UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

November 19, 1992

Docket Nos. 50-269, 50-270
and 50-287

Mr. J. W. Hampton
Vice President, Oconee Site
Duke Power Company
P. O. Box 1439
Seneca, South Carolina 29679

Dear Mr. Hampton:

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION REGARDING OCONEE RESPONSE TO SUPPLEMENT NO. 1 TO GENERIC LETTER (GL) 87-02 (TAC NOS. M69464, M69465, AND M69466)

By letter dated September 21, 1992, you responded to Supplement No. 1 to GL 87-02, dated May 22, 1992, that transmits Supplemental Safety Evaluation No. 2 (SSER NO. 2) on the Seismic Qualification Utility Group's (SQUG) Generic Implementation Procedure, Revision 2, as corrected on February 14, 1992 (GIP-2). The NRC staff has determined that additional information is needed in order to complete its review of the acceptability of the Oconee in-structure response spectra. Accordingly, please provide responses to the questions identified in Enclosure 1 within 30 days of the date of this letter. NRC response to the additional information will be in accordance with the guidelines stated in Item I.2 of Enclosure 2.

In addition, although your response specifically commits to follow the SQUG commitments in GIP-2, you also state that you will only be generally guided by the implementation guidance of GIP-2 which you identify as "non-commitments." In accepting GIP-2 as a method for resolving USI A-46, it was the staff's understanding that the SQUG members who chose to implement GIP-2 would essentially use the entire procedure, including the SQUG commitments, which contain the general programmatic objectives and goals, and the implementation guidance, which contains the specific criteria and procedures to be used for the resolution of USI A-46. This understanding was the basis for the staff's position, which was stated in SSER No. 2, that if the licensee commits to use GIP-2 for the implementation of USI A-46, it must commit to both the SQUG commitments and the use of the entire implementation guidance provided in GIP-2, unless otherwise justified to the staff. In order to allow some flexibility in implementing GIP-2, the staff acknowledged in the supplement to GL 87-02 that SQUG members who commit to GIP-2 (both the SQUG commitments and the implementation guidance) may deviate from it provided that such deviations are identified, documented and justified. However, it was also indicated in SSER No. 2 that if a licensee uses methods that deviate from the criteria and procedures described in the SQUG commitments and in the implementation guidance of GIP-2 without prior NRC approval, the staff may find the use of such methods unacceptable with regard to satisfying the provisions of GL 87-02. Therefore, the staff requests clarification of your commitment to implement both the SQUG commitments and the implementation guidance.

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If you do not intend to commit to the implementation guidance contained in GIP-2, then, in accordance with Supplement No. 1 to GL 87-02, you should submit for staff review, prior to implementation, your alternative criteria and procedures for responding to GL 87-02. If this case applies, and you have not committed to any acceptable alternative criteria and procedures for resolving USI A-46, it is the staff's position that it is inappropriate at this time to change the licensing basis methodology, via 10 CFR 50.59, for verifying the seismic adequacy of electrical and mechanical equipment in the manner described in your submittal. You should further note that the staff does not concur with all of the SQUG's clarifications and positions stated in the August 21, 1992, letter from SQUG to the NRC. Thus, you should not merely follow this letter for implementing GIP-2, but, in addition, should refer to the staff's response to the SQUG letter provided in Enclosure 2. If you have questions regarding these matters, contact me at (301) 504-1495.

The information requested by this letter is within the scope of the overall burden estimated in GL 87-02 for the SQUG program, which was a maximum of 120-person hours per owner response period. This request is covered by Office of Management and Budget Clearance Number 3150-0011, which expires on May 31, 1994.

Sincerely,

/s/
L. A. Wiens, Project Manager
Project Directorate II-3
Division of Reactor Projects-I/II
Office of Nuclear Reactor Regulation

Enclosures:
1. Request for Additional Information
2. NRC Letter to SQUG, dated October 2, 1992

cc w/enclosures:
See next page

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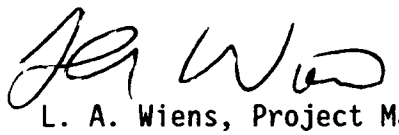
Sincerely,



L. A. Wiens, Project Manager
Project Directorate II-3
Division of Reactor Projects-I/II
Office of Nuclear Reactor Regulation

Enclosures:
1. Request for Additional Information
2. NRC Letter to SQUG, dated October 2, 1992

cc w/enclosures:
See next page

Mr. J. W. Hampton
Duke Power Company

Oconee Nuclear Station

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ENCLOSURE 1

REQUEST FOR ADDITIONAL INFORMATION

OCONEE SQUG RESPONSE

The licensee stated that the plant design utilizes the properly scaled time-history record of the N-S, May 1940 El Centro earthquake. The 0.1g ground acceleration response spectrum represents the ground motion for all of the site structures. The licensee also stated that the plant is founded on rock formation and, therefore, no soil-structure interaction analysis was performed in determining the plant seismic response. No background information is provided to substantiate the statement regarding rock formation. Review of the FSAR did not indicate that all the structures are founded on rock. The structural system is idealized as a mathematical model consisting of a lumped mass system interconnected by elastic members. The in-structure response spectra (IRS) were generated using the above noted ground motion and structural model. There are some spectra that are without broadened peak.

Structural damping values are specified in the FSAR as a function of building and structural material such as steel and concrete. The same damping values were used for both SSE and OBE. Damping values for some of the concrete buildings are high, thus, making the damping value used for the in-structure response spectra potentially unconservative.

