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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 101 TO FACILITY OPERATING LICENSE NO. DPR-44

AND AMENDMENT NO. 103 TO FACILITY OPERATING LICENSE NO. DPR-56

PHILADELPHIA ELECTRIC COMPANY
PUBLIC SERVICE ELECTRIC AND GAS COMPANY
DELMARVA POWER AND LIGHT COMPANY
ATLANTIC CITY ELECTRIC COMPANY

PEACH BOTTOM ATOMIC POWER STATION, UNITS NOS. 2 AND 3

DOCKETS NOS. 50-277 AND 50-278

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 (TSs).

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 March 24, 1981, the Philadelphia Electric Company (the licensee) submitted an application for license amendment and proposed TS changes for operability and surveillance requirements for snubbers. The licensee submitted subsequent revisions to the initial application by letters dated August 6, 1981, December 13, 1981, and June 22, 1983.

The initial review of the licensee's submittal was performed by the NRC staff and its contractor, Lawrence Livermore Laboratory (LLL). LLL prepared the attached Technical Evaluation Report (TER) No. UCID-19717 dated August 18, 1983, based on a comparison of the licensee's proposed TS with the STS and discussions with the licensee during the NRC/licensee meeting of June 21, 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 concludes that the licensee's proposed TS requires either additional modifications in order to conform to the STS or adequate justification for deviations is to be provided. The NRC staff has reviewed the TER and concurs with its basis and findings. By letter dated August 25, 1983, the NRC staff transmitted the TER to the licensee and requested a revised proposed TS be submitted.

3. Evaluation

By letter dated September 14, 1983, the licensee submitted updated 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 checklist. The staff has also evaluated the proposed TS Table listing changes.

3.1 TS for Operability and Surveillance Requirements for Snubbers

a) The licensee's letter of September 14, 1983, responded to a TER identified "Deviation/Proposed Resolution" and provided justification for the interim exemption provision of TS 4.11.D.4.a that functional test requirements for mechanical snubbers will not take effect until the first refueling outage commencing one year after NRC approval of this amendment. The justification is to provide adequate time for procurement of the appropriate testing equipment, and the development of procedures and test acceptance criteria.

The staff realized that the addition of mechanical snubbers to the revised STS would require adequate time to procure test equipment and develop test procedures. The requested interim exemption will provide the time needed for the effective implementation of these requirements. In addition, the staff has reviewed the snubber listing and has determined that the majority of snubbers are not the mechanical type and that a large number of the mechanical snubbers are new. Based on the above, the staff finds the licensee's request for the interim exemption to be acceptable.

b. For each of the other TER identified "Deviations/Proposed Resolutions," the licensee responded by modifying the proposed TS to conform to the STS and, therefore, the modifications are acceptable.

3.2 TS Table 3.11.D.1 Safety Related Shock Suppressors (Snubbers)

The licensee has proposed additions and corrections to the TS Table 3.11.D.1 listing of Safety Related Shock Suppressors (snubbers). The revisions reflect system modifications to bring the pipe support design into conformance with NUREG-0661, titled "Safety Evaluation Report Mark I Containments, Long Term Program". Mechanical snubbers were added to the Safety Relief Valve Discharge piping, Reactor Water Cleanup System Suction piping, and Core Spray System piping. The Table revisions also include replacing certain hydraulic snubbers with higher capacity mechanical snubbers or a rigid restraint, reformatting to identify hydraulic and mechanical snubbers, and correcting typographical errors.

By letter dated January 26, 1984, the licensee resubmitted Table 3.11.D.1 in a revised format appropriate for direct insertion into the Peach Bottom TS. This submittal did not in any way involve changes to the previous submittals, but rather was a compilation of all changes to the existing TS Table resulting from the numerous modifications submitted by the licensee in March 24, 1981, August 6, 1981, December 13, 1982, June 22, 1983 and September 14, 1983.

The staff has reviewed the proposed TS Table 3.11.D.1 revisions and concludes that these revisions improve the level of plant safety, and therefore, the Table revisions are acceptable.

4. Environmental Consideration

These amendments involve a change in the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. We have determined that the amendments involve no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that these amendments involve no significant hazards consideration and there has been no public comment on such finding. Accordingly, these amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of these amendments.

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 these amendments will not be inimical to the common defense and security or to the health and safety of the public.

