

ATTACHMENT 1

PROPOSED TECHNICAL SPECIFICATION CHANGES

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3.20 SHOCK SUPPRESSORS (SNUBBERS)

Applicability

Applies to all shock suppressors (snubbers) which are required to protect the reactor coolant system and safety related systems.

Objective

To define those limiting conditions for operation that are necessary to ensure that all snubbers required to protect the reactor coolant system, or any other safety related system or component, are operable during reactor operation.

Specification

- A. During all modes of operation except Cold Shutdown and Refueling, all safety-related snubbers shall be operable except as noted in Specification 3.20.B and 3.20.C below.
- B. If any safety-related snubber is found to be inoperable, it must be repaired and made operable, or otherwise replaced with one which is operable within 72 hours.
- C. If the requirements of Specification 3.20.B cannot be met, an orderly shutdown shall be initiated, and the reactor shall be in the hot shutdown condition within 36 hours.

- D. If a safety-related snubber is determined to be inoperable while the reactor is in the shutdown or refueling mode, the snubber shall be made operable or replaced prior to reactor startup.

Basis

Snubbers are designed to prevent unrestrained pipe motion under dynamic loads as might occur during an earthquake or severe transient while allowing normal thermal motion during startup and shutdown. The consequence of an inoperable safety-related snubber is an increase in the probability of structural damage to piping as a result of a seismic or other event initiating dynamic loads. It is therefore required that all safety-related snubbers required to protect the primary coolant system, or any other safety related system or component, be operable during reactor operation.

Because snubber protection is required only during low probability events, a period of 72 hours is allowed for repairs or replacement. In case a shutdown is required, the allowance of 36 hours to reach a hot shutdown condition will permit an orderly shutdown consistent with standard operating procedures. Since plant startup should not commence with knowingly defective safety related equipment, Specification 3.20.D prohibits startup with inoperable safety-related snubbers.

4.17 SHOCK SUPPRESSORS (SNUBBERS)

Applicability

Applies to all hydraulic and mechanical shock suppressors (snubbers) which are required to protect the reactor coolant system and safety-related systems.

Objective

To specify the minimum frequency and type of surveillance to be applied to the hydraulic and mechanical snubbers on safety-related systems.

Specification

Each safety-related snubber shall be demonstrated operable by performance of the following augmented in-service inspection program and the requirements of Specification 4.0.

A. Inspection Groups

1. The snubbers may be categorized into two major groups for visual inspections: those accessible and those inaccessible during power operation. These major groups may be further subdivided into subgroups for functional testing based on design, environment or other features which may be expected to affect the operability of the snubbers within the subgroup. Each group and subgroup may be inspected and tested independently in accordance with the visual inspection schedule in T.S. 4.17-B.1. and functional testing requirements in 4.17.D. respectively.

B. Visual Inspections

1. Visual inspections shall be performed independently for each group in accordance with the following schedule:

<u>No. Inoperable Snubbers Per Inspection Period</u>	<u>Subsequent Visual Inspection Period*</u>
0	18 months \pm 25%
1	12 months \pm 25%
2	6 months \pm 25%
3, 4	124 days \pm 25%
5, 6, 7	62 days \pm 25%
8 or more	31 days \pm 25%

2. Snubbers which have been made inoperable as the result of unexpected transients, isolated damage or other such random events, when the provisions of 4.17-D.9 have been met and any other appropriate corrective action implemented, shall not be counted in determining the next visual inspection period.

C. Visual Inspection Acceptance Criteria

1. Visual inspections shall verify:
- a. That there are no visible indications of damage or impaired operability,
 - b. Attachments to the foundation or supporting structure are secure, and
 - c. In those locations where snubber movement can be manually induced without disconnecting the snubber, that the snubber has freedom of movement and is not frozen up.

*The inspection interval shall not be lengthened more than one step at a time.

2. Snubbers which appear inoperable as a result of visual inspections may be determined operable for the purpose of establishing the next visual inspection interval, providing that the cause of the rejection is clearly established and remedied for that particular snubber and for other snubbers that may be generically susceptible, and the affected snubber is functionally tested, if applicable, in the as-found condition and determined operable per Specification 4.17.E or 4.17.F, as applicable.
3. When the fluid port of a hydraulic snubber is found to be uncovered, the snubber shall be determined inoperable and cannot be determined operable via functional testing for the purpose of establishing the next visual inspection interval. All snubbers connected to an inoperable common hydraulic fluid reservoir shall be counted as inoperable snubbers.

