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

February 11, 1980

Director of Nuclear Reactor Regulation
Attention: Mr. L. S. Rubenstein, Acting Chief
Light Water Reactors Branch No. 4
Division of Project Management
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Dear Mr. Rubenstein:

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

Enclosed are forty copies of revisions to TVA's revised response to NUREG 0578, Short Term Lessons Learned Requirements, for Sequoyah Nuclear Plant. These revisions provide additional clarification on PORV and Safety Relief Valve Position indication (2.1.3.a) and Auxiliary Feedwater Flow indication (2.1.7.b) as requested by M. Williams.

For your convenience, the enclosed revised pages replace the corresponding pages in the revised response to NUREG 0578 submitted by my letter to you dated October 31, 1979. Additional revised pages were submitted by my letters to you dated November 21, 1979, January 11, January 17, January 18, and January 25, 1980.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

L. M. Mills, Manager
Nuclear Regulation and Safety

Enclosure

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SEQUOYAH NUCLEAR PLANT RESPONSE

SUMMARY

AFW flow indication at Sequoyah is not classified as safety grade; however, the components and design are similar to those used for safety grade systems. The AFW flow instrumentation channels are powered from the emergency buses.

Response

Auxiliary feedwater flow is indicated in the main control room for each of the four steam generators. The flow indication has not been classed as safety grade; however, it utilizes the same type of transmitters which are used in other safety grade circuits. The transmitters are mounted on two separate seismically qualified panels and powered from power sources connected to the emergency power system. The cables are in low level signal trays and are kept separate from all power cables. In addition, the total flow from the turbine driven auxiliary feedwater pump is indicated in the main control room. The auxiliary feedwater flow instrument channels are powered from the emergency buses (120V ac vital instrument buses) consistent with the diversity requirements of the auxiliary feedwater system.

CLARIFICATION ITEMS

A. Control Grade (Short Term)

1. AFW flow indication to each steam generator does not satisfy the single failure criterion. (See item C.1)

2. Testability of the AFW flow indication channels is provided. (See item C.1)

3. The AFW flow instrument channels are powered from the vital emergency buses.

B. Safety Grade (Long Term)

1. AFW flow indication at Sequoyah is not classified as safety grade; however, the components and design are similar to those used for safety grade systems. The AFW flow instrumentation channels are powered from the vital emergency buses.

C. Other

1. The AFW flow indication channels do not by themselves satisfy the safety-grade requirements; however, the components and design are similar to those used for safety grade systems. In addition, the steam generator water level indication is safety-grade and satisfies the single failure and testability requirements. The steam generator water level provides backup indication of feedwater flow.

2. Each AFW flow instrument channel provides an indicaiton of feed flow with an accuracy on the order of ± 10 percent.

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DIRECT INDICATION OF POWER-OPERATED VALVE AND SAFETY VALVE POSITION FOR PWRs AND BWRs (2.1.3a)

CLARIFICATION ITEMS

1. This design provides the operator with unambiguous indication of valve position as specified in the above response. During hot functional testing at Sequoyah Nuclear Plant, TEC obtained a signiture of the frequencies for open relief valve position. This signature was used for calibration and assurance that extraneous and feedback noise is compensated.

2. Valve position is indicated in the main control room and alarmed as discussed in the above response.

3,4,5. Valve position indication for Sequoyah Nuclear Plant meets seismic and environmental qualification requirements as specified for Sequoyah. A meeting is scheduled for February 28-29, 1980, with Technology for Energy Corporation (TEC), the vendor for the monitoring system, to discuss the qualified life test program. TEC has indicated that after specifics of the program have been determined, tests could be completed in six to nine months.

DIRECT INDICATION OF POWER-OPERATED RELIEF VALVE AND SAFETY VALVE POSITION FOR PWRs AND BWRs (2.1.3a)

SEQUOYAH NUCLEAR PLANT RESPONSE

SUMMARY

Position indication in the main control room for power operated relief valves is currently available at Sequoyah. TVA will provide main control room indication of valve position of the pressurizer safety valves as specified in the following response.

RESPONSE

The power operated relief valves have a reliable direct, stem-mounted position indication in the main control room. Valve position of the pressurizer safety valves is currently provided in the following manner.

1. Temperature is sensed downstreatm of the valves and displayed in the main control room including high temperature alarms.

2. The pressurizer relief tank has temperature, pressure, and fluid level indication and alarms in the main control room.

3. The pressurizer has high pressure alarms in the main control room.

An environmentally qualified acoustic monitoring system for tne three safety relief valves and Power-operated Relief Valves has been provided on unit 1 and will be provided on unit 2 before fuel loading. An accelerometer is mounted on the valve discharge line just downstream of each valve. The accelerometer signals go to a charge converter inside containment mounted in a NEMA-4 enclosure. A valve flow indicator module is located in the main control room. The flow indicator module gives positive indication of the fully open and fully closed position of each valve. An alarm in the main control room will indicate when any valve is not in the fully closed position.