

October 13, 2005

Mr. Karl W. Singer  
Chief Nuclear Officer and  
Executive Vice President  
Tennessee Valley Authority  
6A Lookout Place  
1101 Market Street  
Chattanooga, Tennessee 37402-2801

SUBJECT: WATTS BAR NUCLEAR PLANT, UNIT 1 — REQUEST FOR ADDITIONAL  
INFORMATION TO SUPPORT CONFIRMATORY DOSE ANALYSIS  
REGARDING THE TEMPORARY USE OF PENETRATIONS IN THE SHIELD  
BUILDING DOME DURING MODES 1-4 (TAC NO. MC6569)

Dear Mr. Singer:

By letter dated April 4, 2005, Tennessee Valley Authority submitted an application for a temporary license amendment to the Watts Bar Nuclear Plant (WBN), Unit 1, technical specifications (TSs) that would allow them to use one of two penetrations in the Shield Building dome during normal power operation (Modes 1-4).

During the Cycle 6 refueling outage, two penetrations through the Shield Building dome were created in preparation for steam generator replacement activities during the Cycle 7 refueling outage. These penetrations were each closed with a steel hatch assembly prior to entering Mode 4 at the end of the outage. The proposed TS change will allow WBN Unit 1 to open one of the penetrations in the Shield Building dome up to 5 hours a day, 6 days a week while in Modes 1-4 during Cycle 7 operation. This action will continue until the start of the Cycle 7 refueling outage in the fall of 2006.

In order for the staff to complete its review of the subject license amendment submittal, we request that the licensee provide responses to the enclosed request for additional information. Discussions with your staff indicate that you plan to respond to this request by November 15, 2005. If you have any questions about this request, please contact me at (301)-415-1364.

Sincerely,

*/RA/*

Douglas V. Pickett, Senior Project Manager, Section 2  
Project Directorate II  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Docket No. 50-390

Enclosure: Request for Additional Information

cc w/enclosure: See next page

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Mr. Karl W. Singer  
Tennessee Valley Authority

**WATTS BAR NUCLEAR PLANT**

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## REQUEST FOR ADDITIONAL INFORMATION

### WATTS BAR NUCLEAR PLANT, UNIT 1

#### TEMPORARY USE OF PENETRATIONS IN SHIELD BUILDING DOME DURING MODES 1-4

1. What are the control room atmospheric dispersion factors ( $\chi/Q$  values) used in the dose assessment for postulated releases from the openings in the shield building dome to 1) the control room air intakes, and 2) as a result of unfiltered inleakage? If these  $\chi/Q$  values are bounded by values which were previously approved, please provide a reference citation and sufficient information to demonstrate that releases from these openings are bounded by the previously approved  $\chi/Q$  values. Note that a comparison with previously approved values should be for point source releases. If inleakage of unfiltered air into the control room has been modeled using control room intake  $\chi/Q$  values, please confirm (preferably based on the results of tracer gas testing) that there are no potential unfiltered inleakage pathways during emergency mode that could result in  $\chi/Q$  values that are higher than the control room intake  $\chi/Q$  values.

If the  $\chi/Q$  values are new, please provide a copy of the meteorological data inputs and program outputs for any atmospheric dispersion computer codes (e.g., ARCON96) used to generate the  $\chi/Q$  values. A discussion of assumptions and inputs that are not a direct follow-on from guidance associated with use of the models, the Watts Bar Updated Final Safety Analysis Report (UFSAR), or other docketed supplemental information (e.g., drawings) should also be provided. Please provide a site plan highlighting the locations of all potential accident release pathways and control room intake and unfiltered inleakage pathways. If possible, drawings should be approximately to scale and show true north.

2. What are the  $\chi/Q$  values used in the dose assessment for postulated releases from the openings in the shield building dome to the exclusion area boundary and low population zone? If these values were previously approved (e.g., in another licensing action), please provide a reference citation.

If the  $\chi/Q$  values are new, please provide a copy of the meteorological data inputs and program outputs for any atmospheric dispersion computer codes (e.g., PAVAN) used to generate the  $\chi/Q$  values. A discussion of assumptions and inputs that are not a direct follow-on from guidance associated with use of the models, the Watts Bar UFSAR, or other docketed supplemental information (e.g., drawings) should also be provided.

Enclosure