Docket No. 50-336

Attachment

Millstone Nuclear Power Station, Unit No. 2

Proposed Revisions to Technical Specifications

Snubber Surveillance

January, 1984

The attached proposed technical specification revisions are provided in response to Reference (1). The changes incorporate provisions contained in previous technical specification change requests (References (2) and (3)) as well as the model technical specifications provided to Northeast Nuclear Energy Company (NNECO's) in Reference (1).

A meeting with representatives from the Office of Inspection and Enforcement, Region I, was held on June 23, 1983 to discuss differences between the NNECO's Reference (3) proposed technical specifications and the NRC model technical specifications. At that meeting, resolution was reached on the majority of the deviations identified during the Staff's review of the Reference (3) proposal. The attached proposed technical specifications include revisions to the Reference (3) proposal which incorporate certain provisions of the Reference (1) model technical specifications as well as provisions contained in recently issued technical specifications for new operating licenses.

The following discussion is provided to support the attached proposed technical specifications where deviations from the model technical specifications of Reference (1) exist.

1. Visual Inspections Acceptance Criteria: The model technical specifications require a verification that freedom of movement exists in those locations where snubber movement can be manually induced without disconnecting the snubber.

   NNECO has not proposed this provision as part of the Millstone Unit No. 2 visual inspection acceptance criteria. During the snubber inspections conducted in fulfillment of the requirements of I&E Bulletin 81-01, NNECO utilized such in-place freedom of movement testing to establish mechanical snubber operability. Subsequent stroke testing of the snubbers did not confirm the conclusions reached through the manual in-place testing. As such, NNECO does not consider this provision in the model technical specifications to manually induce snubber movement in-place to be indicative and representative of snubber operability.

   Furthermore, the amount of movement which can be induced in a snubber when it is attached to its supports is insignificant, rendering such a test inconclusive.

   Open fluid ports have not been specifically identified in the technical specifications as a cause of snubber inoperability. The surveillance procedure for hydraulic snubbers, SP 2733A, identifies an open fluid port as a cause for declaring a snubber inoperable. NNECO does not consider the inclusion of detailed surveillance criteria within the technical specifications appropriate. The surveillance procedures more appropriately list the criteria by which a snubber is determined operable.

2. Mechanical Snubber Functional Test Acceptance Criteria: The applicable portions of the model technical specifications regarding mechanical snubber functional test acceptance criteria have been incorporated into the attached proposal. The provision to verify snubber release rate and displacement under continuous load has not been included. NNECO does not utilize mechanical snubbers at Millstone Unit No. 2 designed to function in a manner in which such testing would be applicable. As such, the inclusion of the model technical specification 4.7.9.e.3 is inappropriate.

As noted in the attached proposed technical specification 4.7.8.1.e for Mechanical Snubber Functional Test Acceptance Criteria, NNECO has proposed to defer the effective date of this requirement until such time as test equipment is procured and installed onsite. NNECO is currently reviewing various testing machines on the market. It is expected that the equipment will be inservice by the end of 1984. In any event, the provisions of Specification 4.7.8.1.e proposed herein will become effective no later than June 30, 1985. This date was considered acceptable by the NRC Staff at the June 23, 1983 meeting. In the interim, mechanical stroke testing (as described in Reference (3)) will be utilized to fulfill the requirements of Specification 4.7.8.1.e.

3. Steam Generator Hydraulic Snubbers: The steam generator hydraulic snubbers are proposed to be exempted from the requirements for snubber functional testing in Specification 4.7.8.c. These snubbers are 50,000 lb or greater capacity and are tested and refurbished in accordance with a preventative maintenance program based on the manufacturers recommendations.

   Each refueling outage, all 16 steam generator hydraulic snubbers are visually inspected. This inspection is designed to identify any evidence of leakage, structural defects, hardware anomalies and fluid reservoir level. Approximately every five years, all 16 steam generator hydraulic snubbers are removed and sent offsite for functional testing and refurbishment. This periodicity in testing and refurbishment is consistent with the manufacturers recommendations contained in ITT-Grinnell Instruction Manual No. THD-6511-8. It is NNECO's position that this testing frequency fulfills the intent of the model technical specifications and supports the requested exemption.

4. Tables 3.7-1a and 3.7-1b, Applicable Modes: The MODES in which a snubber is required to be OPERABLE are consistent with the APPLICABILITY requirements for the system to which the snubber is attached as provided for in the technical specifications.

