

ENCLOSURE

WATTS BAR NUCLEAR PLANT UNITS 1 AND 2
DEFECTIVE PHILLIPS SELF-DRILL CONCRETE ANCHORS
NCR 1433R
FIRST INTERIM REPORT

Description

This deficiency was reported to TVA by the manufacturer of these self-drill concrete anchors, ITT Phillips Drill Division. It is considered reportable because some safety-related systems may be supported by deficient self-drill concrete anchors, which have little or no capability to carry loads that may be imposed by seismic events.

A manufacturing defect in some self-drill concrete anchors supplied by ITT Phillips Drill Division to the Watts Bar Nuclear Plant site resulted in this deficiency.

Safety Implications

If this deficiency had not been discovered by Phillips Drill Division of ITT, preliminary indications are that a seismic event may have led to failures in some safety-related systems supported by the deficient self-drill concrete anchors. Such failures as these may have adversely affected the ability of the plant to reach a safe shutdown condition.

Corrective Actions

Upon receipt of notification from Phillips Drill Division of ITT that some Red Head concrete anchors supplied to the Watts Bar Nuclear Plant site were possibly defective, a search was begun to locate all anchors supplied in the defective lot. Crafts people have been asked to return all 1/2-inch self-drilled anchors not yet installed. Of the 10,000 1/2-inch self-drill anchors supplied in the potentially defective lot, few could be definitely located. Three examples of both good and deficient 1/2-inch self-drill anchors have been tested at the Watts Bar Nuclear Plant site. The three deficient anchors failed a pull test, while the three non-defective anchors passed.

The pull test records at Watts Bar Nuclear Plant for 1/2-inch self-drill anchors has been examined. Results of pull tests before any of the deficient anchors were used showed a failure rate of about 0.7 percent, while tests performed in the period when deficient anchors were believed to be on site showed the failure rate had risen to about three percent.

At present TVA is evaluating what further action should be taken to correct this deficiency. Additional corrective actions will be detailed in a future report on this deficiency.

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