

ATTACHMENT

PROPOSED TECHNICAL SPECIFICATION REVISION

SNUBBERS

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### 3.14 SNUBBERS

#### Applicability

Applies to all modes of operation except cold shutdown and refueling shutdown.

#### Objective

To assure piping integrity in the event of a severe transient or seismic disturbance.

#### Specification

- 3.14.1 Except as permitted by 3.14.2 and 3.14.3, the reactor shall not be heated above 200°F unless all hydraulic and mechanical snubbers specified in the appropriate Station Procedure are operable.
- 3.14.2 If a snubber is determined to be inoperable, continued operation is permitted for a period not to exceed 72 hours, unless the snubber is sooner made operable.
- 3.14.3 If the requirements of 3.14.1 and 3.14.2 cannot be met, the reactor shall be in a cold shutdown condition within 36 hours.

#### Bases

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 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 snubbers required to protect the primary coolant system or any other safety system or component be operable during reactor operation.

Since the snubber protection is required only during low probability events, a period of 72 hours is allowed for repairs or replacements. In case a shutdown is required, the allowance of 36 hours to reach a cold 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 3.14.1 prohibits startup with inoperable snubbers.

## 4.18 SNUBBERS

### Applicability

Applies to hydraulic and mechanical snubbers used to protect the Reactor Coolant System and other safety-related systems.

### Objective

To verify that the required hydraulic and mechanical snubbers are operable.

### Specification

4.18.1 Each snubber associated with the Reactor Coolant System and other safety-related systems, as specified in the appropriate Section Procedure shall be visually inspected. Visual inspections shall verify:

- (1) that there are no visible indications of damage or impaired OPERABILITY,
- (2) attachments to the foundation or supporting structure are secure, and
- (3) in those locations where mechanical snubber movement can be manually induced, the snubbers shall be inspected as follows:
  - (a) At each refueling, the inaccessible snubbers shall be inspected near the beginning and the end of the outage.
  - (b) In the event of a severe dynamic event, snubbers in that system which experienced the event shall be inspected during the refueling outage to assure that the snubbers have freedom of movement and are not frozen up. The inspection shall consist of verifying freedom of motion using one of the following: (i) Manually induced snubber movement, (ii) evaluation of in place snubber piston setting; (iii) stroking the mechanical snubber through its full range of travel. If one or more mechanical snubbers are found to be frozen up during this inspection, those snubbers shall be replaced (or overhauled) before returning to power. Re-inspection shall subsequently be performed according to the schedule listed below, but the scope of the examination shall be limited to the systems listed above.

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 (1) the cause of the rejection is clearly established and remedied for that particular snubber and for other snubbers that may be generically susceptible; and (2) the affected snubber is functionally tested in the as found condition and determined OPERABLE per Specification 4.18.4. However, when the fluid port of a hydraulic snubber is found to be uncovered, the snubber shall be tested

by starting with the piston at the as found setting and extending the piston rod in the tension mode direction. All snubbers connected to an inoperable common hydraulic fluid reservoir shall be counted as inoperable snubbers. Snubber operability will be verified 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	4 months + 25%
5,6,7	2 months + 25%
>8	1 month + 25%

Note: (1) The required inspection interval shall not be lengthened more than two steps per inspection.

(2) Snubbers may be categorized in two groups, "accessible" or "inaccessible," based on their accessibility during reactor operation. These two groups may be inspected independently according to the above schedule.

(3) Hydraulic and mechanical snubber inspection schedules are independent.

4.18.2 All hydraulic snubbers with seal material not fabricated from ethylene propylene or other materials demonstrated compatible with the operating environment shall be visually inspected for operability once every month.

4.18.3 At least once per refueling outage, a representative sample, a minimum of 10% of the total of hydraulic snubbers in use in the plant, shall be functionally tested either in place or in a bench test. For each hydraulic snubber that does not meet the functional test acceptance criteria of Specification 4.18.4, an additional minimum of 10% of the hydraulic snubbers, shall be functionally tested until none are found inoperative or all 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 hydraulic snubbers. The representative sample shall be selected randomly from the total population of safety-related hydraulic snubbers.

In addition to the regular sample, hydraulic snubbers which failed the previous functional test shall be retested during the next test period. If a spare hydraulic snubber has been installed in place of a failed hydraulic snubber, then both the failed hydraulic snubber (if it is repaired and installed in another position) and the spare hydraulic snubber shall be retested. Test results of these hydraulic snubbers may not be included for the re-sampling, and failures shall not require additional testing of other snubbers.

If any hydraulic snubber selected for functional testing either fails to lockup or fails to move, i.e., frozen in place, an engineering evaluation will be performed to determine if the mode of failure could effect other snubbers of the same design. If this is determined, then reporting requirements under 10CFR Part 21 will be examined for applicability.

When a snubber is found inoperable, an engineering evaluation will be performed in accordance with appropriate Station Procedure.

4.18.4 The hydraulic snubber functional test shall verify that:

1. Activation (restraining action) is achieved within the specified range of velocity or acceleration in both tension and compression.
2. Snubber bleed, or release rate, where required, is within the specified range in compression or tension. For hydraulic snubbers specifically required to not displace under continuous load, the ability of the hydraulic snubber to withstand load without displacement shall be verified.

#### Bases

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 unless so determined, by the engineer, from a previous window of a schedule. 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 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.

To provide assurance of snubber functional reliability, a representative sample of the installed hydraulic snubbers will be functionally tested during refueling outages. 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.