Attachment 2 to NPL 98-0759
Marked up Technical Specifications Changes for TSCR 209

This attachment consists of a marked up Technical Specification 15.4.13 indicating the changes requested by this TSCR. This attachment contains four (4) pages (including this page).

15.4.13 SHOCK SUPPRESSORS (SNUBBERS)

DELETED

~~Applicability~~

~~Applies to the periodic inspection and testing requirements of safety related snubbers.~~

~~Objective~~

~~To verify the operability of the snubbers.~~

~~Specifications~~

~~The following surveillance requirements apply to safety related snubbers:~~

~~1. All snubbers shall be visually inspected to verify operability in accordance with the following schedule:~~

~~Number of Snubbers Found Inoperable During Inspection or During Inspection Interval~~	~~Next Required Inspection Interval~~
~~0~~	~~18 months ±25%~~
~~1~~	~~12 months ±25%~~
~~2~~	~~6 months ±25%~~
~~3, 4~~	~~124 days ±25%~~
~~5, 6, 7~~	~~62 days ±25%~~
~~≥8~~	~~31 days ±25%~~

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

~~2. During each refueling shutdown, a representative sample of approximately 10% of the snubbers shall be functionally tested for operability. The hydraulic snubber functional test shall verify:~~

~~a. Activation (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 or tension. For snubbers specifically required not to displace under continuous load, the ability of the snubber to withstand load without displacement shall be verified.~~

15.4.13 Shock Suppressors (Snubbers) (continued)

c. For each snubber found to be inoperable, an additional 10% of that type snubber shall be tested until no more failures are found or all units have been tested.

3. 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. Concurrent with the next inservice visual inspection and at least once per 18 months thereafter, the installation and maintenance records for all safety related snubbers 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 re-evaluated 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 re-evaluation replacement or reconditioning shall be indicated in the records.

Basis

All safety related snubbers are visually inspected for overall integrity and operability. The inspection will include verification of proper orientation, adequate hydraulic fluid level and proper attachment of snubber to piping and structures. To further increase the assurance of snubber reliability functional tests are performed once each refueling cycle on a representative sample of snubbers. These tests include stroking of the unit to verify proper piston movement, lock-up, and bleed within the acceptance criteria specified by the snubber manufacturers. Observed failures on these samples shall require testing of additional units. Snubbers rated at 50,000 lbs. or greater need not be functionally tested at their full rated capacity.

The inspection frequency is based upon maintaining a constant level of snubber protection. Thus, the required inspection interval varies inversely with the

observed snubber failures. The number of inoperable snubbers found during a required inspection determines the time interval for the next required 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.

The snubbers selected for the testing and inspection mentioned in Specification 15.4.13.2 above are chosen on a rotating basis such that over a period of eleven refueling cycles all accessible snubbers will have been tested.

ASME/ANSI OM Part 4, OM-1987 Requirements (OM-4)	***Current PBNP TS 15.4.13 Requirements***	***ASME Section XI 1986 Edition, IWF-1000, 2000 and 5000***	***Comparison Analysis***
1) Applies to snubbers which affect a function described in the plant Safety Analysis Report. Applicable to snubbers whose malfunction, as determined by the owner, would significantly increase the probability of occurrence or the consequences of an accident or the malfunction of equipment important to safety.	Applies to safety-related snubbers.	Applies to Class 1, 2, 3, and MC component supports.	Equivalent requirement. PBNP FSAR Table 6.2-12 lists the safety-related snubbers at PBNP.
2) Describes minimum test procedure content, examination and test result methods, personnel qualification requirements, instrumentation and test requirements including calibration control, and snubber maintenance and modification control.	Describes test requirements for functional tests only.	Describes examination and test result methods, and snubber maintenance and modification control.	OM-4 provides comprehensive additional detail not explicit in TS 15.4.13 or the 1986 edition of the ASME Code.
3) Has preservice inspection requirements including: preservice operability testing, preservice examination requirements, and thermal movement examination requirements.	Does not contain preservice inspection requirements.	Has preservice test requirements including: preservice examination requirements.	OM-4 provides comprehensive additional detail not explicit in TS 15.4.13 or the 1986 edition of the ASME Code.
4) Describes minimum visual inspection criteria.	Does not describe minimum visual inspection criteria.	Describes minimum visual inspection criteria (VT-3).	OM-4 provides comprehensive additional detail not explicit in TS 15.4.13, and is equivalent to the 1986 edition of the ASME Code requirements.
5) Contains visual inspection interval frequencies that are inversely proportional to the number of inoperable snubbers found during the inspection.	Contains visual inspection frequencies in parallel with OM-4.	Does not contain this requirement.	OM-4 and TS 15.4.13 have equivalent requirements, and the 1986 edition of the ASME Code does not contain this requirement.