References: (1) D. G. Eisenhut letter to All Power Reactor Licensees (Except SEP Licensees), dated November 20, 1980.

(2) W. G. Counsil letter to R. Reid, dated January 8, 1979.

(3) W. G. Counsil letter to R. A. Clark, dated July 15, 1981.

3/4.7.8 SNUBBERS

LIMITING CONDITION FOR OPERATION

3.7.8.1 All snubbers listed in Tables 3.7-1a and 3.7-1b shall be OPERABLE.

APPLICABILITY

As shown in Tables 3.7-1a and 3.7-1b.

ACTION

As shown in Tables 3.7-1a and 3.7-1b.

SURVEILLANCE REQUIREMENTS

4.7.8.1 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 Inspection

Visual inspections shall be performed in accordance with the inspection schedule listed in Table 4.7-3.

b. Visual Inspection Acceptance Criteria

Visual inspections shall verify: (1) that there are no visible indications of damage or impaired OPERABILITY and (2) attachments to the foundation or supporting structure 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 that may be

generically susceptible; and (2) the affected snubber is functionally tested in the as found condition and determined OPERABLE per Specifications 4.7.8.d or 4.7.8.e, as applicable.

All snubbers connected to an inoperable common hydraulic fluid reservoir shall be counted as inoperable snubbers.

c. Snubber Tests

At least once per eighteen (18) months during shutdown, a representative sample (10% of the total of each type of snubber, mechanical and hydraulic, except steam generator hydraulic snubbers in use in the plant) shall be tested either in place or in a bench test. For each snubber that does not meet the test acceptance criteria of Specification 4.7.8.1d or 4.7.8.1e, as applicable, an additional 10% of that type of snubber shall be tested.

Testing shall continue until no additional inoperable snubbers are found within a sample or until all snubbers in Tables 3.7-1a and 3.7-1b have been tested. The representative sample selected for testing shall include the various configurations, and the range of size and capacity of snubbers.

Snubbers identified in Tables 3.7-1a and 3.7-1b as "Especially Difficult to Remove" or in "High Radiation Zones During Shutdown" shall also be included in the representative sample.* Tables 3.7-1a and 3.7-1b may be used jointly or separately as the basis for the sampling plan.

In addition to the regular sample, in locations where snubbers had failed the previous test due to operational or environmental conditions (excessive vibration, water hammer, high radiation, extreme heat or humidity, etc.), the snubbers currently installed in these locations shall be tested during the next test period. Test results of these snubbers may not be included for the resampling. All replacement snubbers shall have been tested prior to installation.

All steam generator hydraulic snubbers shall be tested and refurbished in accordance with the preventative maintenance program, based on the manufacturers recommendations, and are exempted from the requirements of this specification.

*Permanent or other exemptions from functional testing for individual snubbers in these categories may be granted by the Commission only if a justifiable basis for exemption is presented.

If any snubber selected for testing either fails to lock-up or fails to move (i.e., frozen in place), the cause will be evaluated and if caused by manufacturer design deficiency, all snubbers of the same design subject to the same defect shall be tested regardless of location or difficulty of removal. This testing requirement shall be independent of the requirements stated above for snubbers not meeting the test acceptance criteria.

For the snubber(s) found inoperable, an engineering evaluation shall be performed on the components which are supported by the snubber(s). The purpose of this engineering evaluation shall be to determine if the components supported by the snubber(s) were adversely affected by the inoperability of the snubber(s) in order to ensure that the supported component remains capable of meeting the designed service.

d. Hydraulic Snubbers Functional Test Acceptance Criteria

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.

e. Mechanical Snubbers Functional Test Acceptance Criteria*

The mechanical snubber functional test shall verify that:

1. The force that initiates free movement of the snubber rod in either tension or compression is less than the specified maximum drag force.

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

*Mechanical snubber functional test acceptance criteria shall become effective upon installation of snubber testing equipment but not later than June 30, 1985.

f. Snubber Service Life Monitoring

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 as required by Specification 6.10.2.h.

Concurrent with the first inservice visual inspection and at least once per 18 months thereafter, the installation and maintenance records for each snubber listed in Tables 3.7-1a and 3.7-1b 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 service life review, the snubber service life shall be reevaluated 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 reevaluation, replacement or reconditioning shall be indicated in the records.

