

# CONTROLLED COPY

## PLANT SYSTEMS

### 3/4.7.4 SNUBBERS

#### LIMITING CONDITION FOR OPERATION

3.7.4 All hydraulic and mechanical snubbers shall be OPERABLE.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, and 3. OPERATIONAL CONDITIONS 4 and 5 for snubbers located on systems required OPERABLE in those OPERATIONAL CONDITIONS#.

#### ACTION:

With one or more required snubbers inoperable on any system, within 72 hours replace or restore the inoperable snubber(s) to OPERABLE status and perform an engineering evaluation per Specification 4.7.4g on the attached component or declare the attached system inoperable and follow the appropriate ACTION statement for that system.

#### SURVEILLANCE REQUIREMENTS

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

##### a. Inspection Types

As used in this specification, type of snubber shall mean snubbers of the same design and manufacturer, irrespective of capacity.

##### b. Visual Inspections

*categories*

Snubbers are categorized as inaccessible or accessible during reactor operation. Each of these groups (inaccessible and accessible) may be inspected independently according to the schedule below. ~~The first inservice visual inspection of each type of snubber shall be performed after 4 months but within 10 months of commencing POWER OPERATION and shall include all hydraulic and mechanical snubbers. If all snubbers of each type on any system are found OPERABLE during the first inservice visual inspection, the second inservice visual inspection of that system shall be performed at the first refueling outage. Otherwise, subsequent visual inspections of a given system shall be performed in accordance with the following schedule.~~

[INSERT A]

#Unless the removal of snubber(s) for maintenance or testing is justified by engineering analysis.

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SURVEILLANCE REQUIREMENTS (Continued)

Replaced by  
Table 4.7-1

| <del>No. Inoperable Snubbers<br/>of Each Type on Any System<br/>per Inspection Period</del> | <del>Subsequent Visual<br/>Inspection Period* #</del> |
|---|---|
| <del>0</del>  | <del>18 months, +25%, -50%</del>                      |
| <del>1</del>  | <del>12 months <math>\pm</math> 25%</del>             |
| <del>2</del>  | <del>6 months <math>\pm</math> 25%</del>              |
| <del>3, 4</del>   | <del>124 days <math>\pm</math> 25%</del>              |
| <del>5, 6, 7</del>  | <del>62 days <math>\pm</math> 25%</del>               |
| <del>8 or more</del>  | <del>31 days <math>\pm</math> 25%</del>               |

c. Visual Inspection Acceptance Criteria

the snubber has

functional  
functional

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 secure, and (3) fasteners for attachment of the snubber to the component and to the snubber anchorage are secure. Snubbers which appear inoperable as a result of visual inspections may be determined OPERABLE for the purpose of establishing the next visual inspection interval, provided that: (1) the cause of the rejection is clearly established and remedied for that particular snubber and for other snubbers irrespective of type on that system that may be generically susceptible; and (2) the affected snubber is functionally tested in the as-found condition and determined OPERABLE per Specification 4.7.4f. All snubbers connected to an inoperable common hydraulic fluid reservoir shall be counted as inoperable snubbers. For those snubbers common to more than one system, the OPERABILITY of such snubbers shall be considered in assessing the surveillance schedule for each of the related systems.

[insert B]

found

[insert C]

d. Transient Event Inspection

An inspection shall be performed of all hydraulic and mechanical snubbers attached to sections of systems that have experienced unexpected, potentially damaging transients as determined from a review of operational data and a visual inspection of the systems within 6 months following such an event. In addition to satisfying the visual inspection acceptance criteria, freedom-of-motion of mechanical snubbers shall be verified using at least one of the following: (1) manually induced snubber movement; or (2) evaluation of in-place snubber piston setting; or (3) stroking the mechanical snubber through its full range of travel.

\*The inspection interval for each type of snubber on a given system shall not be lengthened more than one step at a time unless a generic problem has been identified and corrected; in that event the inspection interval may be lengthened one step the first time and two steps thereafter if no inoperable snubbers of that type are found on that system.

#The provisions of Specification 4.0.2 are not applicable.



Insert A (page 3/4 7-10)

determined by Table 4.7-1. The visual inspection interval for each type of snubber shall be determined based upon the criteria provided in Table 4.7-1 and the first inspection interval determined using these criteria shall be based upon the previous inspection interval as established by the requirements in effect before amendment (\*).

Insert B (page 3/4 7-11)

shall be classified as unacceptable and may be reclassified acceptable

Insert C (page 3/4 7-11)

unacceptable for determining the next inspection interval. A review and evaluation shall be performed and documented to justify continued operation with an unacceptable snubber. If continued operation cannot be justified, the snubber shall be declared inoperable and the ACTION requirements shall be met.

\*NRC will include the number of the license amendment that implements this change.

