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HL-2399  
003945

September 16, 1992

U.S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, D.C. 20555

PLANT HATCH - UNITS 1, 2  
NRC DOCKETS 50-321, 50-366  
OPERATING LICENSES DPR-57, NPF-5  
RESPONSE TO SUPPLEMENT 1 TO  
GENERIC LETTER 87-02 ON SQUG RESOLUTION OF USI A-46

Gentlemen:

On February 19, 1987, the NRC issued Generic Letter 87-02, "Verification of Seismic Adequacy of Mechanical and Electrical Equipment in Operating Reactors, Unresolved Safety Issue (USI) A-46." This Generic Letter encouraged utilities to participate in a generic program to resolve the seismic verification issues associated with USI A-46. As a result, the Seismic Qualification Utility Group ("SQUG") developed the "Generic Implementation Procedure (GIP) for Seismic Verification of Nuclear Plant Equipment." On May 22, 1992, the NRC Staff issued Generic Letter 87-02, Supplement 1, which constituted the NRC Staff's review of the GIP and which included Supplemental Safety Evaluation Report Number 2 ("SSER-2") on the GIP, Revision 2, corrected on February 14, 1992. The letter to SQUG enclosing SSER-2 requests that SQUG member utilities provide to the NRC, within 120 days, a schedule for implementing the GIP. By letter dated August 21, 1992, to James G. Partlow, NRR-NRC, SQUG clarified that the 120 days would expire on September 21, 1992.

The Plant Hatch response to the Staff's request for a schedule of GIP implementation, along with a commitment to the GIP, the plant in-structure response spectra, and the seismic design licensing basis is included in Enclosure I. Further detail regarding the Plant Hatch in-structure response spectra is included in Enclosure II.

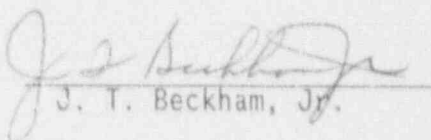
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U.S. Nuclear Regulatory Commission  
September 16, 1992  
Page Two

Mr. J. T. Beckham, Jr. states he is duly authorized to execute this oath on behalf of Georgia Power Company, and to the best of his knowledge and belief, the facts set forth in this letter are true.

GEORGIA POWER COMPANY

BY:   
J. T. Beckham, Jr.

Sworn to and subscribed before me this 15<sup>th</sup> day of September 1992.

  
Notary Public

DLM/cr

MY COMMISSION EXPIRES: NOV 30, 1996

Enclosures

1. Response to Supplement 1 to Generic Letter 87-02
2. Plant Hatch In-Structure Response Spectra for Resolving USI A-46

cc: Georgia Power Company  
Mr. H. L. Sumner, General Manager - Nuclear Plant  
NORMS

U.S. Nuclear Regulatory Commission, Washington, D.C.  
Mr. K. Jabbour, Licensing Project Manager - Hatch

U.S. Nuclear Regulatory Commission, Region II  
Mr. S. D. Ebnetter, Regional Administrator  
Mr. L. D. Wert, Senior Resident Inspector - Hatch

## ENCLOSURE 1

PLANT HATCH - UNITS 1, 2  
NRC DOCKETS 50-321, 50-366  
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### COMMITMENT TO GIP

#### GIP Commitments

As a member of SQUG, Georgia Power Company (GPC) commits to use the SQUG methodology as documented in the GIP, where "GIP" refers to GIP Revision 2, corrected February 14, 1992, to resolve USI A-46 at Plant Hatch Units 1 and 2. The GIP, as evaluated by the Staff, permits licensees to deviate from the SQUG commitments embodied in the Commitment sections, provided the Staff is notified of substantial deviations prior to implementation. GPC recognizes that the Staff's position in SSER-2 "is that if licensees use other methods that deviate from the criteria and procedures as described in SQUG commitments and in the implementation guidance of the GIP, Rev. 2, without prior NRC staff approval, the method may not be acceptable to the staff and, therefore, may result in a deviation from the provisions of" Generic Letter 87-02.

