



November 22, 1991

Mr. James Richardson
U.S. Nuclear Regulatory Commission
One White Flint North
11555 Rockville Pike
Rockville, MD 20852

Subject: USI A-46, Concerns With Significant Issues in SSER #2

Dear Mr. Richardson:

The purpose of this letter is to express our concern regarding new significant issues which may be raised by the NRC staff in their Supplemental Safety Evaluation Report #2 (SSER #2) on the Generic Implementation Procedure (GIP) Revision 2 developed by the Seismic Qualification Utility Group (SQUG) for resolution of USI A-46. We understand that SSER #2 may contain a number of "clarifications" and "interpretations" of the GIP guidelines and criteria and at least one new issue regarding use of Housner ground response spectra. Our understanding of the Housner spectra issue and our concerns with this subject, which include a potential expenditure of utility resources without a commensurate improvement in plant safety, are summarized in Attachment 1.

Based on our prior interaction with the Staff on previous revisions of the GIP, new issues (including clarifications and interpretations) which may be raised while developing the SSER #2 could result in numerous open items which could take several months to resolve. Given our mutual desire to avoid further delay in implementing USI A-46, and the possible impact on the licensee schedules for implementing the IPEEE, we believe that action should be taken to expeditiously resolve any potentially significant issues prior to issuance of the SSER. Accordingly, we recommend that we meet with you and the Staff in the near future to discuss any questions or comments you may have on Revision 2 of the GIP, especially the question related to Housner spectra. The intent of this meeting is to avoid potential further delays in the program.

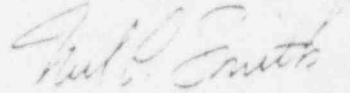
Attachment 1

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November 22, 1991

We would appreciate your consideration of our recommendation.

Sincerely,



Neil P. Smith
SOUG Chairman

Attachment

cc: G. Bagchi, NRC
T. Chan, NRC
P. Y. Chen, NRC
J. Conran, CRGR
B. D. Liaw, NRC
J. Norberg, NRC

SQUG Concerns With
NRC Position on Housner Spectra

It is our understanding that the NRC Staff considers that the seismic evaluations performed for A-46 plants with Housner ground motion design spectra should be conducted using 2% damped spectra to determine seismic demand, while using 5% damped spectra for equipment capacity. This is in conflict with the guidance of the SQUG Generic Implementation Procedure (GIP) which generally requires that equipment capacity and demand comparisons be made using 5% damped spectra. It also is a change in the NRC Staff position which, until recently, accepted these criteria which have been in the GIP since Revision 0.

We have discussed our concerns with members of the NRC Staff and have further evaluated the potential impact of this new Staff position. It is our conclusion that this use of 2% damping for the A-46 evaluation of equipment qualification in Housner spectra plants would lead to a needless expenditure of utility resources without a commensurate improvement in plant safety. Further, we find that this is not an isolated, plant-specific issue; it applies to over one-half of the SQUG member plants.

The main reasons for our concerns are summarized below.

1. We understand the reason for the NRC Staff's position is a concern that Housner spectra may not have adequate amplification by today's standards. If the Staff has technical concerns regarding ground or floor spectra in Housner plants, these concerns should be addressed as generic seismic questions, not inserted in the A-46 resolution. We note that the issue of seismic design margin (i.e., conservatism) of nuclear plants was evaluated under the Seismic Design Margin Program (SDMP) and the Eastern Seismicity Issue, which were eventually rolled into IPEEE. Any issue of lack of conservatism in plant seismic design will be identified and addressed in IPEEE.
2. The guidelines of the GIP which call for seismic demand versus capacity comparisons at 5% damping (1) have been in the GIP since Rev. 0, (2) have been reviewed and approved in the NRC's initial (July 1988) SER on the GIP, and (3) have been reviewed and found acceptable by SSRAP.
3. Use of 2% damped floor spectra for comparison with 5% equipment capacity spectra is inconsistent with NRC and industry standards for equipment seismic qualification which call for these comparisons to be made at the same damping values. For example, if IEEE 344-75 were used for seismic qualification of an item of equipment, the seismic demand, i.e., the Required Response

Spectrum (RRS), would be compared to a shake table Test Response Spectrum (TRS) at the same damping level. Use of a 2% damping demand for Housner plants in conjunction with 5% test capacity spectra would call into question all equipment qualification performed in accordance with IEEE 344-75 for these plants. This is clearly not justified.

4. Floor response spectra for nuclear power plants are often very conservatively computed. The Seismic Safety Margin Research Program (SSMRP) has demonstrated that large conservatisms exist in traditionally computed floor response spectra versus median floor response spectra. We are concerned that requiring use of 2% damped floor response spectra for Housner plants, instead of the damping values contained in the GIP, will result in additional unnecessary conservatism.

As a case in point, we note that use of 2% damped floor response spectra for two different Housner plants, located east of the Rocky Mountains, with PGAs of 0.12g and 0.15g would result in assigning a very high seismic demand to all the equipment in the control rooms. These seismic demands would significantly exceed the equipment capacities (1.5 x Bounding Spectrum) based on earthquake experience data obtained from substantially higher earthquake levels (with PGAs up to 0.42g to 0.55g). This is clearly an unreasonable technical result.

We are concerned that this issue may result in significant additional conservatism being imposed in the "11th hour." This would be inconsistent with the good faith effort on the part of SQUG licensees to work with the NRC Staff to develop an overall approach for resolution of USI A-46. We welcome the opportunity to discuss this issue with the NRC staff.