TABLE 3.7-1a

SAFETY RELATED HYDRAULIC SNUBBERS*

HANGER No. (1)	SYSTEM, LOCATION AND ELEVATION	ACCESSIBLE OR INACCESSIBLE (A or I)	HIGH RADIATION ZONE** (Yes or No)	ESPECIALLY DIFFICULT TO REMOVE (Yes or No)	APPLICABLE MODES (3)	ACTION
312015 (2)	MS-4N/41W/+66	I	No	Yes	1, 2, 3	1
312016 (2)	MS-4N/41E/+66	I	No	Yes	1, 2, 3	1
312017	MS-4N/41E/+64	I	No	Yes	1, 2, 3	1
312018	MS-4N/41W/+64	I	No	Yes	1, 2, 3	1
312019	MS-4N/41E/+63	I	No	Yes	1, 2, 3	1
401008	CS -F.2/18.9/-37	A	Yes	No	1, 2, 3, 4	1
401024	CS-F.8/17.7/-30	A	No	No	1, 2, 3, 4	1
401025 (2)	HPSI-H.2/17.2/-30	A	No	No	1, 2, 3, 4	1
401106	HPSI-H.4/17.7/-11	A	No	Yes	1, 2, 3, 4	1
401107	HPSI-H.4/17.7/-13	A	No	Yes	1, 2, 3, 4	1
402009	SDC-F.2/18.9/-32	A	Yes	No	6	3
402013	HPSI-F.3/18.9/-40	A	Yes	No	1, 2, 3, 4	1
402022	LPSI-F.2/18.1/-31	A	Yes	No	1, 2, 3(+), 6	4
402056 (2)	CS -H.4/17.6/-32	A	Yes	No	1, 2, 3(+), 6	4
402083	CS-H.4/18.4/-20	A	No	Yes	1, 2, 3(+)	1
402100	SIT-42S/41W/+25	I	No	No	1, 2, 3(+)	1

TABLE 3.7-1a (Continued)

SAFETY RELATED HYDRAULIC SNUBBERS*

HANGER No. (1)	SYSTEM, LOCATION AND ELEVATION	ACCESSIBLE OR INACCESSIBLE (A or I)	HIGH RADIATION ZONE** (Yes or No)	ESPECIALLY DIFFICULT TO REMOVE (Yes or No)	APPLICABLE MODES (3)	ACTION
402113 (2)	SDC-18S/50W/-2	I	Yes	No	6	3
402115 (2)	SDC-18S/50W/+3	I	Yes	No	6	3
403068	SFP-E.5/18.1/-36	A	Yes	No	See Note 4	5
403070	SFP.L.5/18.9/+10	A	Yes	No	See Note 4	6
403090	SFP-M.4/18.9/+7	A	Yes	No	See Note 4	6
405388	MS-E.5/19.6/+53	A	No	No	1, 2, 3	1
405618 (2)	RBCCW-?.7/16.6/-13	A	No	No	1, 2, 3, 4	1
410004 (2)	HPSI-57S/10W/-13	I	No	No	1, 2, 3, 4	1
410012	SIT-27S/42W/+13	I	Yes	No	1, 2, 3(+)	1
410014	SIT-30S/47W/+15	I	No	No	1, 2, 3(+)	1
410015	SIT-30S/47W/+15	I	No	No	1, 2, 3(+)	1
410017	SIT-38S/48W/+1	I	No	No	1, 2, 3(+)	1
410019	SIT-32S/47W/+8	I	No	No	1, 2, 3(+)	1
410021	SIT-6N/47W/+9	I	No	No	1, 2, 3(+)	1
410022	SIT-9N/62W/+5	I	No	No	1, 2, 3(+)	1
410027	SIT-6N/47W/+10	I	No	No	1, 2, 3(+)	1
410028	SIT-6N/47W/+15	I	No	Yes	1, 2, 3(+)	1

TABLE 3.7-1a (Continued)

