UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO ISSUANCE OF AMENDMENT NO. 96 TO DPR-65

NORTHEAST NUCLEAR ENERGY COMPANY, ET AL.

MILLSTONE NUCLEAR POWER STATION, UNIT 2

DOCKET NO. 50-336

1. INTRODUCTION

Operating experiences, advances in the state-of-the-art, voids in some specific requirements, and nonuniform interpretations indicated the need for changes, clarifications, and improvements in the Standard Technical Specifications (STS) for inservice operability and surveillance requirements for snubbers. To reflect accumulated experience obtained in the past several years, the NRC staff issued Revision 1 of the snubber STS. By letters dated November 20, 1980 to power reactor licensees (except SEP licensees) and March 23, 1981 to SEP licensees, the NRC requested all licensees to incorporate the requirements of this revision into their plant specific Technical Specifications (TS).

The revised STS included:

- Addition of mechanical snubbers to the surveillance program;
- Deletion of the blanket exemption for testing of greater than 50,000 lb. rated capacity snubbers. (Snubbers of greater than 50,000 lb. capacity are now included in the testing program);
- Deletion of the requirement that seal material receive NRC approval;
- Clarification of test requirements;
- Provision for in-place testing; and
- Addition of a service life monitoring program.

2. DISCUSSION

In response to the NRC request, by letter dated July 15, 1981, the licensee submitted an application for license amendment and proposed TS changes for operability and surveillance requirements for snubbers.

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The initial review of the licensee's submittal was performed by the NRC staff and its contractor Lawrence Livermore National Laboratory (LLNL). LLNL prepared the attached Technical Evaluation Report (TER) No. UCID-19718 dated August 18, 1983, based on a comparison of the licensee's proposed TS with the STS and discussions with the licensee during an NRC/licensee meeting of June 23, 1983. The TER contains detailed information of the evaluation and an integral appendix that compares the licensee's proposed TS with the STS and provides a proposed resolution for each deviation.

The TER concluded that the licensee's proposed TS requires either additional modifications in order to conform to the STS or adequate justification for deviations. The NRC staff reviewed the TER and concurred with its basis and findings.

By letter dated September 6, 1983, the NRC staff transmitted the TER to the licensee and requested a revised proposed TS be submitted.

3. EVALUATION

By letter dated January 18, 1984, the licensee submitted revised proposed TS changes to the operability and surveillance requirements for snubbers. The NRC staff has reviewed the licensee's submittal and has evaluated the proposed snubber TS against the TER comparison. The licensee's proposed TS have been modified and are in substantial agreement with the model STS and the TER proposed resolutions. The proposed TS have clarified and increased snubber surveillance, defined testing and acceptance criteria, included mechanical snubbers, eliminated the inappropriate seal material approval, and included a service life monitoring program. Specifics of this evaluation are addressed below.

3.1 VISUAL INSPECTIONS ACCEPTANCE CRITERIA

The licensee's letter of January 18, 1984 provided an acceptable justification for not specifically identifying in their proposed TS, an open fluid port, as cause for declaring a snubber inoperable. The licensee's surveillance procedure SP2733A does identify an open fluid port as a cause for declaring a snubber inoperable, which satisfies the STS intent. Therefore the licensee's TS position is acceptable.

3.2 MECHANICAL SNUBBER FUNCTIONAL TEST ACCEPTANCE CRITERIA

The licensee's TS contain the provision that functional test acceptance criteria for mechanical snubbers shall become effective upon installation of snubber testing equipment but not later than June 30, 1985. The NRC staff realized that the addition of mechanical snubbers to the revised STS could cause some delay due to the need to obtain and install test equipment. Based on this recognized need and because the licensee has committed to interim stroke testing to verify freedom of motion over the full snubber

stroke range of tension and compression, the staff finds the licensee's request for delay to be acceptable.

