TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401
400 Chestnut Street Tower II

January 3, 1983

TVA-SQN-TS-37 (Supplement)

Director of Nuclear Reactor Regulation
Attention: Ms. E. Adensam, Chief
Licensing Branch No. 4
Division of Licensing
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Ms. Adensam:

In the Matter of	)	Docket Nos. 50-327
Tennessee Valley Authority	)	50-328

As requested by Melanie Miller of your staff in a telephone conversation on December 24, 1982, enclosed is supplemental information regarding the proposed technical specification change in containment air temperatures (TS 3.6.1.5) for our Sequoyah Nuclear Plant.

If you have any questions concerning this matter, please get in touch with Jerry Wills at FTS 858-2683.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

L. M. Mills

L. M. Mills, Manager
Nuclear Licensing

Sworn to and subscribed before me
this 3rd day of Jan 1982

Bryant M. Lowery
Notary Public
My Commission Expires 4/8/86

Enclosure
cc: U.S. Nuclear Regulatory Commission (Enclosure)
Region II
Attn: Mr. James P. O'Reilly, Regional Administrator
101 Marietta Street, Suite 3100
Atlanta, Georgia 30303

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ENCLOSURE

Supplemental Response
TVA-SQN-TS-37
Proposed Change to Containment Air Temperature Technical Specification
Sequoyah Nuclear Plant

The UHI Evaluation Model codes utilized in the Sequoyah FSAR LOCA analysis date from 1978 and were approved in NUREG-0297. On May 15, 1981, Westinghouse requested that certain changes be incorporated in their ECCS evaluation models. The primary cause for the changes was to implement the clad swelling and rupture models contained in NUREG-0630, as required by the NRC staff into the SATAN and LOCTA computer codes. The Cycle 2 LOCA reanalysis for Sequoyah unit 1 utilizes revised versions of the UHISATAN and UHILOCTA computer codes which contain the NUREG-0630 models. The UHIREFLOOD code has also been updated to model accumulator/SI interaction. All updates cited herein are those approved by the "Safety Evaluation Report on 1981 Version of the Westinghouse Large Break ECCS Evaluation Mode." Thus, the model used for the Sequoyah unit 1, cycle 2 analysis is the UHI equivalent of that presented in WCAP-9220-P-A, Revision 1, and is in compliance with Appendix K of 10 CFR 50.

Purge Impact

The analysis performed for cycle 2 has assumed that three sets of containment purge lines are open at the time of the LOCA event. Since the containment pressure post-LOCA is reduced somewhat for each purge line assumed to be opened during the accident, the analysis performed is conservative for any case of fewer purge lines being open. (As noted in Appendix K of 10 CFR 50.46, lowering containment pressure is conservative for ECCS performance calculations.) The impact of presuming one set of purge lines being open rather than three is to decrease the calculated peak clad temperature for the limiting break by perhaps 15°F, which is not enough to alter its status as the limiting case break.

Limiting Case Break

The sensitivity study spectrums which have been performed for Sequoyah and other UHI plants assuming imperfect mixing have never identified the C_D = 1.0 DECLG break to be the limiting imperfect mixing ease. The Sequoyah FSAR C_D = 1.0 DECLG imperfect mixing case exhibits bottom-of-core recovery five seconds earlier than that computed for the C_D = 0.6 DECLG case. Therefore, core reload begins five seconds earlier for the C_D = 1.0 DECLG case. The improvement in reflood is the prime reason the C_D = 1.0 case is less limiting than the C_D = 0.6 DECLG case for Sequoyah.

In contrast, the C_D = 0.8 DECLG imperfect mixing case has been identified as the limiting case break for Sequoyah until cycle 2 operation since it exhibits bottom-of-core recovery only one second earlier than does the corresponding C_D = 0.6 DECLG case.