SAFETY RELATED HYDRAULIC SNUBBERS*

HANGER No. (1)	SYSTEM, LOCATION AND ELEVATION	ACCESSIBLE OR INACCESSIBLE (A or I)	HIGH RADIATION ZONE** (Yes or No)	ESPECIALLY DIFFICULT TO REMOVE (Yes or No)	APPLICABLE MODES (3)	ACTION
410029	SIT-6N/47W/+15	I	No	No	1, 2, 3(+)	1
410031 (2)	SIT-1N/37W/+15	I	Yes	No	1, 2, 3(+)	1
410061	SDC-20S/28W/-5	I	Yes	Yes	6	3
410065 (2)	SIT-53S/33E/-4	I	No	Yes	1, 2, 3(+)	1
410067	SIT-30S/47E/+6	I	No	No	1, 2, 3(+)	1
410083	SIT-30S/54E/-1	I	No	No	1, 2, 3(+)	1
410086 (3)	SIT-30S/47E/+15	I	No	1 Yes, 2 No	1, 2, 3(+)	1
410103	SIT-11N/61W/+5	I	No	No	1, 2, 3(+)	1
411030(2)	FW-E.5/23.0/50	A	No	No	1, 2, 3,(2)	2
60025	FW-E.0/22.0/40	A	No	No	1, 2, 3,(2)	2
60026	FW-E.0/20.0/33	A	No	No	1, 2, 3,(2)	2
412002	MS-4N/41W/+63	I	No	Yes	1, 2, 3	1
412003	MS-M.4/18.9/+55	A	No	No	1, 2, 3	1
412004	MS-E.5/20/+50	A	No	No	1, 2, 3	1
412013	FEED-7S/50E/+50	I	No	No	1, 2, 3	1
412015	FEED-10S/50W/+49	I	No	No	1, 2, 3	1

TABLE 3.7-1a (Continued)

SAFETY RELATED HYDRAULIC SNUBBERS*

HANGER No. (1)	SYSTEM, LOCATION AND ELEVATION	ACCESSIBLE OR INACCESSIBLE (A or I)	HIGH RADIATION ZONE** (Yes or No)	ESPECIALLY DIFFICULT TO REMOVE (Yes or No)	APPLICABLE MODES (3)	ACTION
412016 (2)	MS-M.4/20/+55	A	No	No	1, 2, 3	1
412018	FEED-3S/51W/+45	I	No	Yes	1, 2, 3	1
413009	MS-F.8/18.9/+55	A	No	No	1, 2, 3 (2)	2
413011 (2)	MS-E.5/18/+40	A	No	No	1, 2, 3 (2)	2
413018 (2)	MS-H.4/18.9/+55	A	No	No	1, 2, 3	1
413019 (2)	MS-E.5/17/+40	A	No	No	1, 2, 3 (2)	2
413022 (2)	MS-E/16/+41	A	No	No	1, 2, 3 (2)	2
413024 (2)	MS-E.5/17/+40	A	No	No	1, 2, 3 (2)	2
413025 (2)	MS-E.5/17/+40	A	No	No	1, 2, 3 (2)	2
413028	MS-K.7/18.9/+55	A	No	No	1, 2, 3	1
413029 (2)	MS-E.5/18.5/+48	A	No	No	1, 2, 3 (2)	2
413030 (2)	MS-E.5/18.5/+46	A	No	No	1, 2, 3 (2)	2
413031	MS-E.5/18.5/+47	A	No	No	1, 2, 3 (2)	2
413032 (2)	MS-E.5/19.6/+56	A	No	No	1, 2, 3	1
413041	MS-C/16/+44	A	No	No	1, 2, 3 (2)	2
413046 (2)	MS-E/16/+41	A	No	No	1, 2, 3 (2)	2
413081	MS-E.5/19/+46	A	No	No	1, 2, 3	1

TABLE 3.7-1a (Continued)

SAFETY RELATED HYDRAULIC SNUBBERS*

HANGER No. (1)	SYSTEM, LOCATION AND ELEVATION	ACCESSIBLE OR INACCESSIBLE (A or I)	HIGH RADIATION ZONE** (Yes or No)	ESPECIALLY DIFFICULT TO REMOVE (Yes or No)	APPLICABLE MODES (3)	ACTION
413082 (2)	MS-E.5/13'+46	A	No	No	1, 2, 3	1
413172	FEED-E.5/19/+49	A	No	No	1, 2, 3 (2)	2
413179	FEED-J.7/18.9/+50	A	No	No	1, 2, 3 (2)	2
413181	FEED-K.7/18.9/+50	A	No	No	1, 2, 3 (2)	2
413192 (2)	FEED-F.2/18.9/+50	A	No	No	1, 2, 3 (2)	2
413199 (2)	FEED-L.5/19.8/+50	A	No	No	1, 2, 3	1
416014 (2)	CS-8S/61E/+7	I	No	No	1, 2, 3(+)	1
416020	CS-23S/56E/+10	I	No	No	1, 2, 3(+)	1
416023 (2)	CS-30S/60W/+7	I	No	No	1, 2, 3(+)	1
416025	CS-18S/60W/+8	I	No	No	1, 2, 3(+)	1
416027	CS-5S/60W/+5	I	No	No	1, 2, 3(+)	1
427075	SW-L.5/17.2/-13	A	No	No	1, 2, 3, 4	1
427097 (2)	SW-L.5/17.2/-11	A	No	No	1, 2, 3, 4	1
427106	SW-L.5/17.2/-11	A	No	No	1, 2, 3, 4	1
450071	RBCCW-J.7/17.2/-13	A	No	No	1, 2, 3, 4	1

