GENERAL ELECTRIC

NUCLEAR ENERGY

PROJECTS DIVISION

GENERAL ELECTRIC COMPANY, 175 CURTNER AVE., SAN JOSE, CALIFORNIA 95125

MC 682, (408) 925-3732

MFN-195-79
RLG-105-79

July 31, 1979

U. S. Nuclear Regulatory Commission
Office of Nuclear Reactor Regulation
Washington, D. C. 20555

Attention: Mr. Darrell G. Eisenhut, Deputy Director
Division of Operating Reactors

Gentlemen:

SUBJECT: PISYS ANALYSIS OF NRC BENCHMARK PROBLEMS

Reference:
1) Letter, M. Hartzman (MEB, DSS) to R. O. Brugge (GE), Computer Code Verification, dated May 12, 1979
2) "PISYS Analysis of NRC Benchmark Problems, (Nos. 5, 323A, 6, 101, and 803)", NEDO-24210, to be published.

This is to notify you that General Electric's analysis of five NRC benchmark problems (Reference 1) using the PISYS seismic piping analysis computer code has been completed.

For all five benchmark problems, the PISYS results for the frequencies and the modal participation factors are in excellent agreement with the values given with the NRC problem definition. The agreement, in general, is within three or four significant digits.

The complete results of the PISYS analysis are being formally documented (Reference 2) and will be transmitted to you within 45 days of the date of this letter. The transmittal of the PISYS analysis results for the five benchmark problems will complete the fulfillment of all General Electric commitments that you have required in your PISYS code verification effort. A summary of the information which General Electric has provided is given in the attachment to this letter.

General Electric believes that the information to be provided will be sufficient to allow the Staff to complete their review of the seismic analysis methods employed in the PISYS code. This review should result

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in a Safety Evaluation Report (SER) approving the seismic analysis methods used in PISYS. This would allow the use of these methods by reference to the SER, without the need for further Staff review.

Questions or comments regarding this matter should be directed to Dr. L. M. Zull of my staff at (408) 925-5599.

Very truly yours,

R. L. Gridley, Manager
Operating Plant Licensing
Safety and Licensing Operation

RLG:cas/84K

Attachments

cc: L. S. Gifford

Vince Noonan, Manager
Engineering Branch

ATTACHMENT

SUMMARY OF GENERAL ELECTRIC INFORMATION PROVIDED
TO THE NRC ON THE PISYS CODE

The following chronological listing summarizes the information General Electric has provided to the NRC on the PISYS code.

1. On May 21, 1979, Dr. Gerald Mok (GE) brought the following information (Reference 1) to Bethesda, Maryland for review by Dr. Mark Hartzman of Mr. Darrell Eisenhut's staff:

   a. The source listing of the General Electric Company proprietary seismic analysis computer code known as PISYS.

   b. The User's Manual for the PISYS code.

   c. The computer output for the PISYS analysis of the Brunswick Units 1 and 2 recirculation lines.

2. On July 6, 1979 the following information was transmitted in Reference 2:

   a. Information responding to Part A of Reference 3.

   b. An interim progress report on the status of the PISYS calculations as of June 30, 1979.

3. The complete PISYS analysis results for the five NRC benchmark problems are being formally documented (Reference 4), and will be transmitted to the NRC by September 14, 1979.

REFERENCE

1. Letter, G. G. Sherwood (GE) to D. G. Eisenhut, "Computer Code PISYS," dated May 22, 1979 (MFN 143-79)

2. Letter, R. L. Gridley (GE) to D. G. Eisenhut (NRC), "PISYS Analysis of NRC Benchmark Problems," dated July 6, 1979 (MFN 182-79).

3. Letter, M. Hartzman (MEB, DSS) to R. O. Brugge (GE), Computer Code Verification, dated May 12, 1979.

4. "PISYS Analysis Results of NRC Benchmark Problems, (Nos. 5, 323A, 6, 101, and 803)," NEDO-24210, to be published.