D. Functional Tests

1. At least once per 18 months during shutdown, a representative sample of 10% of the safety-related snubbers used in the plant shall be functionally tested either in place or in a bench test.
2. The representative sample selected for functional testing shall include the various configurations, operating environments, and the range of size and capacity of snubbers. This representative sample shall not, to the extent practicable, include those snubbers tested in a previous representative sample.
3. At least 25% of the snubbers in the representative sample shall include snubbers from the following three categories:
 - a. The first snubber away from each reactor vessel nozzle
 - b. Snubbers within 5 feet of heavy equipment (valve, pump, turbine, motor, etc.)

- c. Snubbers within 10 feet of the discharge from a safety relief valve
4. Snubbers identified as "Especially Difficult to Remove" or in "High Radiation Zone During Shutdown" shall also be included in the representative sample.*
5. In addition to the regular sample, snubbers which failed the previous functional test shall be retested during the next test period. If a spare snubber has been installed in place of a failed snubber, then both the failed snubber (if it is repaired and installed in another position) and the spare snubber shall be retested. Test results of these snubbers may not be included for the resampling.
6. For each snubber that does not meet the functional acceptance criteria of Specification 4.17-E or 4.17-F, an additional 10% of that subgroup of snubber shall be functionally tested or until all snubbers in that subgroup have been tested.
7. For snubbers of 50 kips and above that are extremely difficult to remove or in high radiation zones that fail the functional testing, an engineering evaluation is required to determine the failure mode. If the failure is determined to be non-generic, an additional 10% of that subgroup will be tested during the next functional test period.

*Permanent or other exemptions from functional testing for individual snubbers in these categories may be granted by the Commission only if a justifiable basis for exemption is presented and/or snubber life destructive testing was performed to qualify snubber operability for all design conditions at either the completion of their fabrication or at subsequent date.

8. If any snubber selected for functional testing either fails to lockup or fails to move, i.e., frozen in place, the cause will be evaluated and if caused by manufacturer or design deficiency all snubbers of the same design subject to the same defect shall be functionally tested. This testing requirement shall be independent of the requirements stated above for snubbers not meeting the functional test acceptance criteria.
9. For the snubber(s) found inoperable, an engineering evaluation shall be performed on the components which are supported by snubber(s). The purpose of this engineering evaluation shall be to determine if the components supported by the snubber(s) were adversely affected by the inoperability of the snubber(s) in order to ensure that the supported component remains capable of meeting the designed service.

E. Hydraulic Snubbers Functional Test Acceptance Criteria

1. The hydraulic snubber functional test shall verify that:
 - a. Activity (restraining action) is achieved within the specified range of velocity or acceleration in both tension and compression.
 - b. Snubber bleed, or release rate, where required, is within the specified range in compression and tension. For snubbers specifically required to not displace under continuous load, the ability of the snubber to withstand load without displacement shall be verified.

F. Mechanical Snubbers Functional Test Acceptance Criteria

1. The mechanical snubbers functional test shall verify that:
 - a. The force that initiates free movement of the snubber rod in either tension or compression is less than the specified maximum drag force. Drag force shall not have increased more than 50% since the last functional test.
 - b. Activity (restraining action) is achieved within the specified range of velocity in both tension and compression.
 - c. Snubber release rate, where required, is within the specified range in compression and tension. For snubbers specifically required not to displace under continuous load, the ability of the snubber to withstand load without displacement shall be verified.

G. Snubber Service Life Monitoring

1. A record of the service life of each snubber, the date at which the designated service life commences, and the installation and maintenance records on which the designated service life is based shall be maintained as required by Specification 6.5.B.9.
2. Concurrent with the first in-service visual inspection and at least once per 18 months thereafter, the installation and maintenance records for each snubber on safety-related systems shall be reviewed to verify that the indicated service life has not been exceeded or will not be exceeded prior to the next scheduled snubber service life review. If the indicated

service life will be exceeded prior to the next scheduled snubber service life review, the snubber service life shall be reevaluated or the snubber shall be replaced or reconditioned so as to extend its service life beyond the date of the next scheduled service life review. This reevaluation, replacement or reconditioning shall be indicated in the records.

