

**ROUTING AND TRANSMITTAL SLIP**

Date 11/15/79

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**REMARKS**

Here is Enclosure 1 of the letter dated November 13, 1979 that was sent to you on November 14, 1979. RE: TECHNICAL SPECIFICATIONS REVISIONS FOR SNUBBER SURVEILLANCE.

Enclosure:  
Standard Technical Specifications Snubber Surveillance Requirements.

DO NOT use this form as a RECORD of approvals, concurrences, disposals, clearances, and similar actions

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## PLANT SYSTEMS

### 3/4.7.9 SNUBBERS

#### LIMITING CONDITION FOR OPERATION

3.7.9.1 All snubbers listed in Tables 3.7-9a and 3.7-9b shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3 and 4.

#### ACTION:

With one or more snubbers inoperable, replace or restore the inoperable snubber(s) to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

Inoperable snubbers shall be repaired and functionally tested and determined OPERABLE per Specifications 4.7.9.1.d and 4.7.9.1.e (as applicable) prior to being returned to service. An engineering evaluation shall be performed on components with inoperable snubbers to determine the effect of the inoperable snubbers on the supported component, to ensure that the supported component remains acceptable for continued service prior to proceeding to MODE 4.

#### SURVEILLANCE REQUIREMENTS

4.7.9.1. Each snubber shall be demonstrated OPERABLE by performance of the following augmented inservice inspection program and the requirements of Specification 4.0.5.

a. Visual Inspections

The first inservice visual inspection of snubbers shall be during the first COLD SHUTDOWN exceeding 24 hours after two Effective Full Power Months of operation and shall include all snubbers listed in Tables 3.7-9a and 3.7-9b. Subsequent visual inspections shall be performed in accordance with the following schedule provided that (1) the end of the next period does not exceed the service life of the snubber, and (2) it is assumed that the unit was at the 6-month inspection period when the first inservice visual inspection was performed. For these subsequent inservice visual inspections, the snubbers may be categorized into two groups: those accessible and those inaccessible during reactor operation; each group may be inspected independently in accordance with the following schedule.

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

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

# The provisions of Specification 4.0.2 are not applicable.

b. Visual Inspection Acceptance Criteria

Visual inspections shall verify (1) that there are no visible indications of damage or impaired OPERABILITY, and (2) that attachments to the foundation or supporting structure are secure, and (3) that the snubber has freedom of movement and is not frozen up. Snubbers which appear inoperable as a result of these visual inspections may be determined OPERABLE, and therefore be excluded from being counted as inoperable for the purpose of establishing the next visual inspection interval, providing that (1) the cause of the rejection is clearly established and remedied for that particular snubber and for any other snubbers that may be generically susceptible; and (2) the affected snubber is functionally tested in the as found condition and determined OPERABLE per Specifications 4.7.9.1.d and 4.7.9.1.e (as applicable). All snubbers connected to an inoperable common hydraulic fluid reservoir shall be counted as inoperable snubbers.

c. Functional Tests

At least once per 18 months during shutdown, a representative sample of either (1) 10% of the total number of snubbers in the plant with a corresponding number of c=0 or (2) that number of snubbers which follows the expressions  $35 \left(1 + \frac{c}{2}\right)$ , where C is the allowable number of snubbers not meeting the acceptance criteria selected by the operator, shall be selected and functionally tested either

in place or in a bench test. For each number of snubber above C which does not meet the functional test acceptance criteria of Specifications 4.7.9.1.d or e., an additional representative sample of either the original sample size if the original sample was selected according to (1) above, or that a sample selected according to the expression  $35(1 + \frac{C}{2})(\frac{2}{C+1})^2$  if the original sample was selected according to (2) above, shall be selected and functionally tested. For every snubber not meeting the functional test acceptance criteria of Specification 4.7.9.1.d or e. in the second sample, a third sample selected according to the same above mentioned re-sampling plan shall be functionally tested. Functional testing shall continue until no additional inoperable snubbers are found within a sample or until all snubbers listed in Table 3.7-9a and 3.7-9b. have been functionally tested. The representative sample selected for functional testing shall include the various configurations, operating environments and the range of size and capacity of snubbers. Tables 3.7-9a and 3.7-9b can be used jointly or separately as the basis for the sampling plan. Snubbers identified in Tables 3.7-9a and 3.7-9b as "Especially Difficult to Remove" or in "High Radiation Zones During Shutdown" may be exempted from functional testing as noted in these tables. In addition to the regular sample, snubbers which failed the previous functional test shall be retested during the next test period. Test results of these snubbers may not be included for the re-sampling.