Dated: July 2, 1984

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UCID- 19717

TECHNICAL EVALUATION REPORT ON THE PROPOSED TECHNICAL SPECIFICATION CHANGES FOR THE INSERVICE SURVEILLANCE OF SAFETY-RELATED HYDRAULIC AND MECHANICAL SNUBBERS AT THE PEACH BOTTOM ATOMIC POWER STATION, UNITS 2 AND 3

(Docket Nos. 50-277, 50-278)

James C. Selan

August 18, 1983

This work was supported by the United States Nuclear Regulatory Commission under a Memorandum of Understanding with the United States Department of Energy.
NRC FIN No. A-0250

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 Peach Bottom Atomic Power Station, Units 2 and 3. 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 Specification 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.

The U. S. Nuclear Regulatory Commission funded the work under the authorization entitled "Selected Operating Reactor Issues Program II," B&R 20 19 10 11 1, FIN No. A-0250.

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(Docket Nos. 50-277, 50-278)

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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 letters dated March 24, 1981 [Ref. 2], August 6, 1981 [Ref. 3], and December 13, 1982 [Ref. 4], Philadelphia Electric Company (PECO), the licensee, submitted proposed TS changes to incorporate an inservice inspection and testing program for the safety-related hydraulic and mechanical snubbers at the Peach Bottom Atomic Power Station, Units 2 and 3. These proposed changes to the TS Limiting Conditions for Operation (LCO), Surveillance Requirements, and Bases were discussed during an NRC/licensee meeting on June 21, 1983 [Ref. 5].

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. 6].

(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. 7].

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. 5].

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 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 PECO for the Peach Bottom Atomic Power Station, Units 2 and 3, 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 or will provide justification for the deviations.

REFERENCES

1. NRC letter (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. PECO ltr. (E. J. Bradley) to the NRC (H. R. Denton), dated March 24, 1981.

3. PECO ltr. (E. J. Bradley) to the NRC (H. R. Denton), dated August 6, 1981.

4. PECO ltr. (E. J. Bradley) to the NRC (H. R. Denton), dated December 13, 1982.

5. Meeting of June 21, 1983; W. Birely, W. Alden, and J. Nagle of PECO, H. Gregg and D. Haverkamp of NRC Region I, and J. Selan and R. White of LLNL.

6. 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).

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

APPENDIX A

SNUBBER SURVEILLANCE
PEACH BOTTOM, UNITS 2 AND 3

Data Comparison of Licensee Proposed TS Versus NRC Model STS

REFERENCES:

(1) PECO ltr. (E. J. Bradley) to the NRC (H. R. Denton), dated March 24, 1981.

(2) PECO ltr. (E. J. Bradley) to the NRC (H. R. Denton), dated August 6, 1981.

(3) PECO ltr. (E. J. Bradley) to the NRC (H. R. Denton), dated December 13, 1982.

(4) Meeting of June 21, 1983; W. Birely, W. Alden, and J. Nagle of PECO, 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

Deviation: The licensee's proposed TS Table 3.11.D.1 identifies both hydraulic and mechanical snubbers in a common table with an H or M designation.

Resolution: This meets the STS intent for identifying snubber types [Ref. 4].

C.	Modes of applicability include modes 1-4 (and modes 5, cold shutdown and 6, refueling)		X

Deviation: The licensee's proposed TS 3.11.D.1 does not include the cold shutdown and refueling modes of applicability per the STS.

Proposed Resolution: Change the TS to include the STS modes of applicability and delete TS 3.11.D.3 [Ref. 4].

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

Deviation: The licensee's proposed TS 3.11.D.2 for LCO action requirements were not stated per the STS.

Proposed Resolution: Change the TS to conform with the STS action requirements while maintaining the word structure consistent with the plant's existing TS word structure [Ref. 4].

