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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 63 TO LICENSE NO. DPR-13

SOUTHERN CALIFORNIA EDISON COMPANY

SAN DIEGO GAS & ELECTRIC COMPANY

SAN ONOFRE UNIT NO. 1

DOCKET NO. 50-206

INSERVICE SURVEILLANCE OF SAFETY-RELATED SNUBBERS

1.0 INTRODUCTION

To reflect accumulated experience obtained from operating plants in the past several years, NRC issued Revision 1 of the Standard Technical Specification on the surveillance requirements for safety-related snubbers. On November 20, 1980, this document was transmitted to operating plants excluding those under SEP along with a request for submittal of appropriate license amendments to incorporate the requirements of this revision within 120 days. The same request was extended to SEP plants on March 23, 1981.

2.0 BACKGROUND AND DISCUSSION

Numerous discoveries of inoperative snubbers in the period of 1973 to 1975 resulted in their surveillance requirements in the Technical Specifications for operating reactor plants. However, several deficiencies were identified after the original requirements were in effect for several years. These deficiencies are:

1. Mechanical snubbers were not included in these requirements.

2. The rated capacity of snubbers was used as a limit to the inservice test requirement.

3. NRC approval was necessary for the acceptance of seal materials.

4. Inservice test requirements were not clearly defined.

5. In-place inservice testing was not permitted.

Since mechanical snubbers were not subject to any surveillance requirements, some licensees and permit holders believed that mechanical snubbers were preferred by the NRC. Many plants used mechanical snubbers as original equipment and many others requested to replace their hydraulic snubbers with mechanical ones to simplify or avoid an inservice surveillance program. This is directly contradictory to the NRC's intention, where for an unsurveyed mechanical snubber, the most likely failure is permanent lock-up. This failure mode can be harmful to the system during normal plant operations.

During the period of 1973-1975, when the first hydraulic snubber surveillance requirements in the Technical Specifications were drafted, a compromise was made to limit the testing of snubbers to those with rated capacity of not more than 50,000 lbs. This is because of the available capacity of the test equipment and the requirement to test some parameters at the snubber rated load. Since then, a greater equipment capacity and a better understanding of parametric correlation were both developed. To maintain this arbitrary 50,000 lb. limit could mean an unnecessary compromise in plant safety.

The original hydraulic snubber problem was due to leaking seals. Most seal materials of the 1973 vintage could not withstand the temperature and irradiation environments. Ethylene propylene was the first material that could offer a reasonable service life for those seals. In order to discourage the use of unproven material for those seals, the words "NRC approved material" were used in the Technical Specifications. Staff members were asked to approve different seal materials on many occasions. Consequently, since the basis for the approval was not defined, the development of better seal materials by the industry was actually discouraged.

The not-well-defined acceptance criteria in the earlier version of the testing requirements resulted in non-uniform interpretations and implementation. Acceptance criteria were set individually at widely different ranges. Since the rationale of adopting specific acceptance criteria was not clear, I&E inspectors found it impossible to make any necessary corrections. In some cases, snubbers were tested without reference to acceptance criteria.

Testing of snubbers was usually accomplished by removing snubbers from their installed positions, mounting them on a testing rig, conducting the test, removing them from rig, and reinstalling them to the working position. Many snubbers were damaged in the removing and reinstallation process. This defeated the purpose for conducting tests. Since methods and equipment have been developed to conduct in-place tests on snubbers, taking advantage of these developments could result in minimizing the damage to snubbers caused by removal and reinstallation plus time and cost savings to the plants.

From these short-comings it was concluded that the snubber surveillance requirements for the Technical Specifications should be revised.

The revised surveillance requirements contained in Revision 1 of the Standard Technical Specifications provided to the licensee for guidance correct these deficiencies in the following manner:

1. Mechanical snubbers are now included in the surveillance program.

2. No arbitrary snubber capacity is used as a limit to the inservice test requirements.

3. Seal material no longer requires NRC approval. A monitoring program shall be implemented to assure that snubbers are functioning within their service life.

4. Clearly defined inservice test requirements for snubbers shall be implemented.

5. In-place inservice testing shall be permitted.

3.0 EVALUATION

The current Revision 4 (and the proceeding Revisions 2 and 3) of the Standard Technical Specifications contain no substantive changes to the applicable sections of Revision 1 previously provided to the licensee as guidance. By letter dated December 24, 1981, the licensee proposed modifications to the San Onofre Unit No. 1 Technical Specifications with regard to surveillance of hydraulic and mechanical snubbers substantially in conformance to Revision 1 of the Standard Technical Specifications. In response to a concern raised by the NRC staff, the licensee informed the NRC by letter dated June 10, 1982 that it will (1) obtain an instrument designed to make in-situ measurements of mechanical snubbers, and (2) modify the acceptance criteria of the December 24, 1981 proposed Technical Specifications in accordance with the provisions of the NRC letter of March 23, 1981. The licenseestated that is is expected that the instrument will be procured and personnel trained so that tests with the new instrument can be implemented during the 1983 refueling outage. Based on our review, we find that this commitment is acceptable. In the interim until the new instrument is procured and placed in service, we find that the licensee's proposed technical specification regarding functional test acceptance criteria for mechanical snubbers is acceptable. We have requested the licensee to submit a revised technical specification prior to placing the new instrument in service. Based on our review, we find that the licensee has incorporated all other necessary requirements of the Standard Technical Specifications for the surveillance of Safety-related snubbers in its proposed technical specifications. We conclude that the proposed Technical Specifications are acceptable.

4.0 ENVIRONMENTAL CONSIDERATION

We have determined that the amendment does not authorize a change in effluent types or total amounts nor an increase in power level and will not result in any significant environmental impact. Having made this determination, we have further concluded that the amendment involves an action which is insignificant from the standpoint of environmental impact and, pursuant to 10 CFR §51.5(d)(4), that an environmental impact statement or negative declaration and enviromental impact appraisal need not be prepared in connection with the issuance of this amendment.

5.0 CONCLUSION

We also conclude, based on the considerations discussed above, that: (1) because the amendment does not involve a significant increase in the probability or consequences of accidents previously considered, does not involve a significant decrease in a safety margin, and does not create the possibility of an accident of a type different from any evaluated previously, the amendment does not involve a significant hazards consideration; (2) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner; and (3) 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 the health and safety of the public.

6.0 ACKNOWLEDGEMENT

The following individuals contributed to this evaluation:

W. Paulson
H. Shaw

Dated: September 8, 1982