

ENCLOSURE
SEQUOYAH NUCLEAR PLANT UNITS 1 AND 2
CORROSION OF CABLE TERMINATIONS IN JUNCTION
BOXES INSIDE CONTAINMENT
NCR 9P
10 CFR 50.55(e)
FINAL REPORT

Description of Condition

This NCR was issued based on a problem with corrosion of cable terminations within: (a) junction boxes that were randomly sampled inside unit 1 primary containment, and (b) Foxboro transmitters inside unit 1 primary containment.

Junction boxes

Some junction boxes house terminations for field wiring that interfaces with vendor's equipment and components. TVA has conducted a 100 percent inspection of these boxes containing terminations in unit 1. The inspection revealed that approximately 5 percent (58 boxes) of these junction boxes contained corroded class 1E terminations. The probable cause of the corrosion is inadequate protection of terminations during construction.

Foxboro transmitters

An inspection of some Foxboro transmitters inside unit 1 primary containment found some of the cable terminations corroded within the instrument housing.

Information from the vendor indicates that the type of terminal block used in Foxboro transmitters with a serial number less than 3,000,000 could produce corrosive chemicals when exposed to moisture.

Safety Implications

Had this condition gone uncorrected the corrosion of Class 1E terminations could have led to a failure of safety-related circuitry, thereby adversely affecting the safe operation of the plant.

Corrective Action

TVA's corrective action on a related NCR (EEB 79-7) is to replace terminations in junction boxes inside containment with splices for Class 1E circuits required to achieve and maintain safe shutdown

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of the reactor for a LOCA or main steamline break (MSLB). Thus, any corrosion concern will be eliminated when splicing is completed. These circuits will be spliced before fuel loading of the respective unit.

The remaining junction boxes with corroded Class 1E terminations will be either replaced with insulated splices or restored to their original configuration using brass screws. TVA will inspect for corrosion, all junction boxes containing Class 1E terminations in unit 2. Where corroded Class 1E terminations are found the same corrective action will be applied.

TVA has conducted a 100 percent inspection of Foxboro transmitters in unit 1 to verify serial numbers. Replacement terminal blocks furnished by the vendor have been installed in all Foxboro transmitters with a serial number less than 3,000,000.

An inspection will be conducted in unit 2 and the terminal blocks in all Class 1E Foxboro transmitters with a serial number less than 3,000,000 will be replaced before fuel loading of unit 2.

To prevent recurrence of this condition, all other TVA nuclear plant design project managers are being notified of the potential corrosion problem with terminations in junction boxes and Foxboro transmitters. The managers are being instructed to: (a) take action to protect terminations during construction, and (b) ensure that vendor supplied replacement terminal blocks are installed in all Foxboro transmitters with an serial number less than 3,000,000.

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