		YES	NO
E.	Engineering evaluation on the supported components within 72 hours or	____	X
	Deviation: Same as I.D above		
	Proposed Resolution: Same as I.D above		
F.	Follow appropriate action statements for the supported system	____	X
	Deviation: Same as I.D above		
	Proposed Resolution: Same as I.D above		
G.	Snubbers may be added to the table without prior license amendment request etc. (as in STS table footnotes)	X	____
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 TS do not include the STS provision for modifying the table for snubbers listed in "High Radiation Zones During Shutdown."		
	Resolution: The licensee does not specifically list snubbers in "High Radiation Zones During Shutdown," therefore this provision is not needed (see also II.E.5) [Ref. 4].		
II.	SURVEILLANCE REQUIREMENTS		
A.	Each snubber demonstrated operable by an augmented inservice inspection program and	____	X
	Deviation: The licensee's proposed TS 4.11.D does not include the general STS statement for an augmented inservice inspection program.		
	Proposed Resolution: Include the appropriate STS statement and reference existing inservice surveillance requirement TS 4.6.G.		
B.	The requirements of Specification 4.0.5 or equivalent are referenced	____	X
	Deviation: Same as II.A above		
	Proposed Resolution: Same as II.A above		

	YES	NO
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
Deviation: The licensee's proposed TS 4.11.D.1 does not contain the STS statement "provisions of Specification 4.0.2 are not applicable" with respect to the inspection interval schedule.		
Proposed Resolution: Provide an equivalent statement which references TS 1.0 DEFINITIONS [Ref. 4].		
4. Inspection intervals not lengthened more than one step at a time	X	____
5. Snubbers categorized into accessible/inaccessible groups and inspected independently	X	____
D. Visual inspection acceptance criteria		
1. No visible indication of damage/impaired operability	X	____
2. Attachments secure	X	____
3. Manual inducement for freedom of movement	X	____
4. Inoperable snubber determined operable, provided		
a. Cause of rejection is established & remedied for that snubber and others generically susceptible, and	X	____
b. Functionally tested in as found condition and determined operable	X	____
5. Open fluid ports cause for inoperability	X	____
6. Common fluid reservoirs addressed for inoperability (not applicable if common reservoir not used)	____ N/A	____

	YES	NO
E. Functional Tests		
1. Once per 18 months during plant shutdown	____	X
Deviation: The licensee's proposed TS 4.11.D.4.a states "once each refueling cycle". Also, TS 4.11.D.4.a proposes an interim delay in mechanical snubber testing.		
Proposed Resolution: Change the surveillance frequency to "once each operating cycle during shutdown" which meets the STS requirement. Also, revise the time extension and provide an appropriate basis for the deferral of the mechanical snubber tests [Ref. 4].		
2. 10% of each type tested in place or in a bench test	____	X
Deviation: The licensee's proposed TS 4.11.D.4.e exempts testing of snubbers of > 50,000 lb. capacity.		
Proposed Resolution: Delete TS 4.11.D.4.e [Ref. 4].		
3. 10% additional of that type for each snubber failing test	X	____
4. 25% of sample selected from the 3 defined areas	X	____
5. Snubbers identified as "especially difficult to remove" or in "high radiation zones during shutdown" and included in test samples	X (See Remarks)	
Remarks: Snubbers are not specifically designated "yes" or "no" in the high radiation zone column of the table, but TS 4.11.D.4.d states that snubbers in both high radiation zone and difficult to remove shall be included in the test sample [Ref. 4].		
6. Footnote statement regarding permanent or other exemptions . . . . may be granted, etc. included	____	X
Deviation: The licensee's proposed TS does not include the STS footnote statement addressing exemptions.		
Resolution: TS 4.11.D.4.d does include provisions for addressing snubber exemptions, therefore, the footnote statement is not required [Ref. 4].		
7. Retesting of previous failed snubbers and replacements	X	____
8. Testing of all snubbers where any one failed and was determined generic	X	____

	YES	NO
9. Inoperable snubbers require Engineering evaluation performed on supported components	X	
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	X	
G. Mechanical snubbers functional test acceptance criteria		
1. Force for free movement is < specified max drag force. Drag force has not increased >50%	X	
2. Activation (restraining action) is achieved within specifications of velocity and acceleration in both compression/tension	X	
3. Snubber release rate within specified range	X	
4. Snubbers required to not displace are verified	X	
H. Snubber service life monitoring		
1. Records of service life maintained		X

Deviation: The licensee's proposed TS do not include a service life monitoring program.

Proposed Resolution: Include a service life monitoring program consistent with the STS requirements [Ref. 4].

III. BASES

A. Adequate explanation in Bases		X

Deviation: The licensee's proposed TS 3.11.D 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. 4].

DISCLAIMER

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