3.3 STEAM GENERATOR HYDRAULIC SNUBBERS

The licensee's proposed TS 4.7.8.1c contains an alternative to testing the steam generator hydraulic snubbers as part of the 10% representative test sample. The licensee advises that these 16 snubbers are 50,000 lb or greater in capacity and shall be tested and refurbished in accordance with the preventive maintenance program based on the manufacturer's recommendations. The licensee's proposed TS contain the provision that all steam generator hydraulic snubbers shall be tested and refurbished every seven years or less in accordance with the preventive maintenance program based on the manufacturer's recommendations, in lieu of the functional test requirements of this specification. This testing and refurbishment meets the STS intent of operability assurance of large size snubbers. Additionally the testing period is not less conservative in that all 16 will be tested each seven years or less as opposed to a 10% sample that may only test 8 in seven years. Therefore, the staff finds the licensee's position acceptable.

3.4 ENGINEERING EVALUATION TO DECLARE AFFECTED SYSTEM OPERABLE

The licensee's proposed TS Table 3.7-1a and 3.7-1b footnote contains an alternative provision that 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 prior to or during the next scheduled refueling. The staff finds the alternative engineering evaluation that documents there will be no adverse effects on safety for the system with the specific inoperable snubber to be acceptable and in addition the licensee's prompt notice provides the staff opportunity to review the licensee's action.

3.5 TS SNUBBER TABLE ADDITIONS AND DELETIONS

The licensee's proposed snubber TS Tables 3.7-1a and 3.7-1b contain the provision for deletions from the tables and the requirement that, at least 15 days prior to any deletion, a special report shall be submitted to the Commission evaluating the safety significance of the proposed snubber removal. This licensee's provision is similar to recently approved NTOL TS provisions for snubber deletions and the licensee's requirement to submit a special report within 15 days with a safety significance evaluation prior to deletion of any listed snubber provides the staff opportunity to review the licensee action. Therefore, the staff finds the licensee's provision acceptable.

3.6 TS SNUBBER TABLE CONTENTS

The licensee has proposed additions and corrections to TS Tables 3.7-1a and 3.7-1b listing of safety related snubbers. Table 3.7-1b is a new table containing mechanical snubbers. The licensee also has deleted non-safety related hydraulic snubbers, and has made corrections where three mechanical snubbers were inadvertently included with hydraulic snubbers. The staff has reviewed the proposed TS snubber table revisions and concludes that these revisions improve the level of plant safety, and therefore the table revisions are acceptable.

4. ENVIRONMENTAL CONSIDERATION

We have determined that the license amendment meets the eligibility criteria for categorical exclusion pursuant to 10 CFR §51.22(c)(9) and that pursuant to 10 CFR §51.22(b) no environmental impact statement or environmental assessment need be prepared. In reaching this determination, we have concluded that the amendment involves no significant hazards consideration; the amendment involves no significant change in types or significant increase in the amounts of any effluents that may be released offsite; and there is no significant increase in individual or cumulative occupational radiation exposure.

5. CONCLUSION

We have concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner; and (2) such activities will be conducted in compliance with the Commission's regulations and the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

Date: August 2, 1984

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Attachment: LLNL Technical
Evaluation Report