If any snubber selected for functional testing either fails to lockup or fails to move (i.e. frozen in place), all snubbers of the same

model shall be functionally tested. This testing requirement shall be independent of the requirements stated above for snubbers not meeting the functional test acceptance criteria.

d. Hydraulic Snubbers Functional Test Acceptance Criteria

The hydraulic snubber functional test shall verify that:

Activation (restraining action) is achieved within the specified range of velocity or acceleration in both tension and compression.

Snubber bleed, or release rate, where required, is within the specified range in compression or tension. For snubber specifically required to not displace under continuous load, the ability of the snubber to withstand load without displacement shall be verified.

e. Mechanical Snubbers Functional Test Acceptance Criteria

The mechanical snubber functional test shall verify that:

The force that initiates free movement of the snubber rod in either tension or compression is less than the

specified maximum drag force. The differential of this force shall not exceed 50% between two consecutive tests.

Activation (restraining action) is achieved within the specified range of velocity or acceleration in both tension and compression.

Snubber release rate, where required, is within the specified range in compression or tension. For snubbers specifically required to not displace under continuous load, the ability of the snubber to withstand load without displacement shall be verified.

TABLE 3.7-9a

SAFETY RELATED MECHANICAL SNUBBERS\*

<u>SNUBBER NO.</u>	<u>SYSTEM SNUBBER INSTALLED ON, LOCATION AND ELEVATION</u>	<u>ACCESSIBLE OR INACCESSIBLE (A or I)</u>	<u>HIGH RADIATION ZONE DURING SHUTDOWN** (Yes or No)</u>	<u>ESPECIALLY DIFFICULT TO REMOVE (Yes or No)</u>	<u>SERVICE LIFE#</u>
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\* Snubbers may be added to safety related systems without prior License Amendment to Table 3.7-9 provided that a revision to Table 3.7-9 is included with the next License Amendment request.

\*\* Modifications to this column due to changes in high radiation areas may be made without prior License Amendment provided that a revision to Table 3.7-9 is included with the next License Amendment request.

# SERVICE LIFE is the designated functional period of the manufacturer. It is determined by cycling load testing and aging tests on the snubber prototype, including parts such as springs under low amplitude vibration.



TABLE 3.7-9b

SAFETY RELATED HYDRAULIC SNUBBERS\*

<u>SNUBBER NO.</u>	<u>SYSTEM SNUBBER INSTALLED ON, LOCATION AND ELEVATION</u>	<u>ACCESSIBLE OR INACCESSIBLE (A or I)</u>	<u>HIGH RADIATION ZONE DURING SHUTDOWN**</u> (Yes or No)	<u>ESPECIALLY DIFFICULT TO REMOVE</u> (Yes or No)	<u>SERVICE LIFE#</u>
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\* Snubbers may be added to safety related systems without prior License Amendment to Table 3.7-9 provided that a revision to Table 3.7-9 is included with the next License Amendment request.

\*\* Modifications to this column due to changes in high radiation areas may be made without prior License Amendment provided that a revision to Table 3.7-9 is included with the next License Amendment request.

# SERVICE LIFE is the designated functional period of the snubber by the manufacturer. It is determined by cyclic load testing of the snubber prototype, aging and environmental testing of the critical metallic or non-metallic elements, including seals.

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## PLANT SYSTEMS

### BASES

#### 3/4.7.9 SNUBBERS

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. The only 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 inspection frequency applicable to snubbers is based upon maintaining a constant level of snubber protection to systems. Therefore, the required inspection interval varies inversely with the observed snubber failures. The number of inoperable snubbers found during an inspection of these snubbers determines the time interval for the next required inspection of these snubbers. 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.

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 inservice functional testing, that snubber may be exempted from being counted as inoperable. Generically susceptible snubbers are those snubbers 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.

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. Selection of a representative sample according to the expression  $3S (1 + \frac{C}{2})$  provides a confidence level of approximately 95% that 90% to 100% of the snubbers in the plant will be operable within the acceptance limits. Observed failures of these sample snubbers will require functional testing of additional snubbers. To minimize personnel exposures, snubbers installed in high radiation zones or in especially difficult to remove locations may be exempted from these functional testing requirements provided the OPERABILITY of these snubbers was demonstrated during functional testing at either the completion of their fabrication or at a subsequent date.

Hydraulic snubbers and mechanical snubbers may each be treated as a different entity for the above inservice surveillance programs.