Specifically, GPC hereby commits to the SQUG commitments set forth in the GIP in their entirety, including the clarifications, interpretations, and exceptions identified in SSER-2 as clarified by the August 21, 1992, SQUG letter responding to SSER-2.

#### GIP Guidance

GPC generally will be guided by the remaining (non-commitment) sections of the GIP, i.e., GIP implementation guidance, which comprises suggested methods for implementing the applicable commitments.

### IN-STRUCTURE RESPONSE SPECTRA

For defining seismic demand, GPC will use the options provided in the GIP as appropriate. When the option of using in-structure response spectra (IRS) for a specific floor or elevation is applied, the seismic margin earthquake IRS times one-half will be used. Enclosure 2 provides the basis for the use of these IRS. References given in Enclosure 2 include previous submittals associated with the IRS for USI A-46 and their development.

### SCHEDULE

Given the magnitude of the effort required to achieve resolution of USI A-46, final implementation must be carefully integrated with outage schedules and the seismic IPEEE response, the completion of which may be affected by the A-46

ENCLOSURE 1 (Continued)

PLANT HATCH - UNITS 1, 2

GENERIC LETTER 87-02 ON SQUG RESOLUTION OF USI A-46

implementation start date. Considering the workload set forth by the criteria of the GIP, a Seismic Evaluation Report summarizing the results of the A-46 program at Plant Hatch will be submitted to the NRC by June 1, 1995. However, the A-46 program completion schedule may be affected by coordination with the seismic IPEEE response, the scope and schedule for completing the necessary SQUG training, and by the availability of industry resources which may be unavailable because of the large number of licensees implementing this program.

Regarding in-structure response spectra, if the Staff does not respond by accepting, questioning, or rejecting the spectra within sixty days, the Staff is deemed to have accepted our spectra, and we may proceed with implementation. If a rejection or question is received from the Staff, we will provide additional information to the Staff to resolve the problem. If the Staff takes no action on this new information for sixty days, the Staff is deemed to have accepted our resolution and we may proceed with implementation. When the Staff is deemed to have accepted our position by inaction for sixty days, as noted above, any subsequent Staff action to reject our position will be considered a changed staff position requiring 10 CFR 50.109 considerations.

PLANT SEISMIC LICENSING BASIS

Plant Hatch intends to change its licensing basis methodology for verifying the seismic adequacy of new and replacement, as well as existing, electrical and mechanical equipment consistent with guidelines in GL 87-02, Supplement 1, upon receipt of a final plant-specific SER resolving USI A-46. This change will be conducted under 10 CFR 50.59 and will be consistent with the guidance in section 2.3.3 or Part I of the GIP, Revision 2, and with the clarifications, interpretations, and exceptions identified in SSER-2 as clarified by the August 21, 1992, SQUG letter responding to SSER-2. Any necessary changes to the FSAR will be provided in accordance with 10 CFR 50.71(e).

ENCLOSURE 2

PLANT HATCH - UNITS 1, 2  
NRC DOCKETS 50-321, 50-366  
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GENERIC LETTER 87-02 ON SQUG RESOLUTION OF USI A-46

PLANT HATCH IN-STRUCTURE RESPONSE SPECTRA FOR RESOLVING USI A-46

PURPOSE:

This document discusses the seismic in-structure response spectra (IRS) for use at Plant Hatch for resolution of Unresolved Safety Issue (USI) A-46. These IRS were used in the Unit 1 USI A-46 work performed in 1988-89. Georgia Power Company (GPC) plans to use these same IRS to finalize any remaining Unit 1 USI A-46 evaluations as well as for the Unit 2 USI A-46 effort.

