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

SAFETY EVALUATION REPORT

SEQUOYAH NUCLEAR PLANT UNITS 1 AND 2

DOCKET NOS. 50-327 AND 50-328

RELIEF REQUEST - ASME CODE SECTION XI REQUIREMENTS

I. INTRODUCTION

Section XI of the ASME Boiler and Pressure Vessel Code requires that pressure-boundary components be subjected to nondestructive examinations and pressure tests after modification or repair. By letter dated September 18, 1984, the Tennessee Valley Authority (the licensee) requested relief from hydrostatic test pressure requirements following elimination of feedwater drain valves 3-512, 3-513, 3-516, 3-517, 3-521, 3-524, and 3-525, and capping the lines associated with these valves. Information supporting the request was also provided in the letter. Pursuant to 10 CFR 50.55a(g)(6)(i), this information was evaluated to determine if the necessary findings can be made to grant relief as requested.

II. RELIEF REQUEST EVALUATION

Relief from the hydrostatic test requirements of the 1980 Edition through Winter 1981 Addenda of Section XI for Class 2 Components was requested following removal of feedwater drain valves 3-512, 3-516, 3-513, 3-517, 3-520, 3-521, 3-524, and 3-525 and capping the lines associated with these valves.

CODE REQUIREMENT

The system hydrostatic test pressure shall be at least 1.25 times the system pressure P_{sy}, where P_{sy} is the lowest pressure setting among the number of safety or relief valves provided for overpressure protection within the boundary of the system to be tested. The system test temperature during a hydrostatic test in systems containing ferritic steel components shall meet the requirements specified by fracture prevention criteria.

LICENSEE BASIS FOR REQUESTING RELIEF

To accomplish the hydrostatic pressure test would require flooding the secondary side of each steam generator along with the 32-inch main steam lines to the outboard isolation valves. The main steam safety and power-operated relief valves would also require gagging to perform the test. The number of secondary side hydrostatic pressure tests allowed by the plant Technical Specifications (Section 5.7, Table 5.7.1) is 5. This does not allow for hydrostatic pressure tests other than the normally

scheduled ones. It is the licensee's opinion that a significant increase in safety would not result from the hydrostatic pressure test over the alternate inspection proposed below.

ALTERNATE INSPECTION PROPOSED

In addition to the construction code (B31.7, 1969 Edition, Summer 1970 Addenda) surface examination of the welds, an in-service leak check of the subject welds will be performed at operating pressure during startup from the outage in which the replacement is made. The regularly scheduled system hydrostatic pressure test will be performed in 1989-1990 for Unit 1 and 1990-1991 for Unit 2.

III. STAFF EVALUATION AND CONCLUSIONS

The modification of the feedwater systems at Sequoyah Units 1 and 2 consists of the removal of 1½-inch feedwater drain valves and capping the associated lines. This modification will eliminate sources of known leakage. The welds made in capping the 1½-inch lines are required to be hydrostatically pressure tested to 1.25 times the lowest setting of the relief or safety valves in the system. However, the welds are located such that isolation from the steam generators' shells and main steam lines cannot readily be accomplished. To impose the requirement on the licensee would not serve to increase significantly the safety of the plant above that provided by the alternative examinations and tests of the welds to which the licensee has committed.

Considering (1) the number of design pressure cycles (5) allowed for the secondary side of the Sequoyah Units 1 & 2, (2) the hardships encountered versus the increase in plant safety if the hydrostatic test pressure requirements were imposed, (3) the compatible materials being welded, (4) the size of the drain lines, and (5) the surface examination and inservice leak test to which the welds will be subjected, the staff finds the requirement impractical to perform and that the alternative test and examinations are adequate to determine the structural integrity of the welds. The staff further concludes that such relief is authorized by law, will not endanger life or property or the common defense and security and is otherwise in the public interest giving due consideration to the burden upon the licensee if such relief were not granted. The staff, therefore, concludes that relief from the hydrostatic test pressure requirements may be granted as requested.

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

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Dated: October 15, 1984