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U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
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Washington, DC 20555

Gentlemen:

Subject: Oyster Creek Nuclear Generating Station
Docket No. 50-219
Upgrade of Pipe supports and Anchorages to Meet IEB 79-02
and IEB 79-14 Using the New Floor Response Spectra.

Your letter of September 15, 1989 described your understanding of the progress to date in resolving the IEB 79-02 and IEB 79-14 evaluation and modification programs for Oyster Creek and required GPUN take the following actions:

- "All the pipe supports must meet the provisions of IEB 79-14 using the loads from the original FSAR criteria."
- "All the support anchorages must meet the provisions of IEB 79-02 using the loads from the original FSAR criteria."
- "Analysis results and implementation of any modifications required should be completed prior to restart from the 13R refueling outage."

The following more fully describes the current status and response to the above requirements:

Modifications were performed during refueling outage 12R at Oyster Creek to upgrade supports and anchorages in accordance with IEB 79-02/14. These modifications for the most part satisfied the higher of the loads calculated based on either the "original FSAR criteria" or the 1987 Blume floor response spectra developed from the Oyster Creek SEP ground response spectra. There are 23 supports which were not upgraded since an upgrade was not required based on the results of the 1987 Blume analysis as described in our letter dated September 19, 1988. In addition, there are several supports which were upgraded for the Blume loads but not for the original Housner loads. These 30 are the supports which remain in question out of the 691 supports covered by the IE Bulletins.

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As previously discussed with the NRC Region I office, the methodology used for seismic analysis in accordance with the "original FSAR criteria" is based upon three dimensional pipe stress dynamic models without the missing mass correction. The seismic input to the pipe stress analyses consists of $\frac{1}{4}$ damped ground Housner SSE spectrum anchored at a zero period acceleration (ZPA) of 0.22g for the horizontal directions. The vertical input is $\frac{2}{3}$ of the horizontal. All inputs are applied simultaneously. The three spatial responses and all modes are then combined using square-root-sum of the square (SRSS) to develop final loads. This is a considerable upgrade over the original design which consisted of static analyses using the peak of the $\frac{1}{4}$ damped ground Housner OBE spectrum anchored at a ZPA of 0.11g.

As an alternative to completing modifications in accordance with the above criteria, GPUN has been and is currently working with the NRC to develop more technically justifiable floor response spectra for the Oyster Creek reactor building. A meeting was held on September 27, 1989 in which the results of our development of a site specific ground response spectrum (SSRS) were presented to the staff. The report detailing this effort was formally transmitted to the NRC on October 11, 1989. We are currently in the process of developing the basemat input for the reactor building based on the OC SSRS. This will be the subject of future meetings with the NRC staff.

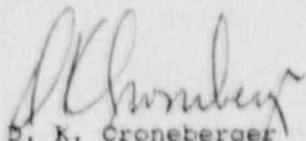
Once a SSRS and suitable SSI methodology is agreed to, GPUN will review the existing pipe stress analyses for hardware impact. These analyses consist of three dimensional pipe stress dynamic models with the missing mass correction. The seismic inputs are the floor response spectra developed from application of the SSI methodology using the SSE SEP spectrum which is anchored at a ZPA of 0.165g. Damping uses the ASME Code Case N-411 criteria. Modes are summed using the Regulatory Guide 1.92 Grouping Method, spatial responses are combined using SRSS.

As described above, and noted in your letter, there are relatively few supports which remain in question. Thus, the effect of the existing condition of these supports on the ability of Oyster Creek to withstand a seismic event is minimal. This conclusion is supported by the fact that the piping systems and supports were qualified to the Blume seismic input. The Blume spectra was derived from the Oyster Creek SEP ground response spectra which significantly exceeds the Oyster Creek SSRS in the frequencies of the greatest concern to piping systems (i.e., 2-5 Hz). Therefore, the existing support conditions do not pose a significant threat to nuclear safety. Hence, proceeding to modify these supports to the outdated "original FSAR criteria" does not provide benefits sufficient to justify the dollar and radiation exposure costs involved.

The alternative methodology presented above will produce a more technically supportable seismic design criteria for Oyster Creek than that represented by the "original FSAR criteria". Therefore, it is our intention to move forward with this development and to determine the need for further modifications based on its outcome. During our September meeting we proposed a schedule for completing the development program in time to support the Oyster Creek 13R outage. The NRC staff however stated they might not be able to support this schedule because of limited resources. The specific actions required by the NRC will require the expenditure of significant resources and result in substantial additional radiation exposure in 13R for what we believe will ultimately be shown to be little or no increase in safety.

For the above reasons, we believe it is inappropriate at this time to commit to your required actions. We have, however, initiated planning on a project to upgrade the supports in 13R in accordance with your letter. We will inform you of the estimated impact of this effort on 13R when this planning is completed. As planning progresses, the estimated impact in terms of resources allocation and exposure will become more apparent. In addition, based on NRC review of GPUN's current and future submittals, we anticipate that significant progress toward resolution of the new SSRS should be realized. In consideration of the above, during the second quarter of 1990 GPUN will be in a better position to determine appropriate actions for 13R and will discuss these with NRC at that time.

Very truly yours,


D. K. Croneberger
Acting Director/
Technical Functions

DKC/YN/crb
(0489-055)

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