TABLE 3.7-1a (Continued)

SAFETY RELATED HYDRAULIC SNUBBERS*

HANGER No. (1)	SYSTEM, LOCATION AND ELEVATION	ACCESSIBLE OR INACCESSIBLE (A or I)	HIGH RADIATION ZONE** (Yes or No)	ESPECIALLY DIFFICULT TO REMOVE	APPLICABLE MODES (3)	ACTION
501022 (2)	HPSI-F.8/18.9/-29	A	Yes	Yes	1, 2, 3, 4	1
502032	CS-E.5/19.6/+2	A	Yes	No	1, 2, 3(+)	1
504002	HPSI-F.2/18.5/-42	A	Yes	No	1, 2, 3, 4	1
504003	HPSI-F.2/17.2/-42	A	Yes	No	1, 2, 3, 4	1
505166 (2)	RBCCW-J.7/17.2/-16	A	No	No	1, 2, 3, 4	1
507004	HPSI-F.2/18.5/-42	A	Yes	No	1, 2, 3, 4	1
510017	SIT-6N/47E/+15	I	No	No	1, 2, 3(+)	1
510018	SIT-6N/47E/+15	I	No	No	1, 2, 3(+)	1
513023 (2)	MS-K.6/19.6/-2	A	Yes	No	1, 2, 3	1
513032	MS-E/19/+48	A	No	No	1, 2, 3 (2)	2
SS1-SS8 (8)	SG #1	I	Yes	Yes	1, 2, 3	1
SS1-SS8 (8)	SG #2	I	Yes	Yes	1, 2, 3	1

Table Notation

* Snubbers may be added or deleted without prior License Amendment to Table 3.7-1a provided that a revision to Table 3.7-1a is included with the next License Amendment request. In lieu of any other report required by Specification 6.9.1, at least 15 days prior to the deletion of any listed snubber, a Special Report shall be prepared and submitted to the Commission in accordance with Specification 6.9.2 evaluating the safety significance of the proposed snubber removal.

** Modifications to this column due to changes in high radiation areas may be made without prior License Amendment provided that a revision to Table 3.7-1a is included with the next License Amendment request.

SAFETY RELATED MECHANICAL SNUBBERS*

HANGER NO. (1)	SYSTEM, LOCATION AND ELEVATION	ACCESSIBLE OR INACCESSIBLE (A or I)	HIGH RADIATION ZONE** (Yes or No)	ESPECIALLY DIFFICULT TO REMOVE (Yes or No)	APPLICABLE MODES (3)	ACTION
60017	FW-E.0/23.0/39	A	No	No	1,2,3(2)	2
60245	RHV-18N/26E/59	I	Yes	No	1,2,3,4	1
60246	RHV-21N/26E/57	I	Yes	No	1,2,3,4	1
60247	RHV-18N/27E/59	I	Yes	No	1,2,3,4	1
60251	RHV-18S/2E/32	I	Yes	No	1,2,3,4	1
60253	RHV-18S/1W/30	I	Yes	No	1,2,3,4	1
302092	HPSI-P.2/18.9/-42	A	Yes	No	1,2,3,4	1
310022	SI-46S/22E/-3	I	No	No	1,2,3,4	1
401014	LPSI-E.5/16.8/-35	A	Yes	No	1,2,3(+),6	4
401016(2)	LPSI-E.5/16.8/-36	A	Yes	No	1,2,3(+),6	4
401018	HPSI-P.3/16.6/-34	A	Yes	No	1,2,3,4	1
401019(2)	HPSI-P.3/16.6/-30	A	Yes	No	1,2,3,4	1
401020(2)	HPSI-P.3/16.6/-28	A	Yes	No	1,2,3,4	1

