Tennessee Valley Authority, Post Office Box 2000, Spring City, Tennessee 37381

MAY 24 1994

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555

Gentlemen:

In the Matter of the Application of	)	Docket Nos. 50-390
Tennessee Valley Authority	)	50-391

WATTS BAR NUCLEAR PLANT (WBN) UNITS 1 AND 2 - NUREG-0737, ITEM II.B.2 - DESIGN REVIEW OF PLANT SHIELDING AND ENVIRONMENTAL QUALIFICATION OF EQUIPMENT FOR SPACES/SYSTEMS WHICH MAY BE USED IN POSTACCIDENT OPERATIONS - REVISED RESPONSE

This letter revises TVA's final response to the subject NUREG item previously submitted to the NRC on June 4, 1984. In that submittal, TVA indicated that following an accident, access outside the main control room (MCR) was not required. Since that time, TVA has identified several missions that require access outside the MCR. Analyses have been performed indicating that the shielding design allows access for short periods if the entry time into the area and the mission paths are selectively chosen.

The enclosure provides a detailed response concerning the subject item. For your convenience, revision bars indicate the revisions to the June 4, 1984 letter.

No commitments have been identified in this letter. If you should have any questions, contact John Vorees at (615)-365-8819.

Sincerely,

Dwight E. Nunn
Vice President
New Plant Completion

Enclosure
cc: See page 2

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cc (Enclosure):
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ENCLOSURE

WATTS BAR NUCLEAR PLANT (WBN) UNITS 1 AND 2

DESIGN REVIEW OF PLANT SHIELDING AND ENVIRONMENTAL QUALIFICATION OF EQUIPMENT FOR SPACES/SYSTEMS WHICH MAY BE USED IN POSTACCIDENT OPERATIONS REVISED RESPONSE

TVA RESPONSE

The Watts Bar design bases include the assumption of TID 14844 sources. WBN systems were originally designed to mitigate major design basis events with the goal of no access outside the main control room (MCR) being required. With this goal in mind, WBN shielding was not specifically designed for access outside the MCR. As design progressed, more detailed design considerations dictated several missions outside the MCR. Analyses demonstrate WBN shielding designs allow considerable capability for operator access for short times if the entry time into the area and the mission path is selectively chosen. For those missions that are performed outside the control room, WBN has evaluated both the entry time and the selected path for each mission and determined the mission can be accomplished within regulatory dose limits.

The current arrangements and shielding for normal operations minimize the impact from postaccident contained sources even though the shielding was not intended for that purpose. TVA's shielding review for WBN included generation of radiation source terms for primary system water and containment sump water based on TID 14844. These fluids were assumed to circulate in the plant systems designed for accident response and also in systems used in normal plant operation but which might be called upon for accident recovery. From the analyses performed, radiation doses can be determined at locations in the plant near accident recovery equipment.

The postaccident sampling facility required by NUREG-0737, Item II.B.3, is designed and shielded to allow access after an accident. Other postaccident activities required to be performed outside the MCR to mitigate an accident (such as backwashing strainers in the Intake Pumping Station; installing spool pieces between systems concurrent with manual valve alignment in the Auxiliary Building, etc.) have been identified and analyzed against General Design Criteria (GDC) 19. It has been determined that no other additional shielding is necessary at WBN.

A detailed report on TVA's shielding review for Sequoyah was transmitted to A. Schwencer by L. M. Mills dated June 16, 1980. This information, as modified above, is also applicable to WBN.