

SAFETY EVALUATION REPORT

FORT CALHOUN STATION

REQUEST FOR APPROVAL TO USE ASME CODE CASE

N-307 TO INSPECT REACTOR VESSEL STUDS

Relief Request

The licensee, in his August 26, 1981 submittal, has requested Commission approval to use ASME Code Case N-307, "Revised Ultrasonic Examination Volume for Class 1 Bolting, Examination Category B-G-1, Section XI, Division 1, When the Examination is Conducted from the Center-Drilled Hole," to inspect the reactor vessel studs. Code Case N-307 permits partial volumetric examination of a cylindrical region of 1/4-inch in depth measured from the thread root instead of 100% examination volume required by the applicable edition and addenda of the Section XI Code.

Code Requirements

Section XI currently requires volumetric examination of 100% of the volume of the stud when it is inspected in place or volumetric examination of 100% of the volume of the stud plus surface examination of the stud when it is removed. All studs shall be inspected once in 10 years.

Licensee's Basis for the Request

Even using various combinations of the Code Section V ultrasonic method of using 0-degree straight beam applied to both ends of the stud and the Southwest Research Institute method of a 60-degree angle beam from the access hole, total code compliance still could not be accomplished. In addition, an end-drilled hole of 3/8-inch diameter by 3-inch deep, flat-bottomed, plugged, to the existing stud calibration blocks would be required.

Staff's Evaluation and Conclusion

The staff agrees with the licensee that complete and meaningful ultrasonic scanning of 100% of the volume of the stud cannot be accomplished at present. Since the most likely location for crack initiation will be in the cylindrical region near the thread root area which is the examination volume specified by Code Case N-307, we conclude that scanning of the specified cylindrical region by ultrasonic method coupled with the code-required surface examination will be able to detect any significant cracks and thus ensure the integrity of the vessel studs. We therefore find that the use of Code Case N-307 to satisfy the code-required vessel stud inspection is acceptable.

Based on the foregoing, we conclude, pursuant to 10 CFR §50.55a(g)(6)(i), that granting of this relief is authorized by law and will not endanger life or property, or the common defense and security, and is otherwise in the public interest. In making this determination, we have given due consideration to the burden that would result if the Code requirements were imposed on the facility, and conclude that relief should be granted:

Date: October 8, 1981