SAFETY RELATED MECHANICAL SNUBBERS*

HANGER NO. (1)	SYSTEM, LOCATION AND ELEVATION	ACCESSIBLE OR INACCESSIBLE (A or I)	HIGH RADIATION ZONE** (Yes or No)	ESPECIALLY DIFFICULT TO REMOVE (Yes or No)	APPLICABLE MODES (3)	ACTION
402008	SDC-P.2/18.9/-32	A	Yes	No	6	3
402120	SDC-P.2/18.9/-35	A	Yes	No	6	3
404020(2)	HPSI-E.5/18.4/-8	A	Yes	No	1,2,3,4	1
405647	RBCCW-M.4/16.6/9	A	No	No	1,2,3,4	1
408001	RCS-17N/27E/54	I	No	No	1,2,3,4	1
408002(2)	RCS-15N/29E/60	I	No	No	1,2,3,4	1
408003(2)	RCS-20N/29E/56	I	No	No	1,2,3,4	1
408004(2)	RCS-20N/29E/55	I	No	No	1,2,3,4	1
408009(3)	RCS-23N/30E/46	I	No	No	1,2,3,4	1
408010(4)	RCS-23N/20E/56	I	No	No	1,2,3,4	1
410007	SI-55S/50E/-10	I	Yes	No	1,2,3(+)	1
410037(2)	RCS-17N/38E/53	I	No	No	1,2,3,4	1
410040	RCS-17N/39E/52	I	No	No	1,2,3,4	1
410046	RCS-8N/19E/28	I	Yes	No	1,2,3,4	1

T 3.7-1b

SAFETY RELATED MECHANICAL SNUBBERS*

HANGER NO. (1)	SYSTEM, LOCATION AND ELEVATION	ACCESSIBLE OR INACCESSIBLE (A or I)	HIGH RADIATION ZONE** (Yes or No)	ESPECIALLY DIFFICULT TO REMOVE (Yes or No)	APPLICABLE MODES (3)	ACTION
410049	RCS-8N/18E/15	I	Yes	No	1,2,3,4	1
410054	RCS-6N/13E/26	I	Yes	No	1,2,3,4	1
410059	RCS-24S/18E/22	I	Yes	No	1,2,3,4	1
410062(2)	SDC-18S/48W/-6	I	No	No	6	3
410092	SI-53S/33E/-6	I	No	No	1,2,3(+)	1
411045(2)	FW-E.0/22.0/44	A	No	No	1,2,3(2)	2
411062(2)	FW-D.0/20.0/38	A	No	No	1,2,3(2)	2
413064(2)	MS-L.6/19.8/52	A	No	No	1,2,3	1
413132(2)	MS-L.6/18.9/52	A	No	No	1,2,3	1
413135(2)	MS-E.5/19.0/45	A	No	No	1,2,3	1
414001(2)	RCS-22N/20E/55	I	No	No	1,2,3,4	1
414002(2)	RCS-20N/20E/55	I	No	No	1,2,3,4	1

TABLE 3.7-1b

SAFETY RELATED MECHANICAL SNUBBERS*

HANGER NO. (1)	SYSTEM, LOCATION AND ELEVATION	ACCESSIBLE OR INACCESSIBLE (A or I)	HIGH RADIATION ZONE** (Yes or No)	ESPECIALLY DIFFICULT TO REMOVE (Yes or No)	APPLICABLE MODES (3)	ACTION
414006(2)	RCS-24N/20E/45	I	No	No	1,2,3,4	1
414009(2)	RCS-24N/30E/40	I	No	No	1,2,3,4	1
414016(2)	RCS-21N/31E/44	I	No	No	1,2,3,4	1
414018(2)	RCS-15N/30E/58	I	No	No	1,2,3,4	1
414021(2)	RCS-15N/31E/54	I	No	No	1,2,3,4	1
414024(2)	RCS-20N/31E/53	I	No	No	1,2,3,4	1
414025(2)	RCS-20N/31E/58	I	No	No	1,2,3,4	1
414027(2)	RCS-21N/30E/58	I	No	No	1,2,3,4	1
414029(4)	RCS-20N/33E/51	I	No	No	1,2,3,4	1
414032(2)	RCS-22N/33E/55	I	No	No	1,2,3,4	1
414033(2)	RCS-23N/32E/55	I	No	No	1,2,3,4	1
414035	RCS-25N/39E/29	I	Yes	No	1,2,3,4	1
416016(2)	CS-3S/63E/24	I	No	No	1,2,3(+)	1
416021	CS-43S/43W/7	I	No	No	1,2,3(+)	1
416022	CS-43S/43W/5	I	No	No	1,2,3(+)	1
416032(2)	CS-3N/62W/108	I	No	No	1,2,3(+)	1
427110	SW-L.5/15.9/5	A	No	No	1,2,3,4	1

