and service life requirements using the ASME OM Code, Subsections ISTA and ISTD, are in compliance with 10 CFR 50.55a. These requirements are implemented by administrative procedure AD-EG-MNS-1618 (Reference 14), as described herein.

Visual Inspections

Visual Inspections are addressed in the MNS Snubber Program Plan provided in Administrative Procedure AD-EG-MNS-1618.

Refueling Outage Inspections

As stipulated in the McGuire Nuclear Station Snubber Program Plan, AD-EG-MNS-1618 (Reference 14), systems which have the potential for a severe dynamic event shall be inspected during each refueling outage to determine whether a severe dynamic event has occurred.

Functional Testing

Functional testing is addressed in the MNS Snubber Program Plan provided in Administrative Procedure AD-EG-MNS-1618.

Service Life Monitoring

Snubber Service Life Monitoring is addressed in the MNS Snubber Program Plan provided in Administrative Procedure AD-EG-MNS-1618.

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2. Letter from NRC to H.B. Barron, Licensing Position Regarding Snubbers, July 9, 1999.
3. Letter from H.B. Barron to NRC, Request for Relief 97-005, Snubber Inspections - Performance and Schedule, December 17, 1997.
4. Letter from NRC to H.B. Barron, Relief Request for Snubber Visual examination and Functional Testing, May 27, 1998.
5. Letter from H.B. Barron to NRC, Request for Relief 01-004, June 1, 2001.
6. Letter from NRC to M.S Tuckman, Safety Evaluation of Relief Request No. 01-004, Alternative for Snubber Examinations, January 30, 2002.
7. Letter from G.R. Peterson to NRC, Request for Relief 03-002, March 8, 2004.
8. Letter from G.R. Peterson to NRC, RAI Response, September 22, 2004.
9. Letter from NRC to G.R. Peterson, Safety Evaluation of Relief Request No. 03-002, November 22, 2004.
10. Technical Specification Task Force (TSTF) 372-A, Revision 4, Addition of LCO 3.0.8. Inoperability of Snubbers.
11. TSTF-IG-05-03, Rev 1, Technical Specifications Task Force Implementation Guidance for TSTF-372-A, Revision 4, Addition of LCO 3.0.8, Inoperability of Snubbers.
12. Nuclear System Directive 415, Operational Risk Management (Modes 1-3) per 10 CFR 50.65(a)(4).
13. Federal Register, 70FR23252, Notice of Availability of Model Application Concerning Technical Specification Improvement to Modify Requirements Regarding the Addition of Limiting Condition for Operation 3.0.8 on the Inoperability of Snubbers Using the Consolidated Line Item Improvement Process.
14. AD-EG-MNS-1618, McGuire Nuclear Station Snubber Program Plan