TENNESSEE VALLEY AUTHORITY
CHATTANOOGA, TENNESSEE 37401
1630 Chestnut Street Tower II

March 18, 1985

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

The Sequoyah Nuclear Plant units 1 and 2 operating license conditions 2.C(23).j(2) and 2.C(16).1, respectively, require TVA to "conform to the EPRI test program" and to "provide documentation for qualifying (a) reactor coolant system relief and safety valves, (b) piping and supports, and (c) block valves in accordance with the review schedule in SECY 81491. . . ." Also, NUREG-0737, Item II.D.1, as revised by D. G. Eisenhut's September 29, 1981 letter, required documentation to be submitted for items a, b, and c above. A response for item a was submitted on April 1, 1982 by L. M. Mills' letter to you. A response for item b, piping and supports, and item c block valves, which satisfied the requirements of the license conditions of NUREG-0737 was submitted to NRC by L. M. Mills' letter to you dated June 30, 1982. Supplemental responses were submitted to NRC by the January 7, 1983 and May 30, 1984 letters from L. M. Mills to you.

Enclosed is a revised response to section 4.0 of the supplemental responses submitted to you on January 7, 1983 and May 30, 1984 regarding NUREG-0737, Item II.D.1, "Performance Testing of Reactor Relief and Safety Valves." This revised response provides the plans for unit 2 at Sequoyah with respect to qualification of the reactor coolant system relief and safety valve piping and supports.

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

J. A. Domer

J. A. Domer
Nuclear Engineer

Sworn to and subscribed before me
this 18th day of March 1985

Paulette H. White
Notary Public
My Commission Expires 8-24-88

Enclosure
cc: See page 2

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Director of Nuclear Reactor Regulation March 18, 1985

cc: U.S. Nuclear Regulatory Commission (Enclosure)
Region II
Attn: Dr. J. Nelson Grace, Regional Administrator
101 Marietta Street, NW, Suite 2900
Atlanta, Georgia 30323

ENCLOSURE

REVISION TO SECTION 4.0 OF SUPPLEMENTAL RESPONSE
SUBMITTED TO NRC ON MAY 30, 1984

SEQUOYAH NUCLEAR PLANT

4.0 Piping/Support Evaluation

As indicated in item 3.0 of our June 30, 1982 response, a further evaluation of safety/relief valve discharge piping support loads was necessary, and if design modifications were required, a schedule for implementation would be provided.

Through the application of RELAP 4/MOD 5 and conservative assumption on the impact of the water slug, evaluations to date indicate that changes to the support loads, because of subcooled water slug flow, will probably involve several major support modifications. To eliminate this concern, TVA decided to delete the power-operated relief valve loop seals and drain the safety valve loop seals. The Crosby safety valves were modified by installing steam internals on Sequoyah Nuclear Plant (SQN) unit 1 during the cycle 2 refueling outage and unit 2 valves were modified during the cycle 2 refueling outage. Subsequent to this modification on unit 1, high tailpipe temperatures were observed on the safety valve discharge piping indicating the valves were leaking past the seats. Following numerous valve replacements on unit 1, TVA decided, in accordance with 10 CFR 50.59, to establish the loop seals on the safety valves.

After discovery of the problems on unit 1, TVA decided to reevaluate the options available to resolve this issue. These options included, but were not limited to, the following:

1. Evaluation of the problems associated with draining of the loop seals and continued operation with the leaking safety valves.

2. Modification of the supports on the safety valve discharge piping.

3. Heating the safety valve loop seal.

4. Modifying the safety valve discharge piping to reduce support loads.

TVA decided to perform actions during the unit 2 cycle 2 refueling outage:

1. The unit was returned to operation with the pressurizer safety valve loop seals drained. Steam trim was installed in the safety valves. In addition, discharge piping supports were modified and additional supports were added to reduce the valve flange loads. Reduction of the valve flange loads is expected to reduce the likelihood of valve seat leakage.

2. During startup from the unit 2 cycle 2 refuleing outage provisions were made and implemented to operate with a heated loop seal, when unacceptable seat leakage occurred wth the drained loop seals. The loop seals were allowed to fill with water and are being heated through insulation and/or heat tracing. Some supports were modified and additional supports were added on the relief/safety valve discharge piping during the unit 2 cycle 2 refueling outage. The safety/relief valves will remain functional if one or all valves discharge. If a complete lift of a safety valve occurs an analytical or inspection verification of all affected components and piping will be performed before returning the unit to operation.

Qualification of the piping/support system was verified by the thermal/hydraulic code RELAP 5/MOD 1 for unit 2 for both of the above options. TVA will implement modifications on unit 1 to resolve the safety valve discharge piping support loads by the end of the third refuleing outage.