

August 11, 2006

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: SEQUOYAH NUCLEAR PLANT, UNITS 1 AND 2 - REQUEST FOR  
ADDITIONAL INFORMATION REGARDING CONTAINMENT SUMP DESIGN  
CHANGES (TAC NOS. MD2052 AND MD2053)

Dear Mr. Singer:

By letter dated May 25, 2006, Tennessee Valley Authority (the licensee) requested an amendment to the operating license for the Sequoyah Nuclear Plant, Units 1 and 2, to modify the design and licensing basis for the containment sump debris transport analysis as described in the Sequoyah Updated Final Safety Analysis Report (TS-06-02).

In order for the staff to complete its review of this application, we request that the licensee provide responses to the enclosed request for additional information (RAI). Based on discussions with your staff, we understand that you intend to respond to this RAI by August 31, 2006.

Sincerely,

**/RA/**

Douglas V. Pickett, Senior Project Manager  
Plant Licensing Branch II-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket Nos. 50-327 and 50-328

Enclosure:  
Request for Additional Information

cc w/encl: See next page

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Mr. Karl W. Singer  
Tennessee Valley Authority

**SEQUOYAH NUCLEAR PLANT**

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REQUEST FOR ADDITIONAL INFORMATION  
SEQUOYAH NUCLEAR PLANT UNITS 1 AND 2  
UPDATED FINAL SAFETY ANALYSIS REPORT CHANGES ASSOCIATED WITH  
NRC GENERIC LETTER 2004-02  
TAC NOS. MD2052 AND MD2053

By letter dated May 25, 2006, the licensee of the Sequoyah Nuclear Plant (SQN) proposed a change to their Operating License. The proposed change modifies the SQN design and licensing basis for the containment sump debris transport analysis. Their current transport analysis is a two-dimensional physical transport model and Tennessee Valley Authority (TVA) is requesting to update the analysis to a three-dimensional transport model using FLOW-3D computational fluid dynamics (CFD) computer code.

In order for the staff to evaluate the proposed change, the staff requests the following information:

- (a) Please specify the difference in the results of the current two-dimensional model and the proposed CFD transport analysis.
- (b) Watts Bar and Sequoyah are similar plants. The staff is currently performing an audit of the Watts Bar sump modifications and has gained a broad understanding of the proposed changes. To what extent do the two units have the same transport analysis? Please provide the inputs, boundary conditions, and geometry that were different from Watts Bar's transport analysis (if any).
- (c) SQN stated in the license amendment request (LAR) that "the quantity of debris washed down by ice melt and spray was conservatively determined." Please provide more details of how the amount of debris was determined.
- (d) Please provide the basis for SQN to conclude that the appropriate ice melt and containment spray flow rates, and kinetic energy were used in the CFD calculation.
- (e) Please provide the basis for SQN to conclude that the appropriate turbulence model was selected for the CFD calculations.
- (f) Statement number 11 in the Debris Transport Methodology section of the LAR, states that "the quantity of debris that could experience erosion due to the break flow, spray flow, or ice melt drainage was determined." Please provide more details of the fraction of erosion and types of debris.

Enclosure