PLANT SYSTEMS

3/4.7.9 SNUBBERS

LIMITING CONDITION FOR OPERATION

3.7.9 All snubbers shall be OPERABLE.

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

ACTION:

With one or more snubbers inoperable, within 72 hours, replace or restore the inoperable snubber(s) to OPERABLE status and perform an engineering evaluation per Specification 4.7.9c on the supported component or declare the supported system inoperable and follow appropriate ACTION statement for that system.

SURVEILLANCE REQUIREMENTS

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

Replace with Insert 1

a. Visual Inspection

An inservice visual inspection of all snubbers shall be performed in accordance with the following schedule for each type. As used in this specification, type of snubber shall mean snubber of the same design and manufacturer, irrespective of capacity.

No. Inoperable Snubbers of Each Type per Inspection Period	Subsequent Inspection Period*#
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%

Snubbers are categorized as accessible and inaccessible during reactor operation. Each group (accessible and inaccessible) may be inspected independently in accordance with the above schedule.

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

The provisions of Specification 4.0.2 are not applicable.

TABLE 4.7-3

SNUBBER VISUAL INSPECTION INTERVAL

Population[1,2] /Category	Number of Unacceptable Snubbers		
	Column A[3] Extend Interval	Column B[4] Repeat Interval	Column C[5] Reduce Interval
1	0	0	1
80	0	0	2
100	0	1	4
150	0	3	8

Notes:

1. The next visual inspection interval for the population of a snubber category shall be determined based upon the most recent inspection interval and the number of unacceptable snubbers found during that interval. Snubbers may be categorized, based upon their accessibility during power operation, as accessible or inaccessible. These categories may be examined separately or jointly. This decision shall be made and documented before any inspection and used as the basis upon which to determine the next inspection interval for that category.

2. Interpolation between population or category sizes and the number of unacceptable snubbers is permissible. Where the limit for unacceptable snubbers in Columns A, B, or C is determined by interpolation and includes a fractional value, the limit may be reduced to the next lower integer.

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

4. If the number of unacceptable snubbers is equal to or less than the number in Column B but greater than the number in Column A, the next inspection interval shall be the same as the current interval.

5. If the number of unacceptable snubbers is equal to or greater than the number in Column C, the next inspection interval shall be two-thirds of the current interval. However, if the number of unacceptable snubbers is less than the number in Column C but greater than the number in Column B, the next interval shall be reduced proportionally by interpolation, that is:

$$I_1 = I_o - I_o * {}^1/_3 * \frac{U - B}{C - B}$$

where:
- I_1 = next inspection interval
- I_o = previous inspection interval
- U = number of unacceptable snubbers found during the previous inspection interval
- B = number in Column B
- C = number in Column C

6. The provisions of Specification 4.0.2 are applicable for all inspection intervals up to and including 48 months.

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. 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 were installed, would have no adverse effect on any safety related system.

A list of individual snubbers required to be operable per the technical specifications with detailed information of snubber location and size and of system affected shall be available at the plant in accordance with Section 50.71(c) of 10 CFR Part 50. The accessibility of each snubber shall be determined and approved by the Station Operations Review Committee. The determination shall be based on the existing radiation levels and the expected time to perform a visual inspection in each snubber location as well as other factors associated with accessibility during plant operations (e.g., temperature, atmosphere, location, etc.) and the recommendations of Regulatory Guide 8.8 and 8.10. The addition or deletion of any snubber shall be made in accordance with Section 50.59 of 10 CFR Part 50.

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.

Replace with Insert 2

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 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.

Relocate to page B 3/4 7-7

SNUBBERS (Continued)

Insert Relocated text from page B 3/4 7-6

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. Observed failures of these sample snubbers shall require functional testing of additional units.

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

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

The service life of a snubber is evaluated via manufacturer input and information through consideration of the snubber service conditions and associated installation and maintenance records (newly installed snubber, seal replaced, spring replaced, in high radiation area, in high temperature area, etc...). The requirement to monitor the snubber service life is included to ensure that the snubbers periodically undergo a performance evaluation in view of their age and operating conditions. These records will provide statistical bases for future consideration of snubber service life. The requirements for the maintenance of records and the snubber service life review are not intended to affect plant operation.

PLANT SYSTEMS

3/4.7.9 SNUBBERS

LIMITING CONDITION FOR OPERATION

3.7.9 All snubbers shall be OPERABLE.

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

ACTION:

With one or more snubbers inoperable, within 72 hours, replace or restore the inoperable snubber(s) to OPERABLE status and perform an engineering evaluation per Specification 4.7.9c on the supported component or declare the supported system inoperable and follow appropriate ACTION statement for that system.

SURVEILLANCE REQUIREMENTS

4.7.9 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 Inspection

Replace with Insert 1

An inservice visual inspection of all snubbers shall be performed in accordance with the following schedule for each type. As used in this specification, type of snubber shall mean snubber of the same design and manufacturer, irrespective of capacity.

