

Docket No's: 50-219

FEB 16 1988

LICENSEE: GPU Nuclear Corporation

FROM: Alexander W. Dromerick, Project Manager  
Project Directorate I-4  
Division of Reactor Projects I/II

SUBJECT: SUMMARY OF DECEMBER 21, 1987 MEETING WITH GPU NUCLEAR CORPORATION (GPUN) TO DISCUSS MATTERS RELATED TO NEW SEISMIC FLOOR RESPONSE SPECTRA FOR OYSTER CREEK NUCLEAR GENERATING STATION

On Monday, December 21, 1987 a meeting was held at NRC, Bethesda, Maryland with GPUN (the licensee) to discuss the licensee's proposed methodology to develop new seismic floor response spectra for the Oyster Creek Nuclear Generating Station. Attachment 1 is the list of individuals participating in the discussion.

The following is a summary of the items discussed.

A detailed discussion was held regarding our letter to the licensee dated December 16, 1987 (Attachment 2) concerning the two options recommended by the staff for use by the licensee for future seismic qualification work at the Oyster Creek Generating Nuclear Station. As a result of the discussion, our letter of December 16, 1987 was modified to include a sub option under option 1 (i.e. to use the SEP site specific spectra at the foundation level).

With respect to Option 2, details regarding the consistency of the site specific analysis were discussed. The staff provided the licensee with appropriate guidelines to be used for any of the options selected by the licensee.

~~Alexander W. Dromerick~~  
Alexander W. Dromerick, Project Manager  
Project Directorate I-4  
Division of Reactor Projects I/II

Enclosures:  
As stated

cc w/enclosures

See next page

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Mr. P. B. Fiedler  
Oyster Creek Nuclear Generating Station

Oyster Creek Nuclear  
Generating Station

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ATTACHMENT 1

ATTENDANCE LIST

OYSTER CREEK NUCLEAR GENERATING STATION

DECEMBER 21, 1987 - MEETING

NAME

ORGANIZATION

Alexander Dromerick	NRC/NRR/Project Manager, PDI-4
Hans Ashar	NRC/NRR/DEST/ESGB
Robert L. Rothman	NRC/ESGB
Leon Reiter	NRR/ESGB
Morris Reich	BNL
A.T. Phillippalopols	BNL
P. Tatnaik	State of N.J.
E. F. O'Connor	GPUN
L. E. Malik	URS/Blume
A. P. Rochino	GPUN
Y. Nagai	GPUN
G. Capoanno	GPUN
C. P. Tan	NRR/ESGB
Leon Garibian	GPUN
George Klimkiewicz	Weston Geophysical
Richard Holt	Weston Geophysical

MEETING SUMMARY DISTRIBUTION

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NRC Participants  
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Hans Ashar  
Robert L. Rothman  
Leon Reiter  
C. P. Tan



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

DEC 16 1987

Mr. P. B. Fiedler  
Vice President and Director  
Oyster Creek Nuclear Generating Station  
Post Office Box 388  
Forked River, New Jersey 08731

Dear Mr. Fiedler:

SUBJECT: METHODOLOGY TO DEVELOP NEW SEISMIC FLOOR RESPONSE SPECTRA FOR OYSTER CREEK NUCLEAR GENERATING STATION

On November 17 and 18, 1987 the staff conducted an audit at URS/Blume in San Francisco, California, concerning the soil structure interaction (SSI) analysis. GPU Nuclear Corporation plans to use the analysis for developing the floor response spectra for future work at the Oyster Creek Nuclear Generating Station. As a result of the audit, the staff concluded that in general the methodology used was appropriate. However, the staff has certain concerns regarding the site specific spectra and its usage.

As discussed during the teleconference on this subject on December 10, 1987, the staff is recommending two options for use by the licensee for future seismic qualification work at the Oyster Creek Nuclear Generating Station. For the option selected, the licensee is requested to provide the study results which account for the following factors prior to implementation.

1. Variations in soil properties
2. Modelling uncertainties
3. Computational parameters and their limitations
4. Verification and validation of computer code with the measured results
5. Power Spectral density for the time history being used
6. Effect of saturated soil
7. Torsional effects on structures

Option 1

- (a) Use the 0.75 SEP design spectra (Regulatory Guide 1.60 shaped spectra) in the free-field at foundation level.
- (b) Use the design spectra compatible ground motion applied at the bottom of the first soft soil layer (i.e. E1.6'-0"). The design spectra compatibility may be established via use of a properly verified computer code such as SUPER FLASH
- (c) Perform the appropriate SSI analysis.
- (d) Limit the maximum reduction in the basemat spectral ordinates from those of design spectra to 25%.

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Option 2

(a) Use the proposed revision to SRP Sections 2.5.2, 3.7.1, 3.7.2 (alternate 2) and 3.7.3 consistently to perform response analysis. In this context, the licensee is advised to develop a free-field site-specific ground motion for the Oyster Creek site.

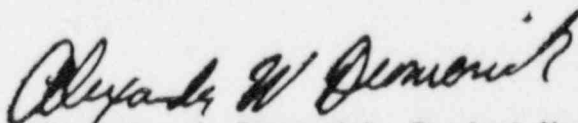
The suite of records chosen should be those from magnitude ( $m_b$ )  $5.3 \pm (0.5$  or less) earthquakes at distances less than 25km at sites whose local site conditions are similar to the Oyster Creek site. If such records are not available, a suite of site specific rock records should be assembled where point of input is at hypothetical rock outcrop. If possible both approaches should be used, and postulated ground motion should be compared (after appropriate deconvolution) at common reference points (e.g. soil surface, bottom of foundation). As in past licensing applications of site specific spectra, there should be coordination with the staff to avoid misunderstandings and delays.

(b) This input should be used for a detailed SSI analysis

If Option 2 is selected, the results of the analysis will be evaluated by the staff to (1) assure consistency of various elements (e.g. input motion, SSI) with each other, (2) assure consistency with physically reasonable phenomena and (3) determine limitations if necessary, that need to be applied to its application.

The reporting and/or recordkeeping requirements contained in this letter affect fewer than 10 respondents; therefore, OMB clearance is not required under P.L. 96-511.

Sincerely,



Alexander W. Dromerick, Project Manager  
Project Directorate I-4  
Division of Reactor Projects I/II

cc: See next page