SAFETY RELATED MECHANICAL SNUBBERS*

HANGER NO. (1)	SYSTEM, LOCATION AND ELEVATION	ACCESSIBLE OR INACCESSIBLE (A or I)	HIGH RADIATION ZONE** (Yes or No)	ESPECIALLY DIFFICULT TO REMOVE (Yes or No)	APPLICABLE MODES (3)	ACTION
427111	SW-L.5/15.9/5	A	No	No	1,2,3,4	1
427115(2)	SW-L.5/15.9/-14	A	No	No	1,2,3,4	1
450058(2)	RBCCW-P.8/17.2/-34	A	Yes	No	1,2,3,4	1
501023(2)	CS-E.5/18.5/-41	A	Yes	No	1,2,3,4	1
501024	CS-E.5/18.5/-38	A	Yes	No	1,2,3,4	1
502024(2)	SDC-P.2/19.6/-9	A	Yes	No	1,2,3,4	1
502026	LPSI-P.2/19.6/-15	A	Yes	No	6	3
502035	LPSI-E.5/18.5/-37	A	Yes	No	1,2,3(+),6	4
505143	RBCCW-H.4/16.6/-13	A	Yes	No	1,2,3(+),6	4
507002	SI-34S/34E/17	I	No	No	1,2,3,4	1
510004	SI-57S/21E/-10	I	No	No	1,2,3(+)	1
512001	MS-E.5/20.0/43	A	No	No	1,2,3,4	1
512002	MS-M.4/18.9/60	A	No	No	1,2,3	1
512003	MS-E.5/20.0/40	A	No	No	1,2,3	1
513008	MS-L.5/18.9/44	A	No	No	1,2,3	1
513036	MS-K.7/18.9/45	A	No	No	1,2,3	2
513040	MS-L.5/18.9/47	A	No	No	1,2,3	2

SAFETY RELATED MECHANICAL SNUBBERS*

HANGER NO. (1)	SYSTEM, LOCATION AND ELEVATION	ACCESSIBLE OR INACCESSIBLE (A or I)	HIGH RADIATION ZONE** (Yes or No)	ESPECIALLY DIFFICULT TO REMOVE (Yes or No)	APPLICABLE MODES (3)	ACTION
513041	MS-K.6/19.6/-2	A	Yes	No	1,2,3	2
513042	MS-K.6/18.9/9	A	Yes	No	1,2,3	2
514001	RCS-18N/32E/29	I	No	No	1,2,3,4	1
527071(2)	SW-L.5/16.6/-11	A	No	No	1,2,3,4	1
527072(2)	SW-L.5/16.6/-11	A	No	No	1,2,3,4	1
PSKM02022 D.P. 107	MS-4S/39E/10	I	No	No	1,2,3	2
PSKM02022 D.P. 109	MS-3N/39E/10	I	No	No	1,2,3	2
PSKM02023 D.P. 158	MS-25S/41E/18	I	No	No	1,2,3	2
PSKM02024 D.P. 23	MS-43S/30E/-10	I	Yes	No	1,2,3	2
PSKM02025 D.P. 125(2)	MS-31S/32W/-9	I	Yes	No	1,2,3	2
PSKM02026 D.P. 307	MS-29S/35W/23	I	Yes	No	1,2,3	2
PSKM02027 D.P. 190	MS-17S/32W/24	I	Yes	No	1,2,3	2
PSKM02030 D.P. 253	MS-6N/33W/-5	I	No	No	1,2,3	2

TABLE 3.7-1b

SAFETY RELATED MECHANICAL SNUBBERS*

HANGER No. (1)	SYSTEM, LOCATION AND ELEVATION	ACCESSIBLE OR INACCESSIBLE (A or I)	HIGH RADIATION ZONE** (Yes or No)	ESPECIALLY DIFFICULT TO REMOVE	APPLICABLE MODES (3)	ACTION
FSKM02097 D.P. 402	MS-2S/40E/10	I	No	No	1, 2, 3	2
FSKM15021 D.P. 781	HPSI-E.5/19.9/-3	A	No	No	1, 2, 3, 4	1
FSKM15029 D.P. 537	HPSI-F.2/19.6/-3	A	No	No	1, 2, 3, 4	1
FSKM17013 D.P. 38	CVCS-F.2/19.6/-12	A	Yes	No	1, 2, 3, 4	1
FSKM17095 D.P. 34	CVCS-22S/19W/3	I	Yes	No	1, 2, 3, 4	1
FSKM17095 D.P. 50-1	CVCS-22S/19W/6	I	Yes	No	1, 2, 3, 4	1
FSKM17103 D. P. 411	CVCS-20S/25W/-11	I	Yes	No	1, 2, 3, 4	1
FSKM32012 D.P. 152	CVCS-15S/18W/-6	I	Yes	No	1, 2, 3, 4	1
SK-M-1016 D.P. 208	MS-K.6/19.6/-2	A	Yes	No	1, 2, 3	2
SK-M-1016 D.P. 215	MS-K.6/19.6/-2	A	Yes	No	1, 2, 3	2

