January 2, 1997

Mr. Oliver D. Kingsley, Jr.
President, TVA Nuclear and
Chief Nuclear Officer
Tennessee Valley Authority
6A Lookout Place
1101 Market Street
Chattanooga, Tennessee 37402-2801

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION REGARDING REQUEST FOR LICENSE AMENDMENT TO TECHNICAL SPECIFICATIONS - SPENT FUEL POOL STORAGE CAPACITY INCREASE - WATTS BAR UNIT 1 (TAC NO. M96930)

Dear Mr. Kingsley:

On October 23, 1996, the Tennessee Valley Authority submitted a request for a license amendment to the technical specifications regarding the spent fuel pool storage capacity. The NRC staff has performed a preliminary review of the submittal and has determined that additional information is needed for our review. Accordingly, we request that you provide responses to the issues identified in the enclosure so that we may continue our review of your submittal.

Sincerely,

Original signed by

Robert E. Martin, Senior Project Manager
Project Directorate II-3
Division of Reactor Projects I/II
Office of Nuclear Reactor Regulation

Docket No. 50-390

Enclosure: Additional Information

cc w/enclosure: See next page

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REQUEST FOR ADDITIONAL INFORMATION

WATTS BAR NUCLEAR PLANT

SPENT FUEL POOL STORAGE CAPACITY

Materials Review

Although Boral neutron absorbing material exhibits high degree of stability, it is still prone to some corrosion in certain chemical environments. The study performed by the Brookhaven National Laboratory has indicated that Aluminum 1100, used for cladding of Boral panels, will exhibit some degree of corrosion in a low pH spent fuel pool water. This corrosion is especially significant in new racks where aluminum cladding may corrode before protective oxide film is formed. There could be two potential consequences of this corrosion: generation of hydrogen and loss of boron carbide.

When a Boral panel is enclosed in a wrapper and not enough venting is provided, hydrogen generated by the corrosion induced by inleaking water could produce swelling. Apparently, this phenomenon was observed in a few cases.

Loss of boron carbide will occur when Boral panels become significantly damaged by corrosion. It is a very remote possibility, but it still should be taken into consideration.

In view of these potential mechanisms for Boral degradation, does Tennessee Valley Authority plan to establish a Boral surveillance program?

Environmental Review

Are any changes to the National Pollutant Discharge Elimination System permit required?

Are there required changes to the waste treatment systems or flowrates?

Will there be any temperature changes to effluents as a result of increases in pool temperature or evaporation?

Please provide amplification of the subsequent actions for increasing spent fuel storage capacity discussed on page 10-2 of the application.

Discuss the planned length of current and future fuel cycles, i.e., 18 month or other.

An apparent misspelling of the word "reasons" appears on page 9-4 of the application.

ENCLOSURE

Mr. Oliver D. Kingsley, Jr.
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