DISCUSSION:

Georgia Power Company has successfully completed a Seismic Margin Assessment (SMA) program that included combining compatible portions of the Seismic Qualification Utility Group (SQUG) Generic Implementation Procedures (GIP), Rev. 0, with the EPRI SMA methodology. The NRC was actively involved in this effort, including reviews by the NRC Seismic Design Margins Working Group, an NRC peer review group made up of industry experts, and by NRC staff and an NRC consultant involved in the USI A-46 program. This effort demonstrated the benefit of combining the compatible portions of both programs. References 2, 3, 4, 5 and 6 refer to the final report on the Plant Hatch Unit 1 SMA and the review reports from the NRC peer review group and the NRC Seismic Design Margins Working Group.

The Plant Hatch Unit 1 SMA was performed using a seismic margin earthquake (SME) based on the NUREG/CR-0098 median centered spectra shape tied to a peak ground acceleration of 0.3g. In-structure response spectra were developed for the Hatch SMA program. The soil-structure interaction (SSI) procedures and the SME IRS were reviewed and accepted for the margin program by the NRC Seismic Design Margins Working Group, the NRC peer review group, and NRC soil consultants, Prof. R. V. Whitman and Dr. G. Castro (Ref. 2, 3 and 4). The seismic IRS used for the USI A-46 portion of this combined assessment was 1/2 the SME IRS since the Plant Hatch Unit 1 design basis earthquake (DBE) is less than or equal to 1/2 the SME as shown in Attachment A. (The Plant Hatch Unit 1 DBE is a Housner ground spectra tied to a peak ground acceleration of 0.15g.) The SME IRS were submitted to the NRC for the Plant Hatch Unit 1 USI A-46 program in a letter dated March 14, 1989 for use in the USI A-46 NRC review (Ref. 1). A summary of the SSI response analyses, as well as the SME IRS, were also provided to the NRC Seismic Design Margins Working Group (Ref. 7). Additionally, Chapter 5 of the final SMA report entitled "Seismic Margin Assessment of Edwin I. Hatch Nuclear Plant Unit 1" provided to the NRC under letter dated July 20, 1990 also provides discussion of the development of in-structure response spectra (Ref. 6).



ENCLOSURE 2 (Continued)

GENERIC LETTER 87-02 ON SQUG RESOLUTION OF USI A-46

PLANT HATCH IN-STRUCTURE RESPONSE SPECTRA FOR RESOLVING USI A-46

The use of 1/2 the SME IRS is adequately conservative for both units considering the additional guidance provided in Revision 2 of the SQUG GIP concerning the definition of in-structure response spectra for resolving A-46 for the following reasons:

1. The 5% damped Unit 1 DBE, which is a Housner ground response spectra, is significantly enveloped by 1/2 X 5% damped SME spectra. This is shown in Attachment A. Any issues related to the use of Housner ground response spectra to resolve USI A-46 should not apply to Unit 1 since a ground spectra with significantly more spectra amplification is used to resolve USI A-46.
2. The 5% damped Unit 2 DBE, which is a modified Newmark Spectra, is enveloped by 1/2 X 5% damped SME spectra. This comparison is shown in Attachment B. Thus, it can be said that Unit 2 will be evaluated for USI A-46 using a ground response spectra equal to or larger than the unit's DBE. It should be noted that Unit 2, which was licensed after Unit 1, is a sister unit to Unit 1. Other than the Reactor Buildings, both units share the same Seismic Category I structures (e.g., Control Building, Diesel Generator Building and Intake Structure).
3. The soil-structure interaction analyses used to develop the SME IRS are very close to the requirements specified in the current Standard Review Plan (SRP). Therefore, the 1/2 SME IRS would generally meet the definition of "conservative design" IRS per GIP section 4.2.4. However, the Unit 1 USI A-46 evaluation considered these IRS as median-centered type response spectra by using multiplication factors per the GIP to increase the seismic demand for equipment anchorage and Generic Equipment Ruggedness Spectra (GERS) evaluations. In a similar manner, this conservative treatment of the 1/2 SME IRS will be used for the USI A-46 portion of the evaluation of Unit 2.