Table Notation

* Snubbers may be added or deleted without prior License Amendment to Table 3.7-1b provided that a revision to Table 3.7-1b is included with the next License Amendment request. In lieu of any other report required by Specification 6.9.1, at least 15 days prior to the deletion of any listed snubber, a Special Report shall be prepared and submitted to the Commission in accordance with Specification 6.9.2 evaluating the safety significance of the proposed snubber removal.

** Modifications to this column due to changes in high radiation areas may be made without prior License Amendment provided that a revision to Table 3.7-1b is included with the next License Amendment request.

SAFETY RELATED SNUBBERS

Table Notation

(1) The hanger number is listed. Where more than one snubber is associated with a given hanger, it is so indicated in parentheses.

(2) Snubber operability is not required if the line containing the hanger is isolated from the SG.

(3) If the associated facility is inoperable, snubber operability is not required.

(4) Whenever irradiated fuel assemblies are in the storage pool.

(+) With pressurizer pressure $\geq$ 1750 psia.

ACTION Statements*#

ACTION 1 - Restore the inoperable snubbers(s) to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in a MODE not requiring the snubbers to be OPERABLE within the following 30 hours.

ACTION 2 - Restore the inoperable snubber(s) to OPERABLE status or isolate the line containing the hanger from the affected steam generator within 72 hours or be in at least HOT STANDBY within the next 6 hours and in a MODE not requiring the snubbers to be OPERABLE within the following 30 hours.

ACTION 3 - Restore the inoperable snubber(s) to OPERABLE status within 72 hours or suspend all operations involving a reduction in boron concentration of the Reactor Coolant System.

ACTION 4 - Complete ACTION Statement 1 if in MODES 1, 2 or 3(+) and ACTION Statement 3 if in MODE 6.

ACTION 5 - Restore the inoperable snubber(s) to OPERABLE status within 72 hours or verify the temporary connection from the shutdown cooling heat exchangers is isolated. The provisions of Specification 3.03 are not applicable.

ACTION 6 - Restore the inoperable snubber(s) to OPERABLE status within 72 hours or connect shutdown cooling to the spent fuel pool cooling system. The provisions of Specification 3.03 are not applicable.

---

* An engineering evaluation of systems or components supported by inoperable snubber(s) shall be performed per Specification 4.7.8.1.c within 72 hours for each ACTION.

\# An engineering evaluation may be performed for the purposes of declaring the affected system operable with the inoperable snubber, provided a prompt report is submitted pursuant to Specification 6.9.1.8.i and the snubber is repaired at the next outage of sufficient duration.

TABLE 4.7-3

SNUBBER VISUAL INSPECTION SCHEDULE

NUMBER OF SNUBBERS FOUND INOPERABLE DURING INSPECTION INTERVAL*	SUBSEQUENT VISUAL INSPECTION INTERVAL**#
0	18 months ± 25%
1	12 months ± 25%
2	6 months ± 25%
3 or 4	124 days ± 25%
5, 6 or 7	62 days ± 25%
≥8	31 days ± 25%

*Snubbers may be categorized into two groups: Mechanical and Hydraulic. Each group may be divided into two subgroups: those accessible and those inaccessible during reactor operation. Each group and subgroup may be inspected independently in accordance with the above schedule.

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

#The provisions of Specification 4.0.2 are not applicable.

3/4.7.8 SNUBBERS

BASES

3.4.7.8 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.

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.

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, 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. Due to the size and location of the steam generator hydraulic snubbers, regular removal and testing as specified for hydraulic and mechanical snubbers would represent a significant under taking during each refueling outage. As such, these snubbers have been treated separately and are tested and refurbished as a group in accordance with the manufacturer's recommended preventative maintenance program.

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.

3/4.7.8 SNUBBERS

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.

To provide assurance of snubber reliability, a representative sample of the installed snubbers will be tested during plant shutdowns at eighteen (18) month intervals. Observed failures of these sample snubbers shall require testing of additional units.

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

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.