No. Inoperable Snubbers of Each Type per Inspection Period	Subsequent Inspection Period*#
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%

Snubbers are categorized as accessible and inaccessible during reactor operation. Each group (accessible and inaccessible) may be inspected independently in accordance with the above schedule.

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

The provisions of Specification 4.0.2 are not applicable.

NEW PAGE 3/4 7-27

TABLE 4.7-3

SNUBBER VISUAL INSPECTION INTERVAL

Population[1,2] /Category	Number of Unacceptable Snubbers		
	Column A[3] Extend Interval	Column B[4] Repeat Interval	Column C[5] Reduce Interval
1	0	0	1
80	0	0	2
100	0	1	4
150	0	3	8

Notes:

1. The next visual inspection interval for the population of a snubber category shall be determined based upon the most recent inspection interval and the number of unacceptable snubbers found during that interval. Snubbers may be categorized, based upon their accessibility during power operation, as accessible or inaccessible. These categories may be examined separately or jointly. This decision shall be made and documented before any inspection and used as the basis upon which to determine the next inspection interval for that category.

2. Interpolation between population or category sizes and the number of unacceptable snubbers is permissible. Where the limit for unacceptable snubbers in Columns A, B, or C is determined by interpolation and includes a fractional value, the limit may be reduced to the next lower integer.

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

4. If the number of unacceptable snubbers is equal to or less than the number in Column B but greater than the number in Column A, the next inspection interval shall be the same as the current interval.

5. If the number of unacceptable snubbers is equal to or greater than the number in Column C, the next inspection interval shall be two-thirds of the current interval. However, if the number of unacceptable snubbers is less than the number in Column C but greater than the number in Column B, the next interval shall be reduced proportionally by interpolation, that is:

$$I_1 = I_o - I_o * {}^1/_3 * \frac{U - B}{C - B}$$

where: I_1 = next inspection interval

I_o = previous inspection interval

U = number of unacceptable snubbers found during the previous inspection interval

B = number in Column B

C = number in Column C

6. The provisions of Specification 4.0.2 are applicable for all inspection intervals up to and including 48 months.

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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. 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 were installed, would have no adverse effect on any safety-related system.

A list of individual snubbers required to be operable per the technical specifications with detailed information of snubber location and size and of system affected shall be available at the plant in accordance with Section 50.71(c) of 10 CFR Part 50. The accessibility of each snubber shall be determined and approved by the Station Operations Review Committee. The determination shall be based on the existing radiation levels and the expected time to perform a visual inspection in each snubber location as well as other factors associated with accessibility during plant operations (e.g., temperature, atmosphere, location, etc.) and the recommendations of Regulatory Guide 8.8 and 8.10. The addition or deletion of any snubber shall be made in accordance with Section 50.59 of 10 CFR Part 50.

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.

Replace with Insert 2

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 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.

Relocate to page B 3/4 7-7

SNUBBERS (Continued)

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. Observed failures of these sample snubbers shall require functional testing of additional units.

Insert Relocated text from page B 3/4 7-6

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

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

The service life of a snubber is evaluated via manufacturer input and information through consideration of the snubber service conditions and associated installation and maintenance records (newly installed snubber, seal replaced, spring replaced, in high radiation area, in high temperature area, etc...). The requirement to monitor the snubber service life is included to ensure that the snubbers periodically undergo a performance evaluation in view of their age and operating conditions. These records will provide statistical bases for future consideration of snubber service life. The requirements for the maintenance of records and the snubber service life review are not intended to affect plant operation.

INSERT 1

All snubbers shall be categorized into two groups: those accessible and those inaccessible during reactor operation. The visual inspection interval for each category of snubbers shall be determined based upon the criteria provided in Table 4.7-3.

INSERT 2

The inspections are performed for each category of snubbers. The snubbers are categorized by accessibility (i.e., accessible or inaccessible during reactor operation). The next visual inspection for each category may be twice, the same, or reduced by as much as two-thirds of the previous inspection interval. This interval depends on the number of unacceptable snubbers found in proportion to the total number of snubbers in each category from the most recent inspection. Intervals may be increased up to 48 months if few unacceptable snubbers are found in these inspections. The visual inspection interval will not exceed 48 months. However, as for all surveillance activities, unless otherwise noted, allowable tolerances of 25% are applicable for snubbers. Table 4.7-3 establishes three limits for determining the next visual inspection interval corresponding to the population of each category of snubbers. For a category that differs from the representative sizes provided, the values for the next inspection interval may be found by interpolation from the limits provided in Columns A, B, and C. Where the limit for unacceptable snubbers in Columns A, B, or C is determined by interpolation and includes a fractional value, the limit may be reduced to the next lower integer. The first inspection interval determined using Table 4.7-3 shall be based upon the previous inspection interval as established by the requirements in effect before amendment ( ).