ENCLOSURE

SEQUOYAH NUCLEAR PLANT UNIT 2 SAFETY-RELATED CABLE INSIDE CONTAINMENT NOT QUALIFIED NCR SQN QEB 8002 10 CFR 50.55(e) FINAL REPORT

Description of Deficiency

This deficiency was discovered during a QA review of ECN's by the Quality Engineering Branch in TVA's Division of Engineering Design. The higher radiation levels inside containment following a loss-of-coolant-accident (LOCA) were discovered during a verification of radiation levels inside containment for an FSAR table.

The deficiency is that exposed portions of cables to safety-related equipment (i.e., equipment that must function during and after an accident) inside containment may not be environmentally qualified for the higher radiation dose levels recently calculated to exist inside containment. Cable that fall into this category include cable runs between penetrations and conduit and cable between terminal boxes and reactor coolant system RTD's required for post-accident monitoring.

Cable inside the conduit that is utilized inside containment at Sequoyah Nuclear Plant is not affected by this deficiency. The conduit provides sufficient shielding such that the radiation qualification remains valid. The new radiation dose recently calculated is principally beta $(4.0 \times 10^{\circ} \text{ RADS})$ of a total dose of 4.7 x 10° RADS).

This same deficiency also extends to Watts Bar Nuclear Plant and is being reported in Nonconformance Report WBN QEB 8001.

Safety Implications

If this deficiency had remained uncorrected, it is possible that these safety-related cables not enclosed in conduit that provide power or control signals to vital components might have failed in the post-LOCA period. Such equipment failures could possibly have an adverse affect on the ability to maintain the reactor in a safe condition following LOCA.

Corrective Action

TVA has investigated the extent of this deficiency and has found that the only exposed, safety-related cable inside containment is (1) between the terminal boxes and the reactor coolant system (RCS) RTD's (which are required for post-accident monitoring) and (2) adjacent to the containment penetrations where the cables enter the containment up to the point that those cables enter their respective conduits.

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TVA will correct the exposed cable between the RCS RTD's and their respective terminal bores by running these cables in conduit, which will provide sufficient shielding so that the cables' qualification will remain valid.

The action to correct the exposed cables adjacent to the containment penetrations will include wrapping of 1/16-inch lead shielding around these cables. This lead shielding is sufficiently thick to provide the protection required by these cables to ensure that they are environmentally qualified for ionizing radiation. Support for this additional shielding has been analyzed and found to be acceptable.

The corrective actions described above will be completed before fuel loading for Sequoyah unit 2.

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