

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

cc:

Mr. Ashok S. Bhatnagar, Senior Vice President
Nuclear Operations
Tennessee Valley Authority
6A Lookout Place
1101 Market Street
Chattanooga, TN 37402-2801

Mr. Glenn W. Morris, Manager
Corporate Nuclear Licensing
and Industry Affairs
Tennessee Valley Authority
4X Blue Ridge
1101 Market Street
Chattanooga, TN 37402-2801

Mr. Larry S. Bryant, Vice President
Nuclear Engineering & Technical Services
Tennessee Valley Authority
6A Lookout Place
1101 Market Street
Chattanooga, TN 37402-2801

Mr. Paul L. Pace, Manager
Licensing and Industry Affairs
ATTN: Mr. James D. Smith
Sequoyah Nuclear Plant
Tennessee Valley Authority
P.O. Box 2000
Soddy Daisy, TN 37384-2000

Mr. Robert J. Beecken, Vice President
Nuclear Support
Tennessee Valley Authority
6A Lookout Place
1101 Market Street
Chattanooga, TN 37402-2801

Mr. David A. Kulisek, Plant Manager
Sequoyah Nuclear Plant
Tennessee Valley Authority
P.O. Box 2000
Soddy Daisy, TN 37384-2000

Mr. Randy Douet
Site Vice President
Sequoyah Nuclear Plant
Tennessee Valley Authority
P.O. Box 2000
Soddy Daisy, TN 37384-2000

Senior Resident Inspector
Sequoyah Nuclear Plant
U.S. Nuclear Regulatory Commission
2600 Igou Ferry Road
Soddy Daisy, TN 37379

General Counsel
Tennessee Valley Authority
ET 11A
400 West Summit Hill Drive
Knoxville, TN 37902

Mr. Lawrence E. Nanney, Director
Division of Radiological Health
Dept. of Environment & Conservation
Third Floor, L and C Annex
401 Church Street
Nashville, TN 37243-1532

Mr. John C. Fornicola, Manager
Nuclear Assurance and Licensing
Tennessee Valley Authority
6A Lookout Place
1101 Market Street
Chattanooga, TN 37402-2801

County Mayor
Hamilton County Courthouse
Chattanooga, TN 37402-2801

Ms. Ann P. Harris
341 Swing Loop Road
Rockwood, Tennessee 37854

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