

To Hm: 9/4/87



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

August 24, 1987

Docket Nos. 50-327
and 50-328

Tennessee Valley Authority
ATTN: Mr. S. A. White
Manager of Nuclear Power
6N 38A Lookout Place
1101 Market Street
Chattanooga, Tennessee 37402-2801

Gentlemen:

SUBJECT: SEQUOYAH DESIGN CALCULATION REVIEW: REPORT NOS. 50-327/87-27
AND 50-328/87-27

This letter forwards the inspection report associated with the Sequoyah design calculation review inspection performed at your Knoxville, Tennessee offices from June 1-5, 1987. This inspection report addresses the adequacy of corrective actions resulting from the design calculation review program including NRC's previous inspection of this program.

Prior to the performance of this inspection it was recognized by the NRC staff that a complete inspection could not be conducted in the civil/structural area for two reasons: (1) TVA had not submitted their updated calculation review program description, requested by the NRC during the exit meeting of the previous calculation inspection on February 13, 1987 and again in writing in a March 5, 1987 letter from James M. Taylor, then Director of the Office of Inspection and Enforcement to Steven A. White, TVA Manager of Nuclear Power and (2) there was additional work in process in TVA's Civil Engineering Branch (CEB) that would not be completed prior to the inspection. The updated description of the calculation review program, recently submitted to the NRC by letter from R. L. Gridley, Director, Nuclear Safety and Licensing dated July 31, 1987, was necessary in the evaluation of CEB because the staff had and still has concerns about the lack of a current review of Sequoyah calculations previously performed by the CEB. Further TVA efforts in this area may be necessary depending on the results of the staff review of the TVA submittal and insights gained during the ongoing Integrated Design Inspection.

During this calculation review inspection the team reviewed four programs undertaken by CEB to determine the technical adequacy of the Sequoyah design: (1) Miscellaneous Structural Steel (SQN CEB 87-02); (2) Conduit and HVAC Supports (SQN CEB 87-03); (3) Embedded Plates (SQN CEB 87-04); and (4) Civil/Structural Regenerated Calculations (SQN CEB 87-06). The TVA/CEB reviews highlighted above indicate that a significant number of problems exist with newly regenerated calculations, many of which have been prepared by contract personnel.

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One of the more significant open items in this inspection report is MEB-3 which relates to the main feedwater system water hammer analysis. The team found that TVA had, in consideration of main feedwater line water hammer, only evaluated the main feedwater check valves to assure that they would maintain their function and integrity following the most severe feedwater line break postulated. The TVA evaluation did not assess the main feedwater piping integrity and the increased loads transmitted to pipe snubbers. A TVA analysis performed on the Watts Bar main feedwater piping yielded snubber water hammer loads that were approximately 10 times greater than the snubber seismic loads.

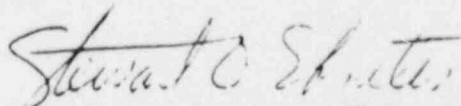
The team also noted ineffective implementation of a procedure to track unverified assumptions made in calculations and also a lack of coordination between the Mechanical, Electrical, and Nuclear Engineering Branches regarding responsibility for determination of instrument setpoints.

A written response is requested from TVA addressing the observations identified in the enclosed report. The NRC intends to follow your actions to resolve these items, therefore your response should be provided sufficiently in advance of planned restart of Sequoyah Unit 2 to allow for NRC inspection. The findings addressed in the enclosure were discussed by the team in a meeting with TVA management at the conclusion of the inspection on June 5, 1987.

In accordance with 10 CFR 2.790(a), a copy of this letter and the enclosure will be placed in the NRC Public Document Room.

Should you have any questions concerning this inspection, please contact me or Mr. Steven D. Richardson at (301) 492-9044 of this office.

Sincerely,



Stewart D. Ebnetter, Director
TVA Projects Division
Office of Special Projects

Enclosure:
Inspection Report 50-327/87-27
and 50-328/87-27

cc w/enclosure: See next page

Mr. S. A. White
Tennessee Valley Authority

Sequoyah Nuclear Plant

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DATE	8/7/87	8/7/87	8/7/87	8/7/87	8/14/87	8/14/87	8/17/87

Handwritten notes and signatures:
 Numerous handwritten initials and signatures are present, including "EK", "EK", "EK", "BGrimes", "JPartlow", and "SDEbnetter".
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