TABLE 4.7-1  
SNUBBER VISUAL INSPECTION INTERVAL

| Population<br>or Category<br>(Notes 1 and 2) | NUMBER OF UNACCEPTABLE SNUBBERS                  |  |  |
|--|--|--|--|
|  | Column A<br>Extended Interval<br>(Notes 3 and 6) | Column B<br>Repeat Interval<br>(Notes 4 and 6) | Column C<br>Reduce Interval<br>(Notes 5 and 6) |
| 1  | 0  | 0  | 1  |
| 80   | 0  | 0  | 2  |
| 100  | 0  | 1  | 4  |
| 150  | 0  | 3  | 8  |
| 200  | 2  | 5  | 13   |
| 300  | 5  | 12   | 25   |
| 400  | 8  | 18   | 36   |
| 500  | 12   | 24   | 48   |
| 750  | 20   | 40   | 78   |
| 1000 or greater                              | 29   | 56   | 109  |

Note 1: The next visual inspection interval for a snubber population or category size shall be determined based upon the previous 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. However, the licensee must make and document that decision before any inspection and shall use that decision as the basis upon which to determine the next inspection interval for that category.

Note 2: Interpolation between population or category sizes and the number of unacceptable snubbers is permissible. Use next lower integer for the value of the limit for Columns A, B or C if that integer includes a fractional value of unacceptable snubbers as determined by interpolation.

Note 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.

Note 4: If the number of unacceptable snubber 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 previous interval.

Note 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 previous 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, the previous interval shall be reduced by a factor that is one-third of the ratio of the difference between the number of unacceptable snubbers found during the previous interval and the number in column B to the difference in the numbers in Columns B and C.

Note 6:

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

BASES3/4.7.3 REACTOR CORE ISOLATION COOLING SYSTEM (Continued)

With the RCIC system inoperable, adequate core cooling is assured by the OPERABILITY of the HPCS system and justifies the specified 14 day out-of-service period.

The surveillance requirements provide adequate assurance that RCIC will be OPERABLE when required. Although all active components are testable and full flow can be demonstrated by recirculation during reactor operation, a complete functional test requires reactor shutdown. The pump discharge piping is maintained full to prevent water hammer damage and to start cooling at the earliest possible moment.

3/4.7.4 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 are installed would have no adverse effect on any safety-related system. During shutdown, snubbers which are redundant per engineering analysis can be removed for maintenance and/or testing and are excluded from the operability requirements.

Snubbers are classified and grouped by design and manufacturer but not by size. For example, mechanical snubbers utilizing the same design features of the 2-kip, 10-kip, and 100-kip capacity manufactured by Company "A" are of the same type. The same design mechanical snubbers manufactured by Company "B" for the purposes of this Technical Specification would be of a different type, as would hydraulic snubbers from either manufacturer.

A list of individual snubbers 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 Plant Operations Committee. The determination shall be based upon 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 Guides 8.8 and 8.10. The addition or deletion of any hydraulic or mechanical 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 each safety-related system. Therefore, the required inspection interval varies inversely with the observed snubber failures on a given system and is determined by the number of inoperable snubbers found during an inspection. In order to establish the inspection frequency for each type of snubber on a safety-related system, it was assumed that the frequency of snubber~~





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## PLANT SYSTEMS

### BASES

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#### 3/4.7.4 SNUBBERS (Continued)

~~failures and initiating events is constant with time and that the failure of any snubber on that system could cause the system to be unprotected and to result in failure during an assumed initiating event. 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.~~

~~The acceptance criteria are to be used in the visual inspection to determine OPERABILITY of the snubbers. For example, if a fluid port of a hydraulic snubber is found to be uncovered, the snubber shall be declared inoperable and shall not be determined OPERABLE via functional testing.~~

To provide assurance of snubber functional reliability, one of two functional testing methods are used with the stated acceptance criteria:

1. Functionally test 10% of a type of snubber with an additional 5% tested for each functional testing failure, or
2. Functionally test a sample size and determine sample acceptance or continue testing using Figure 4.7-1.

[illegible]

Insert to Bases pages B 3/4 7-2 and 7-3

The visual inspection schedule is based on the number of unacceptable snubbers found during the previous inspection in proportion to the sizes of the various snubber populations or categories. A snubber is considered unacceptable if it fails the acceptance criteria of the visual inspection. Snubbers may be categorized, based upon their accessibility during power operation, as accessible or inaccessible. These categories may be examined separately or jointly. The decision to examine these categories separately or jointly shall be made and documented before the examination begins, and cannot be changed during the examination. The inspection interval is based on a fuel cycle of up to 24 months and may be as long as two fuel cycles, or 48 months for other fuel cycles, depending on the number of unacceptable snubbers found during the previous visual inspection. The examination interval may vary by  $\pm 25$  percent to coincide with the actual outage.