ENCLOSURE

SEQUOYAH NUCLEAR PLANT UNIT 2
OVERSTRESSED U-BOLTS ON 3/4-INCH DRAIN LINES
NCR SQN SWP 8007
10 CFR 50.55(e)
FINAL REPORT

Description of Condition

Approximately 32 pipe supports, designed by EDS Nuclear, could have been overstressed during a seismic event, based on the loadings shown on the individual drawings. The problem involves 3/4-inch drain lines that are supported from 2 and 3-inch process lines. Four of the supports involved are on the CVCS system and the rest are on drain lines that come off of RTD (resistance temperature device) lines. The 3/4-inch lines run parallel to and are supported from the larger pipe. The lines are clamped by a U-bolt on either side of a common member which acts to transfer the load from the 3/4-inch line to the larger pipe. In the original design, the U-bolts on the 3/4-inch lines were to act as an anchor and thereby were subject to torsion as well as axial and lateral loads. Torsion was improperly accounted for in the original analysis.

Safety Implications

Had this condition gone uncorrected, it would have been possible for several 3/4-inch lines to become overstressed during a seismic event. A break in more than one of these lines would result in the loss of more primary coolant than could be made up by the normal makeup systems. Thus, during a seismic event the safety of the plant could have been adversely affected.

Corrective Action

TVA has developed test models for the supports and U-bolts to determine the torsional resistance of the U-bolts on the larger pipes for various torquings of the bolts. The U-bolts on the 3/4-inch pipe have been redesigned so that now they act to support the pipe laterally and axially but are no longer required to resist torsion. All of the U-bolts will be retorqued to allowable values supplied by EDS Nuclear based on their reanalysis of the piping and supports.

Revised drawings are being issued, and all support modifications will be completed before fuel loading of unit 2.