ASME/ANSI OM Part 4, OM-1987 Requirements (OM-4)	*Current PBNP TS 15.4.13 Requirements*	*ASME Section XI 1986 Edition, IWF-1000, 2000 and 5000*	*Comparison Analysis*
6) Has reduced examination option if an examination of a group of snubbers during (2) successive 18 month examination intervals reveal no unacceptable snubbers. If an unacceptable snubber is revealed during a subsequent required group examination, the sample size for that required examination shall be increased to 100%.	Does not provide this option.	Does not provide this option.	Although TS 15.4.13 and the 1986 edition of the ASME Code do not include this option. This allowance to decrease sample size is appropriate. Having (2) successive 18 month examinations with no unacceptable snubbers is evidence of highly reliable snubbers. Therefore, reducing examination populations is justified in this case. In addition, this option requires 100% examination increase if a unacceptable snubber is revealed during subsequent testing, which is conservative.
7) Includes requirements for examination failure evaluations including identifying failure mode groups and corresponding requirements.	Does not include these requirements.	Includes requirements for evaluation of examination results, but not for failure evaluations and identifying failure mode groups.	OM-4 provides comprehensive additional detail not explicit in TS 15.4.13 and the 1986 edition of the ASME Code.
8) Describes operability testing requirements.	Describes functional test requirements consistent with the operability testing requirements contained in OM-4.	Describes inservice test requirements consistent with the operability testing and functional test requirements of OM-4 and TS 15.4.13. However, does not contain inservice test requirements for snubbers rated 50 kips or greater.	Equivalent requirement. However, the 1986 edition of the ASME Code does not contain test requirements for snubbers rated at 50 kips or greater.
9) Provides an option for qualitative operability testing in lieu of quantitative measurements provided adequate justification can be presented for position.	Does not provide this option.	Does not provide this option.	Although TS 15.4.13 and the 86 edition of the ASME Code do not include this option, this allowance is appropriate. Justification includes the ability of the snubber parameters to be within specifications based upon service history or testing. A test report for each snubber exempted must be provided and verify that the parameter was within specifications to allow the exemption.

ASME/ANSI OM Part 4, OM-1987 Requirements (OM-4)	*Current PBNP TS 15.4.13 Requirements*	*ASME Section XI 1986 Edition, IWF-1000, 2000 and 5000*	*Comparison Analysis*
10) Provides requirements for operability testing failure evaluation, and testing methods.	Does not include these requirements.	Does not include these requirements.	OM-4 provides comprehensive additional detail not explicit in TS 15.4.13 and the 1986 edition of the ASME Code.
11) Requires once every 18 months (+/- 25%) that either 10% or 35, whichever is less, of the snubbers installed be operability tested.	Requires that during each refueling shutdown, approximately 10% of the snubbers installed be functionally tested.	Requires that during each inspection period, 10% of the snubbers rated less than 50 kips be inservice tested.	Equivalent requirement, except the 1986 edition of the ASME Code applies to snubbers rated less than 50 kips. PBNP has (50) snubbers listed as safety-related in FSAR Table 6.2-12.
12) Requires that for each snubber determined to be unacceptable, another sample of at least (1/2) the size of the initial lot be tested until the total number = initial sample size * (1+c/2), where c = number of snubbers found to be unacceptable. The testing of additional sample lots is also required for snubbers determined to be unacceptable in subsequent test lots. Another sample of at least (1/2) the size of the initial lot shall be tested for each subsequent snubber determined to be unacceptable.	Requires that for each snubber found inoperable, an additional 10% of that type snubber be tested until no more failures are found or all units have been tested.	Requires that for each snubber found inoperable, an additional 10% of that type snubber be tested until no more failures are found or all units have been tested.	Equivalent requirement in principle. Each ensures that the examination sample size is expanded as necessary to ensure snubber operability.
13) Includes requirements for records and record keeping.	Includes requirements for records and record keeping similar to the requirements of OM-4.	Includes requirements for records and record keeping similar to the requirements of OM-4.	Equivalent requirement.
14) Does not contain a snubber service life record review requirement.	Requires a snubber record review at least once per 18 months to verify that the indicated service life has not or will not be exceeded prior to the next snubber service life review.	Does not contain a snubber service life record review requirement.	Although OM-4 and the 1986 edition of the ASME Code do not require this service life review, this TS 15.4.13 requirement will be proceduralized in an owner controlled document. PBNP has determined that this review is useful and necessary.