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26 March 1968

Dr. Peter A. Morris, Director
Division of Reactor Licensing
U. S. Atomic Energy Commission
Washington, D.C. 20545

Re: Earthquake Analysis of Suppression Chamber 20-in. Suction Header
Oyster Creek Nuclear Power Plant - Unit No. 1
(AEC Docket No. 50-219)

Dear Dr. Morris:

The following comments are to be added to our report dated November 19, 1967, to the AEC Regulatory Staff regarding the Oyster Creek Nuclear Power Plant. On pages 4 and 5 of that report comments were made regarding the relative motions of the dry well, suppression chamber, and suction header.

We have reviewed the data and calculations summarized in Amendment No. 32 for the Oyster Creek Nuclear Power Plant. Although we have some differences of opinion as to the detailed method of analysis that should be used for the definition of the relative motions and the calculation of the strengths and resistances to earthquake motions for the suction header, our evaluation of the analysis indicates that the suction header, as supported and snubbed in the manner described in Amendment 28 and Amendment 32, will be reasonably adequate to resist the specified earthquake motions.

Our differences concern the calculations of the individual periods of vibration, or frequencies, of the suction header and the suppression chamber, and the inferences that can be drawn concerning the periods of vibration of the combined system, from these calculated individual frequencies. However,

the frequencies at issue are in general higher than about 10 cycles per second, and the motions and stresses arrived at by combining the various higher modes for the high frequency regime of response are not particularly sensitive to the computed frequencies for the various modes.

In our opinion, the calculations furnished by the applicant do not describe sufficiently the nature of supports and of connecting elements in the frequency analysis and response calculations. Furthermore, the calculations are not fully enough described and documented. We are not in agreement with the frequencies calculated by the applicant and indicated as the basis for his conclusion regarding the nature of the interaction of the suction header and the suppression chamber. Because of these differences, we made independent calculations, of a quite approximate nature, in order to assure ourselves of the adequacy of the system. Our independent evaluation has enabled us to concur in the conclusions stated by the applicant, in spite of our differences as to the details of the basis for these conclusions and it is our opinion that the design of this part of the system is adequate for the earthquake hazard used in the design of the facility as a whole.

Sincerely yours,

N. M. Newmark

bjw

cc: W. J. Hall