

ENCLOSURE

WATTS BAR NUCLEAR PLANT UNITS 1 AND 2
GROUTED ANCHOR BOLTS ON MAIN STEAM LINE SUPPORTS
10 CFR 50.55(e)
NCR SWP-80-W-2
FINAL REPORT

Description of Deficiency

The anchor bolts in question were designed by EDS Nuclear, Incorporated, San Francisco. The designer failed to take into account the shear load on the anchors, thus causing the anchors to be underdesigned. Consequently, the affected anchor bolts are overstressed. The four supports affected (two per unit) are located on main steam lines (loops 3 and 4) upstream of the main steam isolation valves.

Safety Implications

This condition results in inadequate support for two main steam lines. During a seismic event, there is a possibility that this condition could cause the loop 3 and loop 4 main steam lines to break. Because the supports are upstream of the isolation valves, such an event would lead to the blowdown of two steam generators. This circumstance is not within the scope of the FSAR design basis and, therefore, represents a potential safety hazard.

Corrective Action

TVA redesigned the subject grouted anchor bolts. The original design utilized 1-1/4" bolts fabricated from A36 steel. These will be replaced by 1-3/8" bolts fabricated from A193 (high strength) steel with A194 nuts. TVA anticipates completing this work by August 1, 1980, for unit 1 and July 11, 1981, for unit 2. No other changes to the support structures are required.

The vendor (EDS) has completed all similar support designs for Sequoyah and Watts Bar. EDS has been notified of the error in their design, and they are conducting a design review of all hangers in the reactor buildings of both plants, which have grouted anchor bolts designed by EDS, to verify the adequacy of design. To date, no other design errors have been found.

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