

TENNESSEE VALLEY AUTHORITY
CHATTANOOGA, TENNESSEE
37401

David
Thompson
TVA
40TH
ANNIVERSARY
OF PEOPLE IN
PARTNERSHIP



February 13, 1974

Mr. Donald F. Knuth, Director
Directorate of Regulatory Operations
U.S. Atomic Energy Commission
Washington, DC 20545

Dear Mr. Knuth:

TVA made an initial report to the AEC-DRO Region II office by telephone on October 1, 1973, of a potential design deficiency of Sequoyah Nuclear Plant units 1 and 2 Interior Concrete Structure. Interim reports were submitted on October 29, 1973, and December 14, 1973. The enclosed report is submitted as a third interim report on the potential design deficiency.

Very truly yours,

J. E. Gilleland

J. E. Gilleland
Assistant to the Manager of Power

Enclosure

CC (Enclosure);

Mr. Norman C. Moseley, Director
Directorate of Regulatory Operations
U.S. Atomic Energy Commission
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inquiry

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ENCLOSURE

POTENTIAL DESIGN DEFICIENCY

INTERIM REPORT NO. 3

An initial report of a potential design deficiency in the interior concrete structure of the reactor buildings for Units 1 and 2 of our Sequoyah Nuclear Plant was made by telecon to AEC-DRO Region II Office on October 1, 1974, in compliance with 10CFR50.55(e). Interim reports were submitted to AEC-DRO Headquarters on October 29, 1973, and December 14, 1973. The second interim report extended the problem to include all Category I structures.

Reactor Buildings - Units 1 and 2
Interior Concrete Structure

The effects of the shift in the location of peak response of the floor response spectra are not quite complete. Interim report number 2 indicated the evaluation of the design adequacy of the reactor building equipment and piping therein would be completed by February 1, 1974. We now expect this to be completed by May 1, 1974.

A summary of the major items still outstanding, with evaluation to date is as follows:

1. Ice Condenser

There is a slight increase above the previously developed Sequoyah seismic design loads. This increase occurs in the tangential distribution of the seismic impact loads at the center portion of the 48 foot ice columns between the lattice frames and the ice baskets. The increase in the seismic impact tangential load distribution is approximately seven percent (7%) which is well within the present design capability.

2. Auxiliary Equipment

Reanalysis of the manipulator crane verified the structural adequacy of the manipulator crane during the SSE. The fundamental frequency of the manipulator crane was below the peak of the original spectra and there is no appreciable effect for the revised spectra where the peak was shifted to a higher frequency. Equipment modification is not required.

3. Nuclear Steam Supply System (NSSS) and NSSS/Supports

- a. The reactor vessel internals have been examined and the resulting stress values are lower than for the standard design plant. No design change is required.
- b. SCRAM time still being evaluated; however, it is not expected to be affected.
- c. The CRDM seismic support frame has been evaluated and a design change is not required.
- d. NSSS piping seismic loads are still being evaluated but are apparently within allowables.
- e. NSSS/support seismic loads have increased in isolated instances. The design adequacy of the systems and supports are still being evaluated.

Work still in progress includes the normal verification of the seismic design adequacy of other major reactor equipment and their internals such as the steam generators, reactor coolant pumps, and pressurizers. They will be evaluated for the revised spectra when scheduled and no design problems are anticipated.

4. Auxiliary Piping

Auxiliary piping systems analyzed to date have been reanalyzed for the revised spectra. Piping and fluid system component stresses are within allowables for these systems. Some support locations require change.

Auxiliary piping systems yet to be done will be analyzed using the revised spectra.

Other Seismic Category I Structures

Auxiliary Control Building

The dynamic seismic analysis and response spectra for attached equipment for the auxiliary-control building, based upon the revised modulus is expected to be completed by February 15, 1974. Seismic Category equipment and piping supported by the structure will then be examined.

It appears the additional ice condenser equipment buildings are the only other Category I structures to be affected by the revised modulus. The analyses for these two structures will begin upon completion of the auxiliary-control building.