



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 79 TO FACILITY OPERATING LICENSE NO. DPR-32  
AND AMENDMENT NO. 80 TO FACILITY OPERATING LICENSE NO. DPR-37

VIRGINIA ELECTRIC AND POWER COMPANY  
SURRY POWER STATION, UNIT NOS. 1 AND 2  
DOCKET NOS. 50-280 AND 50-281

Introduction

To reflect accumulated experience obtained from operating plants in the past several years, NRC issued Revision 1 of the Standard Technical Specifications 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. Virginia Electric and Power Company (the licensee) responded to our request with submittals dated April 28, 1981, May 24, 1982, and July 7, 1982, which supplemented an application dated September 20, 1978. These amendments revise the Technical Specifications for Surry Power Station, Unit Nos. 1 and 2.

Description 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 force 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 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 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, greater equipment capacity and better understanding of parametric correlation both developed. To maintain this arbitrary 50,000 lb. limit could mean an unnecessary compromise on plant safety.

The original hydraulic snubber problem started from 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 a 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 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.

The licensee has responded in the following manner:

1. Mechanical snubbers have been included in the surveillance program.
2. The arbitrary 50 KIP limit has been removed from inservice test requirements.
3. A service record will be kept for all snubbers.
4. Quantitative testing procedures will be used.
5. The use of in-place testing as an alternative method to bench test for the surveillance of snubbers has been proposed.

The proposed license amendment submitted by the licensee for operating license DPR-32 and DPR-37 for Surry Nuclear Plant Units 1 and 2 has incorporated the necessary requirements in Revision 1 of the Standard Technical Specifications for the surveillance of safety-related snubbers and is therefore, acceptable. Some changes were made to the proposed Technical Specifications with the licensee's concurrence.

Environmental Consideration

We have determined that the amendments do 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 amendments involve 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 environmental impact appraisal need not be prepared in connection with the issuance of these amendments.

Conclusion

We have concluded, based on the considerations discussed above, that: (1) because the amendments do not involve a significant increase in the probability or consequences of an accident previously evaluated, do not create the possibility of an accident of a type different from any evaluated previously, and do not involve a significant reduction in a margin of safety, the amendments do 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 the amendments will not be inimical to the common defense and security or to the health and safety of the public.

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