Docket No.: 50-482

MAR 13 1986

Mr. Glen L. Koester
Vice President - Nuclear
Kansas Gas & Electric Company
200 North Market Street
Post Office Box 208
Wichita, Kansas 67201

Dear Mr. Koester:

Subject: Review of Steam Generator Tube Rupture Analysis

The NRC staff is continuing its review of your steam generator tube rupture analysis submitted by SNUPPS by letter dated January 8, 1986 and February 11, 1986. The information requested in the enclosure is necessary to permit the staff to complete its reveiw.

Please provide the requested information within 15 days of your receipt of this letter. If all of the requested information request cannot be provided within the requested time provide a schedule for the timely submittal of all remaining items.

Sincerely,

/s/

B. J. Youngblood, Director
PWR Project Directorate #4
Division of PWR Licensing-A

Enclosure: As stated

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ENCLOSURE 1

REQUEST FOR ADDITIONAL INFORMATION
STEAM GENERATOR TUBE RUPTURE (SGTR) ANALYSIS
CALLAWAY & WOLF CREEK PLANTS

1. The SNUPPS analysis for the SGTR maximum overfill case states that at the time of break flow termination, the steam volume below the outlet nozzle is very small. Thus, the margin to overfill for this case is minimal, and a slight change in assumptions or calculational results could result in overfill. As an example, the SNUPPS analysis apparently assumes reactor trip at 100% power. This assumption may not be the most conservative from a standpoint of margin to overfill and is also probably not realistic when compared to the Ginna SGTR event. A more realistic scenario may involve turbine runback to some lower power followed by overtemperature delta T trip. At lower power levels the steam generator should have a larger liquid inventory because of reduced void fraction, assuming the SG level remains constant. Thus, starting maximum auxiliary feedwater flow at a lower power level may result in more rapid overfill. Discuss whether this scenario (i.e., lower void fraction) was considered in your analysis and what effect it would have on the margin to overfill.

2. Explain the basis for the large difference for reactor trip time between the "failed open AFW control valve" case and the "stuck open ARV" case and the effect of these assumptions on the analysis results.

3. The "stuck open ARV" case assumes that the atmospheric relief valve (ARV) is isolated in 20 minutes by manually closing the ARV block valve. State how this time period was established and whether it is realistic considering that this operation would be performed in a location subject to adverse conditions including high temperature, radiation and noise.

4. Appendix E "Bases for ARV Technical Specification" states: "An ARV is considered operable if the block valve is closed solely because of leakage". The SGTR analysis assumes that the operator initiates RCS cooldown in less than 30 minutes by opening the intact SG ARVs. Since the operator may have to open the ARV block valves manually if the above Technical Specification is implemented, demonstrate that this can be accomplished within the stated time frame considering the concerns regarding this operation expressed in Question 3.

5. In your analysis, you assumed that the fission products released to the intact steam generators were not released to the environment. Provide an analysis demonstrating that the fission products released to the intact steam generators will be retained in the steam generators during the cool down phase.