Attachment to SER

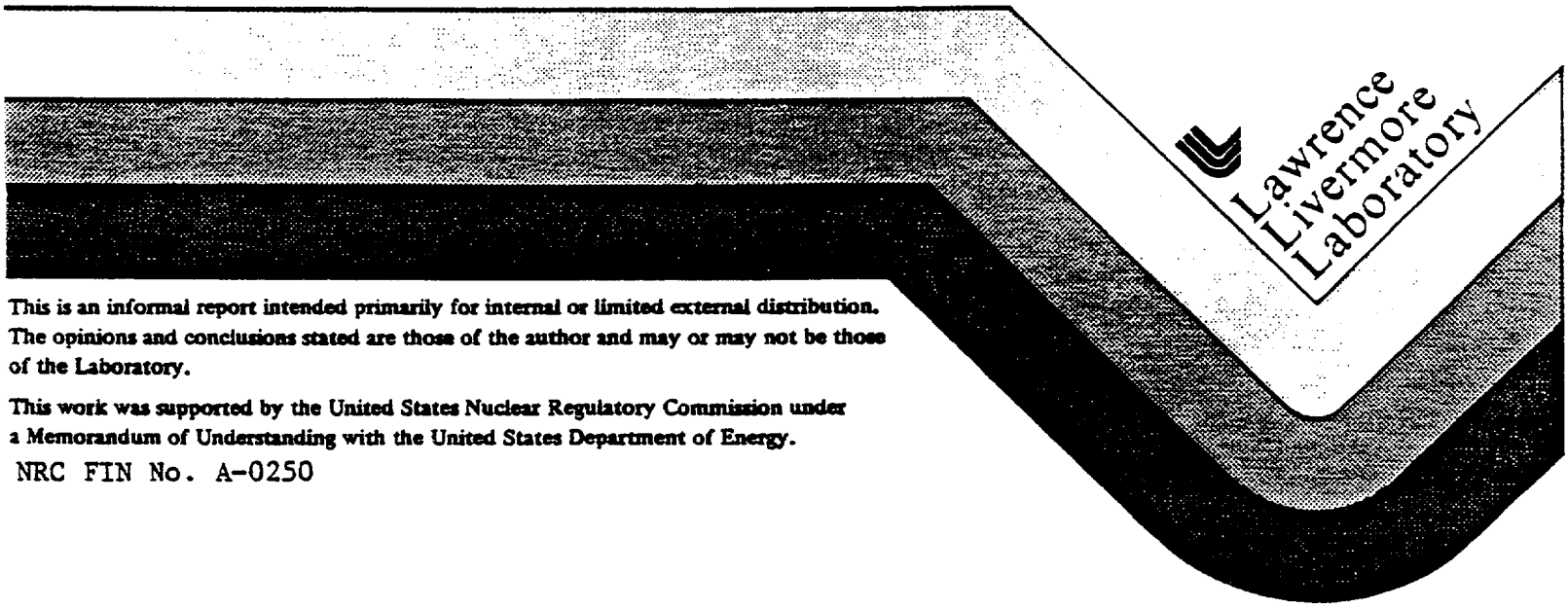
UCID- 19718

TECHNICAL EVALUATION REPORT ON THE PROPOSED TECHNICAL SPECIFICATION CHANGES FOR THE INSERVICE SURVEILLANCE OF SAFETY-RELATED HYDRAULIC AND MECHANICAL SNUBBERS AT THE MILLSTONE NUCLEAR POWER STATION, UNIT 2

(Docket No. 50-336)

James C. Selan

August 18, 1983



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ABSTRACT

This report documents the technical evaluation of the proposed Technical Specification changes to Limiting Conditions for Operation, Surveillance Requirements and Bases for safety-related hydraulic and mechanical snubbers at the Millstone Nuclear Power Station, Unit 2. The evaluation is to determine whether the proposed Technical Specifications are in conformance with the model Standard Technical Specification set forth by the NRC. A check list, Appendix A of this report, compares the licensee's submittal with the NRC requirements and includes 'Proposed Resolution' of the 'Deviations'. The licensee's proposed Technical Specification changes, when modified to complete each Appendix A 'Proposed Resolution' in a manner acceptable to the NRC staff, will either provide conformance to the Standard Technical Specifications and recently approved TS for Near Term Operating Licensees or will provide justification for the deviations.

FOREWORD

This report is supplied as part of the Selected Operating Reactor Issues Program II being conducted for the U. S. Nuclear Regulatory Commission, through the Office of Nuclear Reactor Regulation, Division of Licensing, for NRC Region I, by Lawrence Livermore National Laboratory.