Also, the submittal does not state whether only one component of the horizontal earthquake motion was used for the structural analyses or two orthogonal components. However, the staff review of the FSAR indicated that seismic forces are applied in the vertical and in any horizontal direction. It does not indicate whether two orthogonal horizontal components are used together with a vertical component. The FSAR also indicated that the horizontal and vertical components of ground motion are applied simultaneously. It does not state whether they are combined in absolute sum or algebraic sum. Therefore, the staff is unable to assess the conservatism associated with input motion.

The submittal stated that "in generating the in-structure response spectra (IRS) curve, the time history technique was utilized." No comparison was provided between the original spectra and the spectra that correspond to the time history utilized to generate the IRS. For this reason, the staff was unable to determine conservatism in the generation of the in-structure response spectra. The staff considers the time history input motion as conservative when its spectra envelop the original spectra.

Based on the above discussion, the staff requests additional information as stated below:

1. Please provide a description of the foundation characteristics of the various buildings where safety equipment is housed in order to justify your determination that the supporting media can be classified as rock and thus require no consideration of soil-structure interaction.

2. Describe the basis and methodology used to broaden peak spectra.

3. State how many horizontal components of the ground motion are used in input motion in generating in-structure response spectra and describe how the horizontal and vertical forcing function components are combined, i.e., algebraic or absolute sum.

4. Provide a discussion of the conservatism associated with the time history input by comparing its spectra with the original spectra.

ENCLOSURE 2

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

OCT 02 [redacted]

Mr. Neil Smith, Chairman
Seismic Qualification Utility Group
c/o EPRI
1019 19th Street, N.W.
Washington, DC 20036

SUBJECT: NRC RESPONSE TO SEISMIC QUALIFICATION UTILITY GROUP (SQUG)

Re: Letter, N. Smith, EPRI, To J. Partlow, NRR, dated August 21, 1992, concerning USI A-46 Issues.

Dear Mr. Smith:

This is to acknowledge the receipt of the SQUG response to Supplement No. 1 to Generic Letter (GL) 87-02, and Supplemental Safety Evaluation (SSER) No. 2, on the SQUG Generic Implementation Procedure for Seismic Verification of Nuclear Plant Equipment, Revision 2, as corrected February 14, 1992 (GIP-2). The NRC staff believes that successful implementation of the entire GIP-2, supplemented by the staff's SSER No. 2, by each SQUG licensee will result in cost-effective plant safety enhancement for their USI A-46 plants.

The staff also believes that the positions delineated in Supplement No. 1 to GL 87-02 and SSER No. 2 are clear and correct, and should not be misinterpreted. The staff's comments on SQUG's August 21, 1992, letter and attachment are provided in the enclosure to this letter. If you need further clarification concerning our response, please contact Mr. James Norberg at 504-3288.

Sincerely,

James G. Partlow
Associate Director for Projects
Office of Nuclear Reactor Regulation

Enclosure:
As stated

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ENCLOSURE

I. NRC's Comments on the SQUG Letter of August 21, 1992:

1. In regard to the issue of seismic qualification, the staff reiterates the position stated in the SSER No. 2, in that the GIP-2 methodology is not considered to be a seismic qualification method, rather, it is an acceptable evaluation method, for USI A-46 plants only, to verify the seismic adequacy of the safe-shutdown equipment and to ensure that the pertinent equipment seismic requirements of General Design Criterion 2 and the purpose of the NRC regulations relevant to equipment seismic adequacy including 10 CFR Part 100 are satisfied.

2. The second paragraph on page 2 of your letter addressed the issue of timing of staff response to additional information requested from a licensee. Although you are correct in your statement regarding the sixty-day period for response to initial submittal of in-structure response spectra (ISRS) information, we do not agree that the same concept applies to a licensee's submittal of additional information received following a rejection or a question from the staff. To eliminate any potential misunderstanding in this regard, the staff has determined that it will respond to any submittal of additional information received from a licensee within 60 days. However, in this response, the staff will either state its approval (or rejection) of the information provided, or indicate the time duration needed for the review of such information, prior to transmitting a follow-up response of acceptance (or rejection) to the licensee. This time duration will vary depending on the complexity of the submittal.

3. Regarding the EBAC and ANCHOR computer codes, the staff's evaluations and concerns stated in the SSER No. 2 are correct and valid. The ANCHOR code does not consider the effects of base plate flexibility on the anchorage capacity.

4. With respect to transfer of knowledge regarding major problems identified, and lessons learned, in the USI A-46 plant walkdowns and third-party reviews, we request that you include the NRC in the distribution of written communications to all member utilities in this regard, and inform the NRC staff of any planned workshops on A-46 implementation for possible staff participation.

II. NRC's Comments on the Procedure for Reviewing the GIP

1. The staff supports SQUG's establishment of a Peer Review Panel composed of seismic experts since it should serve to enhance the review process of substantive changes to the technical requirements in the GIP, prior to its submittal to NRC for approval. However, since the NRC no longer intends to help finance a Peer Review Panel, the staff does not believe it

is appropriate to participate in the selection of the Peer Review members, who will be financed by SQUG/EPRI. We would like to emphasize that staff's review of a proposed GIP change will receive thorough independent NRC evaluation and will be assessed on its merits.

2. With respect to the NRC review and approval of the changes to the GIP (Item 5, page 3 of the procedure), the staff's position on the issue of its response timing is identical to that delineated in the response to a licensee submittal of additional information (refer to item 2 of NRC's Comments on the SQUG letter in this enclosure). This comment also applies to the section "LICENSING CONSIDERATIONS" on page 5 of the Attachment to the SQUG letter.

3. With respect to item 4, "Additional Restrictions," the text should be expanded to reflect that new information which indicates that existing GIP criteria and guidelines may be unconservative should be evaluated for potential 10 CFR Part 21 implications.