

January 3, 2003

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

SUBJECT: SEQUOYAH NUCLEAR PLANT UNIT 2 — REQUEST FOR ADDITIONAL
INFORMATION CONCERNING LICENSEE IDENTIFIED MATERIAL WASTAGE
(TAC NO. MB4579)

Dear Mr. Scalice:

During a forced outage that began on December 26, 2002, the Tennessee Valley Authority (TVA, the licensee) identified leakage from a compression fitting on the Reactor Vessel Level Indication System. Additional licensee inspection revealed indications of material wastage on the reactor pressure vessel head. The U.S. Nuclear Regulatory Commission (NRC) staff held a conference call with the licensee on January 3, 2003, to discuss the extent of the material wastage and the licensee's evaluation of the structural integrity wastage area.

As discussed during the conference call on January 3, 2003, the NRC staff requires responses to the enclosed Request for Additional Information to proceed with its review. During the call, Mr. Pedro Salas, the Sequoyah Licensing Manager, stated that TVA would respond to this request within 30 days of the date of this letter. Mr. Salas also indicated that the pictures, drawings, and related evaluation forwarded in draft form to the NRC staff would be submitted with their response.

Please have your staff contact Eva Brown at (301) 415-2315, if there are any questions regarding the enclosed request.

Sincerely,

/RA by E.Brown acting for/

Raj K. Anand, Project Manager, Section 2
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-328

Enclosure: Request for Additional Information

cc w/enclosure: See next page

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REQUEST FOR ADDITIONAL INFORMATION

REACTOR PRESSURE VESSEL HEAD MATERIAL WASTAGE

SEQUOYAH NUCLEAR PLANT, UNIT 2

DOCKET NO. 50-328

1. There are apparently two leak sources: (1) through a reactor vessel level indication system (RVLIS) mechanical joint and (2) through a conoseal or canopy seal control rod drive mechanism penetration. What was the impact of these two separate leakage sources (i.e., what was the extent of the degradation)? How long have there been leaks from these two sources and how was that determined?
2. It was communicated that degradation on the upper head is somewhat groove-like, about 5-inches long, and 1/8-inch deep. This morphology is not typical for wastage caused by boric acid; please provide more details to describe the morphology of the degradation. Is the extent of the degradation consistent with TVA's expectations with respect to head temperatures, exposure time, etc.?
3. What is the trend of reactor coolant system (RCS) unidentified leakage since the last refueling outage and how well does the amount of boron recovered correlate to the known trend of RCS unidentified leakage? What is the location of insulation seams in the vicinity of this degradation? What is the distance between the leaking RVLIS mechanical joint and the top of the reactor vessel head? What is the approximate temperature of this joint? What is the general equipment configuration in the area of this joint with respect to ventilation in the area and the leak path for the leaking RCS fluid given ventilation in the area?
4. Explain why the Westinghouse fatigue evaluation focuses on one additional startup and shutdown cycle.
5. How was the extent of the degradation evaluated? For example, it looks like some borated water could have contacted the RV flange bolts. How was this assessed if the bolts were not removed for inspection?
6. What caused Tennessee Valley Authority to inspect the RV head? Was there a licensing commitment, TS requirement, or some other vehicle that caused them to inspect? What was the amount of unidentified leakage at the time of shutdown? When was the last time TVA inspected the head and what did the inspection consist of (e.g., bare metal visual)? What would have been the consequences had the inspections not been performed, the borated water leakage identified, corrected, and cleaned up?
7. What was the root cause for leakage occurring in the RVLIS mechanical fitting and how will you confirm that there will not be any additional leaks of this nature?

Mr. J. A. Scalice
Tennessee Valley Authority

SEQUOYAH NUCLEAR PLANT

cc:

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