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TABLE OF CONTENTS

		Page
1.	INTRODUCTION	1
2.	REVIEW BASIS CRITERIA	2
3.	EVALUATION	2
4.	CONCLUSION	3
	REFERENCES	4
	APPENDIX A	5

TECHNICAL EVALUATION REPORT ON THE PROPOSED TECHNICAL SPECIFICATION CHANGES FOR THE INSERVICE SURVEILLANCE OF SAFETY-RELATED HYDRAULIC AND MECHANICAL SNUBBERS AT THE MILLSTONE NUCLEAR POWER STATION, UNIT 2

(Docket No. 50-336)

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1. INTRODUCTION

The operability of snubbers is required to provide assurance 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. The operability is verified by an inservice inspection and testing program specified in the plant's Technical Specifications (TS). Recent operating experience has indicated the need for changes, clarifications, and improvements in the inservice surveillance requirements for hydraulic snubbers and to include similar requirements for mechanical snubbers.

By letter dated November 20, 1980 [Ref. 1], the NRC requested that all power reactor licensees (except SEP licensees) incorporate the revised model NRC Standard Technical Specifications (STS) into the plant specific TS for hydraulic and mechanical snubbers. A similar request was sent to the SEP licensees in a letter dated March 23, 1981 [Ref. 1].

The NRC model STS requires that a visual inspection frequency be based upon maintaining a constant level of snubber protection to the safety-related systems. Additionally, in order to provide assurance that the hydraulic and mechanical snubbers function reliably, a representative sample of the plant's installed snubbers will be functionally tested at least once per 18 months during plant shutdowns. The required sampling provides a confidence level of 95% that 90% of the plant specific snubbers will be operable within acceptable limits.

By a letter dated July 15, 1981 [Ref. 2], Northeast Nuclear Energy Company (NNECO), the licensee, submitted proposed TS changes to incorporate an inservice inspection and testing program for the safety-related hydraulic and mechanical snubbers at the Millstone Nuclear Power Station, Unit 2. These proposed changes to the TS Limiting Conditions for Operation (LCO), Surveillance Requirements, and Bases were discussed during an NRC/licensee meeting on June 23, 1983 [Ref. 3].

The purpose of this report is to evaluate the proposed TS changes with respect to the review basis criteria to determine that they meet the NRC requirements.

2. REVIEW BASIS CRITERIA

The review criteria that were applied in determining the acceptablility of the inservice surveillance requirements for the operability of the safety-related snubbers are contained in the following:

(1) Generic letter from D. G. Eisenhut to all Power Reactor Licensees (except SEP licensees) dated November 20, 1980, with enclosed Standard Technical Specifications (STS) Snubber Surveillance Requirements. (Criteria also applicable to SEP Licensees based on March 23, 1981 NRC letter.) [Ref. 1].

(2) Technical Specifications and Bases for Snubbers as incorporated in the McGuire Units 1 and 2 and Byron Unit 1 plant Technical Specifications: TS 3/4.7.8 [Ref. 4].

(3) NRC memorandum, L. Engle (Lead PM) to G. C. Lainas, AD/OR, DL, "General Guidance (Region I thru V) for MPA Items B-17 and B-22, Hydraulic and Mechancial Snubbers, Respectively, for Technical Specification Surveillance Requirements," dated March 2, 1983 [Ref. 5].

3. EVALUATION

The NRC generic letter [Ref. 1] STS enclosure stated the requirements that were to be incorporated in the plant's TS. The STS was reviewed and a check list of STS requirements was developed and is presented in Appendix A.

Appendix A was used as a check list for the data comparison of the licensee's proposed TS to the NRC model STS. The check list describes the requirements with a 'YES' or 'NO' column that is marked to indicate conformance or nonconformance. When a 'NO' is marked, the 'Deviation and Resolution,' or 'Proposed Resolution' is described. A 'Resolution' requires no further licensee action and provides the explanation. A 'Proposed Resolution' requires further licensee action and describes the action needed to resolve the deviation. Also found in the check list are 'Remarks' which are used for additional clarification. These items were discussed during the NRC/licensee meeting [Ref. 3].