Basis

All snubbers are required operable 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.

The visual inspection frequency is based upon maintaining a constant level of snubber protection to systems. Therefore, the required inspection interval varies inversely with the observed snubber failures and is determined by the number of inoperable snubbers found during an inspection. 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.

For visual inspection, snubbers are grouped according to accessibility during power operations. Those snubbers inside containment not in extremely high radiation areas that can be inspected without climbing or installing scaffolding and all those outside containment are considered accessible. The snubber groups are further subdivided into subgroups for functional testing. The first functional test sample will be, as far as practicable, a composite based on the ratio of each particular subgroup to the total number of snubbers installed in the plant.

When the cause of the rejection of a snubber is clearly established and remedied for that snubber and for any other snubbers that may be generically susceptible, and verified by in-service functional testing, that snubber may be exempted from being counted as inoperable. Generically susceptible snubbers are those which are of a specific make or model and have the same design features directly related to rejection of the snubber by visual inspection, or are similarly located or exposed to the same environmental conditions such as temperature, radiation, and vibration.

When a snubber is found inoperable, an engineering evaluation is performed, in addition to the determination of the snubber mode of failure, in order to determine if any safety-related component or system has been adversely affected by the inoperability of the snubber. The engineering evaluation shall determine whether or not the snubber mode of failure has imparted a significant effect or degradation on the supported component or system.

To provide assurance of snubber functional reliability, a representative sample of the installed snubbers will be functionally tested during plant shutdowns at 18-month intervals. Functional testing is to be in accordance with ASME Section XI 1980 ed. Subsection IWF. Observed failures of these sample snubbers shall require functional testing of additional units.

Hydraulic snubbers and mechanical snubbers may each be treated as a different entity for the above surveillance programs. Design, environment, duty cycle and location shall also factor into the determination of subgroupings.

TS Tables 4.17-1 and 4.17-2, Suppressor Data for Units 1 and 2, are being deleted. This encompasses pages 4.17-11 through 4.17-52.

9. Records of the service lives of all hydraulic and mechanical snubbers on safety-related systems, including the date at which the service life commences and associated installation and maintenance records.
10. Records of the annual audit of the Station Emergency Plan and implementing procedures.
11. Records of the annual audit of the Station Security Plan and implementing procedures.

ATTACHMENT 2

DISCUSSION OF PROPOSED SUPPLEMENTAL TECHNICAL SPECIFICATION CHANGES

SAFETY EVALUATION FOR SPS TECHNICAL SPECIFICATIONS CHANGE

The proposed change will add a statement to Technical Specification 3.20.A and B specifying which snubbers shall be operable and delete Tables 4.17-1 and 4.17-2. This Technical Specification change will remove the requirement to update the Technical Specifications when a snubber is added or deleted from the plant. This is in accordance with NRC Generic Letter 84-13, dated May 3, 1984, "Technical Specification For Snubbers." Generic Letter 84-13 recommends that Tables 4.17-1 and 4.17-2 be eliminated from the Technical Specifications. Generic Letter 84-13 also recommends that the Technical Specifications be modified to specify which snubbers are required to be operable. This revision includes a statement specifying "All snubbers shall be operable". A list of snubbers will be maintained current in plant administrative procedures and plant records will be maintained as required by Technical Specification 4.17.G.1. Technical Specification 4.17.G.1. requires "a record of the service life of each snubber, the date at which the designated service life commenced and the installation and maintenance records on which the designated service life is based shall be maintained". The addition or deletion of a snubber will be documented in the plant records. These two changes are in accordance with the recommendations of Generic Letter 84-13.

Recognizing that there are differences in design within the broad family of hydraulic snubbers and within the broad family of mechanical snubbers, this Technical Specification revision will permit the establishment of inspection groups based on design differences which may be expected to affect the operability of the snubbers within that group. IE Bulletin No. 81-01, "Surveillance of Mechanical Snubbers," also apparently recognizes these differences in that different inspection criteria and inspection schedules are

specified based on the manufacturer (i.e., design) of the mechanical snubbers covered by that bulletin. The proposed change adds a statement to allow groupings and subgrouping of snubbers and addresses independent inspection of each group or subgroup in Section 4.17.A.1. The basis for section 4.17 provides definition of accessible and inaccessible as well as discusses grouping and subgrouping.