CONCLUSION:

The IRS for resolution to USI A-46 is defined as 1/2 the SME IRS for both Plant Hatch Units 1 and 2. One half the SME ground response spectra is equal to or greater than either of the DBEs for these units. These IRS are also treated as median-centered type response spectra as discussed previously even though they generally meet the definition of "conservative design" IRS per the GIP. Due to these facts, the use of 1/2 SME IRS is considered a proper interpretation of the requirements for resolving USI A-46.

ENCLOSURE 2 (Continued)

GENERIC LETTER 87-02 ON SQUG RESOLUTION OF USI A-46

PLANT HATCH IN-STRUCTURE RESPONSE SPECTRA FOR RESOLVING USI A-46

As was successfully done for Unit 1, GPC will combine compatible portions of the SQUG GIP with the EPRI SMA methodology for resolution of USI A-46 for Unit 2, and will use 1/2 the SME IRS for the USI A-46 IRS. This will ensure consistency between the work already performed for Unit 1 and the assessment to be performed for Unit 2.

A list of references are included that refer to the previous submittal of the SME IRS for the USI A-46 program and the details of the SSI analyses. References for the Hatch Unit 1 SMA report and associated review reports, as well as the Supplemental Safety Evaluation Report regarding the Hatch Seismic Design, are also included.

REFERENCES:

1. Letter dated March 14, 1989 from W. G. Hairston, III of Georgia Power Company to the NRC, (Plant Hatch Unit 1, NRC Docket No. 50-321, Operating License DPR-57 Seismic Margin Assessment Floor Response Spectra) w/enclosure: "Summary of Seismic Response Analysis Performed for the Hatch Unit 1 SMA" and a copy of the 5% damped SME In-Structure Response Spectra.
2. Letter dated April 29, 1990 from Dan Guzy of the USNRC, RES Co-chairman to the Seismic Design Margins Working Group concerning the Hatch Seismic Margins Review - "Resolution and closure of all soils issues in the Hatch review."
3. Letter dated July 5, 1991 from Dr. Michael P. Bohn of Sardis National Laboratories to Dr. Nilesh Chokshi of the USNRC w/enclosed report: "Independent Evaluation of the Hatch Seismic Margin Assessment Seismic Building Response and Floor Spectra."
4. Memorandum dated May 2, 1990 from Dan Guzy, RES Co-chairman and Goutam Bagchi, NRR Co-chairman of the Seismic Design Margins Working Group entitled "Final Evaluation of the Hatch Seismic Margins Review."
5. Letter dated May 3, 1990 from D. R. Davis, Chairman, Hatch Seismic Margin Assessment Peer Review Group to Dan Guzy, NRC RES Co-Chairman of the Seismic Design Margins Working Group w/enclosed report: "Hatch SMA Peer Review Group Final Report: Evaluation of the Application of the NRC and EPRI Seismic Margin Methodologies."
6. Letter dated July 20, 1990 from W. G. Hairston, III of Georgia Power Company to the NRC w/enclosed report: "Seismic Margin Assessment of Edwin I. Hatch Nuclear Plant Unit 1."

ENCLOSURE 2 (Continued)