During the meeting, the NRC staff representative explained how the licensee could either provide conformance to the STS by revising the proposed TS or provide an acceptable justification for the deviation. During the discussion there were instances where the licensee's representatives agreed to revise the proposed TS changes, or desired to review the TS to see how conformance could be obtained, or desired not to modify the TS. In all cases the 'Proposed Resolution' contains the NRC described dual option to modify the TS to be

consistent with the STS or to provide justification for the deviation even if not explicitly stated. Also, in each of these cases a 'Proposed Resolution' is identified, and a written resubmittal is required from the licensee.

Completion of each 'Proposed Resolution', in a manner acceptable to the NRC staff, will either bring the plant's TS for snubbers into conformance with the STS and recently approved TS for Near Term Operating Licensees (NTOLs) or will provide justification for the deviations. The proposed LCOs will then contain the correct identification of snubbers required to be operable, applicable modes of operability, and action with one or more snubbers inoperable. The proposed Surveillance Requirements will then contain an augmented inservice inspection program which includes scheduled visual inspections and functional testing of a representative sample.

4. CONCLUSION

Based on the information submitted by NNECO for the Millstone Nuclear Power Station, Unit 2, it is concluded that the proposed TS for snubbers, when modified to complete each Appendix A 'Proposed Resolution' in a manner acceptable to the NRC staff, will either provide conformance to the STS and recently approved TS for NTOLs or will provide justification for for the deviations.

REFERENCES

1. NRC ltr. (D. G. Eisenhut) to all power reactor licensees (except SEP licensees), dated November 20, 1980 and NRC letter (D. G. Eisenhut) to all SEP licensees, dated March 23, 1981.

2. NNECO ltr. (W. G. Counsil) to the NRC (R. A. Clark), dated July 15, 1981.

3. Meeting of June 23, 1983; P. Quinlan, S. Stadnick, M. Cass, and C. Gladding of NNECO, H. Gregg and D. Haverkamp of NRC Region I, and J. Selan and R. White of LLNL.

4. Technical Specifications and bases for snubbers as incorporated in the McGuire Units 1 and 2 and Byron Unit 1 plant Technical Specifications (3/4.7.8).

5. NRC memorandum, Leon B. Engle to Gus C. Lainas, dated March 2, 1983.

APPENDIX A

SNUBBER SURVEILLANCE
MILLSTONE, UNIT 2

Data Comparison of Licensee Proposed TS Versus NRC Model STS

REFERENCE:

(1) NNECO ltr. (W. G. Counsil) to the NRC (R. A. Clark), dated July 15, 1981.

(2) Meeting of June 23, 1983; P. Quinlan, S. Stadnick, M. Cass, and C. Gladding of NNECO, H. Gregg and D. Haverkamp of NRC Region I, and J. Selan and R. White of LLNL.

		YES	NO
I.	LCOs		
A.	All snubbers listed required to be operable	X	
B.	Mechanical/hydraulic types designated in separate tables	X	
C.	Modes of applicability include modes 1-4 (and modes 5, cold shutdown and 6, refueling)	X (See Remarks	

Remarks: The licensee's proposed method of identifying modes of applicability (in the snubber tables) meet the STS requirement.

D.	Inoperable snubbers replaced or operability restored within 72 hours and	X (See Remarks	

Remarks The licensee's proposed method of presenting action statements (in the snubber tables) meets the STS requirement.

E.	Engineering evaluation on the supported components within 72 hours or		X

Deviation: The licensee's proposed TS 3.7.8.1 Action Statements (as shown in Tables 3.7-1a and 3.7-1b) do not conform to the STS action requirements.

Proposed Resolution: Revise the proposed TS to be consistent with the STS or provide justification for the deviation.

	YES	NO
F. Follow appropriate action statements for the supported system	X	
G. Snubbers may be added to the table without prior license amendment request etc. (as in STS table footnotes)		X

Deviation: The licensee's proposed TS table footnote includes the option to delete snubbers.

