

April 25, 2002

Mr. J. A. Scalice  
Chief Nuclear Officer and  
Executive Vice President  
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6A Lookout Place  
1101 Market Street  
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SUBJECT: WATTS BAR NUCLEAR PLANT, UNIT 1 — SECOND REQUEST FOR  
ADDITIONAL INFORMATION RE: TRITIUM PRODUCTION PROGRAM  
INTERFACE ISSUE 7 (TAC NO. MB1884)

Dear Mr. Scalice:

The Nuclear Regulatory Commission staff has reviewed your response of February 21, 2002, to our request for additional information (RAI) regarding consolidation of tritium-producing burnable absorber rods. We need additional information to complete our review and have prepared the attached RAI containing a more specific request. Please refer to Interface Issue 7 in your reply. I discussed the enclosed RAI with Mr. Chardos, Tennessee Valley Authority's Tritium Program Manager, and he agreed to respond to this request by May 17, 2002. Please contact me if you have any questions.

Sincerely,

**/RA/**

L. Mark Padovan, Project Manager, Section 2  
Project Directorate II  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Docket No. 50-390

Enclosure: Second Request for  
Additional Information

cc w/ enclosure: See next page

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Second Request for Additional Information

Tritium Production Program Interface Issue 7

Watts Bar Nuclear Plant, Unit 1

Docket No. 50-390

NUREG-1672, "Safety Evaluation Report Related to the Department of Energy's Topical Report on the Tritium Production Core."

Enclosures 1 and 4 to Tennessee Valley Authority's (TVA's) letter of August 20, 2001, stated that no more than 24 tritium-producing burnable absorber rods (TPBARs) would be damaged for all credible impact scenarios involving a fully-loaded (300 TPBARs) consolidation canister. In response to a question regarding the basis for this statement, TVA stated that a Pacific Northwest National Laboratories analysis showed no TPBAR cladding failures for a canister impact with a rigid surface at a speed of 40 feet per minute. This speed is based on the maximum uncontrolled lowering hook speed of the spent fuel pool hoist. Also, using this speed as a limiting value was based on design features and operating practices that TVA will apply when handling consolidation canisters. Using these conditions resulted in the previously-evaluated consequences from a fuel handling accident (involving a fuel assembly containing an inventory of 24 TPBARs) bounding fuel handling accidents involving a consolidation cannister.

This approach does not appear to be consistent with the following regulatory guidance for review of fuel handling facilities and single-failure-proof load handling systems:

- Regulatory Guide 1.13, "Spent Fuel Storage Facility Design Basis"
- Safety Guide 25, "Assumptions Used for Evaluating the Potential Radiological Consequences of a Fuel Handling Accident in the Fuel Handling and Storage Facility for Boiling and Pressurized Water Reactors"
- Standard Review Plan Sections 9.1.4, 9.4.2, and 15.4.7
- NUREG-0612, "Control of Heavy Loads at Nuclear Power Plants"

The regulatory guidance for fuel handling facilities specifies that the maximum potential release due to an unrestrained drop of a light load from its maximum potential height be evaluated, and the resultant consequences be within regulatory limits. The regulatory guidance for review of single-failure-proof load handling systems specifies a complete set of design features and operational controls to ensure reliable performance of the load handling system in preventing damage to important structures, systems, and components. The information in Enclosures 1 and 4 to TVA's letter of August 20, 2001, does not address the maximum potential release from a consolidation cannister. Further, it does not describe TVA's implementation of a complete set of design features and operational controls to ensure reliable performance of the load handling system in preventing damage to important structures, systems, and components.

In order to complete our review, please provide either of the following evaluations:

1. An evaluation of the maximum potential radiological consequences from a fuel handling accident involving a consolidation canister. This evaluation should consider potential releases resulting from an unrestrained drop of a light load from its maximum potential height and should address all potential impact combinations involving fuel assemblies and loaded consolidation canisters.
2. An evaluation comparing design features, operational controls, and analyses planned for implementation to those specified in the applicable section of NUREG-0612. This evaluation should address each specified item separately by describing what is planned for implementation and the basis for any difference in scope or depth relative to what is specified in NUREG-0612.

Tennessee Valley Authority

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