The Technical Specification revision also permits the establishment of inspection groups based on the application, considering such factors as environment or duty cycle imposed on the snubbers. This approach meets the intent of the Standard Technical Specifications provisions for selecting 25% of the functional test representative sample from three specific categories relative to the application of the snubbers within the plant. Also, establishing snubber inspection groups based on design characteristic and upon application in the plant meets the intent of the Standard Technical Specification and incorporates the central provisions of the consensus standard, OM-4, "Examination and Performance Testing of Nuclear Power Plant Dynamic Restraints," being developed under the auspices of the American Society of Mechanical Engineer's Committee on Operations and Maintenance.

For visual inspections, the definitions of accessible and inaccessible have been modified. The accessible group will include the snubbers outside containment and those snubbers inside containment not in extremely high radiation areas that can be visually inspected without climbing or erecting scaffolding during power operations. The inaccessible group will include the remaining snubbers inside containment. These groups will be further divided into three subgroups (Large bore, Hydraulic and Mechanical) for functional testing.

The requirement to functionally test all snubbers in section 4.17-C.2, to verify their operability from a possible inoperable status has been modified to specify "if applicable." Loose attachment bolts or missing clevis pins should not, for this reason only, require the functional testing of the snubbers. Likewise, the successful completion of an as-found functional test, regardless of the apparent fluid level at the snubber, should be sufficient to establish the operability of the hydraulic snubber. Additionally, the proposed change, T.S. 4.17.B.2 states: "Snubbers which have been made inoperable as a result of unexpected transients, isolated damage, or other such events when the provision of 4.17-D.9 have been met and any other appropriate corrective action implemented, shall not be counted in determining the next visual inspection period."

The functional testing lot size remains at 10% of the total safety related snubbers. Any required resampling will be an additional 10% of that subgroup, for each snubber that does not meet the functional acceptance criteria, or until all snubbers in that subgroup are functionally tested. Within each subgroup (large bore, hydraulic, and mechanical) the snubbers have been categorized by design, size, environment, and location to ensure that for each unacceptable snubber the subsequent sample lot will include snubbers of like design, from the same piping system, and other systems with similar operating conditions. The sample composition within each inspection group which does not contain failed snubbers may be more heavily weighed for snubbers from severe duty locations, and the composition of sample lots resulting from failed snubbers will be based on an evaluation of the snubber failure mode.

The requirement to verify the attachment fasteners, both to the component and to the anchorage, is included for snubbers selected for functional testing. The discovery of missing or loose fasteners requires an evaluation and verification of additional fasteners, rather than additional functional tests

be performed. This detailed inspection of the fasteners in conjunction with the functional tests is intended to supplement the visual inspections.

50.59 Safety Review

Pursuant to 10CFR50.59, we have reviewed the proposed Technical Specification change and have concluded that no unreviewed safety question exists. In that, (i) the probability of occurrence or the consequence of an accident or malfunction is not increased by these changes; (ii) the possibility of a different type of accident other than discussed in the UFSAR has not been created by this proposed change; and (iii) the margin of safety as defined in the basis for any Technical Specification is not reduced, because the change is administrative. Establishing snubber inspection groups and subgroups based on design, environment and duty cycle permits a more concentrated inspection effort for those snubber groups where operability problems exist and does not effect snubber operability requirements.

50.92 Significant Hazards Review

The proposed change does not pose a significant hazards consideration as defined in 10CFR50.92. The Commission has provided examples of changes that constitute no significant hazards consideration in Federal Register, Volume 48, page 14870. Example (i) consists of a purely administrative change to Technical Specifications and (vii) a change to make a license conform to changes in the regulations where the license change results in very minor changes to facility operations clearly in keeping with the regulations. The proposed change is similar to example (i) in that, it deletes snubber tables and inspection requirement frequencies that have

been completed. The proposed change is similar to example (vii) in that, it permits establishing snubber inspection groups based on design, environment and duty cycle. This approach meets the intent of the Standard Technical Specification for snubber sampling and selecting 25% of the functional test sample from the three specific categories relative to the application of snubber within the plant.

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