Proposed Resolution: Change the TS wording to include wording similar to recently approved TS for NTOLs (e.g. McGuire and Byron) and provide appropriate justification.

H. Modifications to the table in high radiation zone column can be made without prior license amendment request etc. (as in STS table footnotes)		X

Deviation: The licensee's proposed wording is not consistent with STS wording.

Proposed Resolution: Change the TS wording to the STS wording for modification of the high radiation zone column in the tables [Ref. 2].

I. SURVEILLANCE REQUIREMENTS			
A. Each snubber demonstrated operable by an augmented inservice inspection program and	X		
B. The requirements of Specification 4.0.5 or equivalent are referenced	X		
C. Visual Inspection			
1. First inspection interval defined (not applicable for reactors in operation > 2 yrs)		N/A	
2. Second interval defined (12 months ± 25%) if less than two found inoperable in first interval (not applicable for reactors in operation > 2 yrs)		N/A	
3. Subsequent inspection intervals defined	X		
4. Inspection intervals not lengthened more than one step at a time.	X		
5. Snubbers categorized into accessible/inaccessible groups and inspected independently	X		

	YES	NO
D. Visual inspection acceptance criteria		
1. No visible indication of damage/impaired operability	____	X
Deviation: The licensee's proposed TS 4.7.8.1.b is not per the STS.		
Proposed Resolution: Use wording similar to the STS or provide justification for the deviation [Ref. 2].		
2. Attachments secure	____	X
Deviation: Same as II.D.1 above		
Proposed Resolution: Same as II.D.1 above		
3. Manual inducement for freedom of movement	____	X
Deviation: The licensee's proposed TS 4.7.8.1.b does not include provisions per the STS for manually checking freedom of movement.		
Proposed Resolution: Incorporate wording similar to recently approved TS on NTOLs (e.g. McGuire and Byron) [Ref. 2].		
4. Inoperable snubber determined operable, provided		
a. Cause of rejection is established & remedied for that snubber and others generically susceptible, and	____	X
Deviation: Same as II.D.1 above		
Proposed Resolution: Same as II.D.1 above.		
b. Functionally tested in as found condition and determined operable	____	X
Deviation: Same as II.D.1 above		
Proposed Resolution: Same as II.D.1 above		
5. Open fluid ports cause for inoperability	____	X
Deviation: The licensee's proposed TS 4.7.8.1.b, does not include the STS provision for declaring snubbers inoperable as a result of uncovered fluid ports.		
Proposed Resolution: Include wording similar to recently approved TS on NTOLs (e.g. McGuire and Byron) [Ref. 2].		
6. Common fluid reservoirs addressed for inoperability (not applicable if common reservoir not used)	X	____

		YES	NO
E.	Functional Tests		
1.	Once per 18 months during plant shutdown	X	
2.	10% of each type tested in place or in a bench test	X	
3.	10% additional of that type for each snubber failing test	X	
4.	25% of sample selected from the 3 defined areas		X

Deviation: The licensee's proposed TS 4.7.8.1.c does not include the STS provision for the sample to include 25% from the three specific areas.

Resolution: The licensee's position as stated in Ref. 1 is consistent with the intent of recently approved TS for NTOLs (e.g. McGuire and Byron) [Ref. 2].

5.	Snubbers identified as "especially difficult to remove" or in "high radiation zones during shutdown" and included in test samples		X

Deviation: The licensee's proposed TS 4.7.8.1.c does not include snubbers in these areas in the test sample.

Proposed Resolution: Change the wording to "include" these snubbers in the test sample [Ref. 2].

6.	Footnote statement regarding permanent or other exemptions . . . . may be granted, etc. included		X

Deviation: The licensee's proposed TS 4.7.8.1.c exemption wording is not consistent with the STS

Proposed Resolution: Delete the exemption wording in TS 4.7.8.1.c.