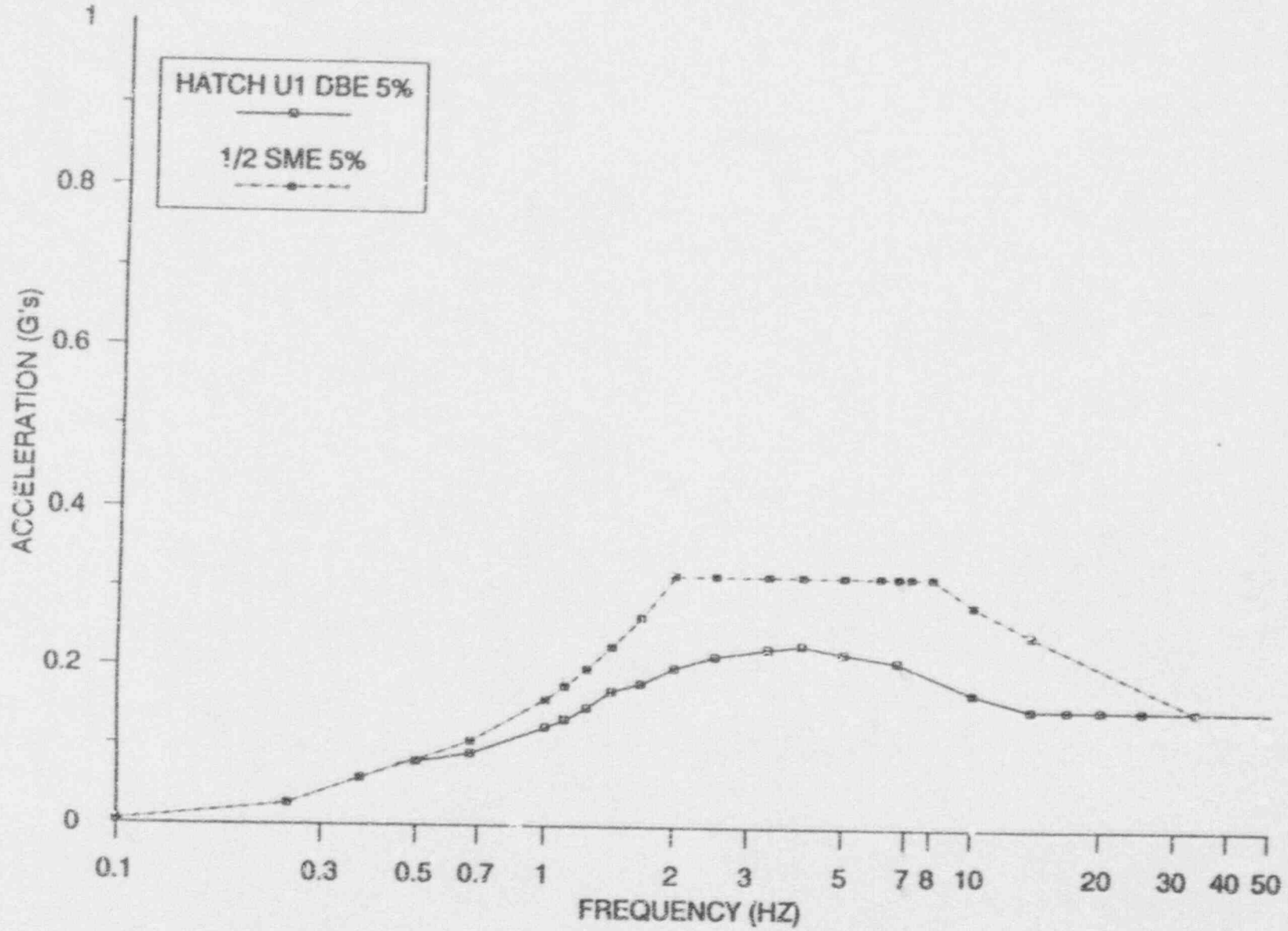
GENERIC LETTER 87-02 ON SQUG RESOLUTION OF USI A-46

PLANT HATCH IN-STRUCTURE RESPONSE SPECTRA FOR RESOLVING USI A-46

7. Letter dated April 16, 1991 from Kahtan N. Jabbour, NRC Project Manager, to W. G. Hairston, III of Georgia Power Company concerning "Seismic Design Issues - Edwin I. Hatch Nuclear Plant, Units 1 and 2" w/enclosure "Supplemental Safety Evaluation by the Office of Nuclear Reactor Regulations Regarding Hatch Seismic Design Georgia Power Company, Edwin I. Hatch Nuclear Plant, Units 1 and 2 Docket Nos. 50-321 and 50-366."



ATTACHMENT A



ATTACHMENT B

