

REGION II
TENNESSEE VALLEY AUTHORITY

CHATTANOOGA, TENNESSEE 37401

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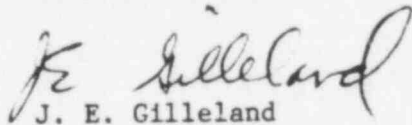
Mr. James P. O'Reilly, Director
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Region II - Suite 3100
101 Marietta Street
Atlanta, Georgia 30303

Dear Mr. O'Reilly:

OFFICE OF INSPECTION AND ENFORCEMENT BULLETIN 79-07 - RII:JPO
50-259, 260, -296 - BROWNS FERRY NUCLEAR PLANT UNITS 1, 2, AND 3

In response to your April 14, 1979, letter which transmitted IE
Bulletin 79-07, we are enclosing the results of our investigations
at Browns Ferry.

Very truly yours,



J. E. Gilleland
Assistant Manager of Power

Enclosure

cc: Office of Inspection and Enforcement (Enclosure)
Division of Reactor Operations Inspection
U.S. Nuclear Regulatory Commission
Washington, DC 20555

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RESPONSE TO IE BULLETIN 79-07
DATED APRIL 14, 1979, FOR
BROWNS FERRY NUCLEAR PLANT
SEISMIC STRESS ANALYSIS OF
SAFETY-RELATED PIPING

Item 1

Identify which, if any, of the methods specified below were employed or were used in computer codes for the seismic analysis of safety related piping in your plant and provide a list of safety systems (or portions thereof) affected:

Response Spectrum Model Analysis:

- a. Algebraic (considering signs) summation of the codirectional spatial components (i.e., algebraic summation of the maximum values of the codirectional responses caused by each of the components of earthquake motion at a particular point in the mathematical model).
- b. Algebraic (considering signs) summation of the codirectional inter model responses (i.e., for the number of modes considered, the maximum values of response for each mode summed algebraically).

Time History Analysis:

- a. Algebraic summation of the codirectional maximum or the time dependent responses due to each of the components of earthquake motion action simultaneously when the earthquake directional motions are not statistically independent.

Response to Item 1

TVA has thoroughly investigated all non-NSSS systems and has found that no analysis was performed using the Response Spectrum Model Analysis or Time History Analysis.

General Electric (GE) has thoroughly investigated all safety-related NSSS systems (recirculation piping and steam piping) and has found that no analysis was performed using the Response Spectrum Model Analysis or Time History Analysis. The subvendor under GE for the feedwater system piping has stated that based upon their review to date, none of the methods identified above were utilized in their computer codes.

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Item 2

Provide complete computer program listings for the dynamic response analysis portions for the codes which employed the techniques identified in Item 1 above.

Response to Item 2

As noted in the response to Item 1, TVA or General Electric used neither of the questioned analysis methods.

Item 3

Verify that all piping computer programs were checked against either piping benchmark problems or compared to other piping computer programs. You are requested to identify the benchmark problems and/or the computer programs that were used for such verifications or describe in detail how it was determined that these programs yielded appropriate results (i.e., gave results which corresponded to the correct performance of their intended methodology).

Response to Item 3

The computer code PISOLIA owned by EDS Nuclear Corporation was used to check the non-NSSS analysis. Sequoyah FSAR section 3.9.2.5.3 references this program and gives a further description with methods of verification.

The response to this item for the NSSS systems provided by GE are being prepared by the subvendors that performed those analyses. This response will be submitted to NRC as soon as the subvendor makes it available to TVA.

Item 4

If any of the methods listed in item 1 are identified, submit a plan of action and an estimated schedule for the re-evaluation of the safety related piping, supports, and equipment affected by these analysis techniques. Also provide an estimate of the degree to which the capability of the plant to safely withstand a seismic event in the interim is impacted.

Response to Item 4

This question is not applicable as a result of responses to Item 1 and 2.