7.	Retesting of previous failed snubbers and replacements		X

Deviation: The licensee's proposed TS 4.7.8.1.c does not include the STS provisions for retesting previously failed snubbers and installed spares.

Resolution: The wording in the TS meets the intent of the STS and is consistent with recently approved TS on NTOLs (e.g. McGuire and Byron) [Ref. 2].

8.	Testing of all snubbers where any one failed and was determined generic	X	
9.	Inoperable snubbers require Engineering evaluation performed on supported components	X	

	YES	NO
F. Hydraulic snubbers functional test acceptance criteria		
1. Activation (restraining action) is achieved within specifications of velocity and acceleration in both compression/tension	X	
2. Snubber bleed rate within specified range	X	
3. Snubbers required to not displace are verified	N/A (See Remarks)	
Remarks: Licensee's representatives stated this type of snubber is not used [Refs. 1 and 2].		
G. Mechanical snubbers functional test acceptance criteria		
1. Force for free movement is < specified max drag force. Drag force has not increased >50%		X
Deviation: The licensee's proposed TS 4.7.8.1.e does not include the STS test acceptance criteria.		
Proposed Resolution: Request an interim exemption and provide additional clarification as to the date for implementing test procedures, procurement of test equipment, etc. Also include the STS requirements or those in recently approved TS for NTOLS when equipment and procedures are available [Ref. 2].		
2. Activation (restraining action) is achieved within specifications of velocity and acceleration in both compression/tension		X
Deviation: Same as II.G.1 above		
Proposed Resolution: Same as II.G.1 above		
3. Snubber release rate within specified range		X
Deviation: Same as II.G.1 above		
Proposed Resolution: Same as II.G.1 above		
4. Snubber required to not displace are verified		X
Deviation: Same as II.G.1 above		
Proposed Resolution: Same as II.G.1 above		

	YES	NO
H. Snubber service life monitoring		
1. Records of service life maintained	____	X

Deviation: The licensee's proposed TS 4.7.8.1.c does not include the STS service life monitoring program.

Proposed Resolution: Incorporate wording similar to recently approved TS for NTOLs (e.g. McGuire and Byron) for monitoring snubber seal life [Ref. 2].

II. BASES

A. Adequate explanation in bases	____	X

Deviation: The licensee's proposed TS 3.4.7.8 Bases are not consistent with the STS Bases.

Proposed Resolution: Revise the Bases to be consistent with the proposed LCO and surveillance requirement changes [Ref. 2].

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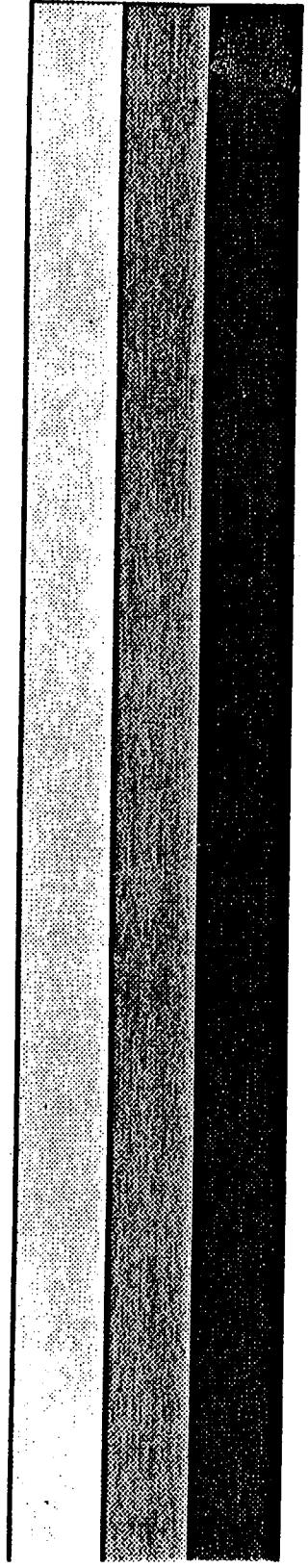
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