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

FEB 14 1975

Docket Nos. 50-416
and 50-417

Applicant: Mississippi Power & Light Company

Facility: Grand Gulf Nuclear Station Units 1 and 2

SUMMARY OF MEETING HELD ON FEBRUARY 5, 1975 TO DISCUSS THE DERIVATION OF DYNAMIC LOADS CONSIDERED IN THE CONTAINMENT STRUCTURES DESIGN.

A meeting was held on February 5, 1975, at the NRC offices in Bethesda, Maryland to discuss in detail the derivation of dynamic loads considered in the design of containment structures and the significance of these loads to the overall loading on the structures. An attendance list is provided in Enclosure I.

The applicants' Architect Engineer (Bechtel) began the meeting by identifying the principal structures that would be subject to loading from suppression pool dynamic effects. These structures are: the containment walls, the drywell and wierwell walls, and concrete and metal grating floors at approximately the 120 ft. and 135 ft. elevation. Bechtel drawings (No. M-1308, M-1300, M-1307 & C-1000) were provided for staff information and will be made available in the public document room. The preliminary bounding calculation of suppression pool dynamic loading provided by the General Electric Company in 1972 was used by Bechtel in the design of these structures. The conservatism of these loads is currently being verified by the G.E. Mark III Containment Test Program. The applicants stated that, with exception of the safety/relief valve discharge line loads, all suppression pool dynamic loads were supplied by the General Electric Company and the applicants are relying upon GE for justification of the conservatism of these loads. Bechtel did make a presentation of their method for calculating loads induced by operation of safety/relief valves. However, the staff expressed strong disagreement with the calculational techniques used and the applicants agreed to provide additional information to support the correctness and conservatism in their approach.

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The staff noted that all suppression pool dynamic loads used by Bechtel were assumed to occur symmetrically about the circumference of containment structures. The staff stated that the potential for asymmetrical loading must be considered and the applicant will be required to show that structures will tolerate the loads, or provide justification for assuming that asymmetrical loading effects are not significant. It was noted by all that the General Electric test program is not designed to resolve this concern and, therefore, independent action by the applicants is required.

The applicants summarized the construction progress at the site by stating that they will begin pouring concrete for containment structures foundations in June or July, 1975. There is about a 1,000 man construction force on the site now with a peak force of 3,000 men projected for some time in 1976. Concern was expressed that concrete for structures subject to suppression pool dynamic loading would be poured before the results of the GE tests were available to verify the conservatism in the design loads. The staff stated that the validity of suppression pool dynamic loads supplied by G.E. had not yet been agreed to by the staff and that the applicants proceed at their own risk in placing structures whose design is based on unverified loads. (Note: PSAR Amendment 18 states "Floors are presently being designed using a conservative model to calculate loads induced by suppression pool swell. The design, however, is capable of being strengthened after construction, if necessary, to accommodate results of tests underway at General Electric. The floors will be designed for whatever loads the tests show are necessary.") The staff further stated that the GE Mark III containment test program is designed to provide the necessary data to confirm the conservatism of the suppression pool dynamic loads with the exception of loads due to safety/relief valve operation and asymmetrical considerations. This information must be provided directly by the applicants since the staff evaluation of the results of the G.E. test program will not resolve this issue.

The staff asked several questions in order to determine the significance of suppression pool dynamic loads in the overall loading combinations used in the containment structures design. The applicants were unable to provide a specific break down of the significance of pool dynamic loads as compared with temperature, pressure and hydrostatic loads for each structure. Bechtel stated that the information was available and could be provided. To facilitate the staff evaluation of the overall importance of pool dynamic loads, the applicants agreed to provide the following detailed information for each structure:

1. The controlling loading combination used for design;

2. The magnitude of each component of the loading combination;

3. The basis (justification) for pool dynamic loads as they appear in each loading combination (i.e. test data or analytical calculation); and

4. References for documentation of each basis (3. above) for pool dynamic loads.

It was suggested that this information could be added to Bechtel Drw. C-1000 to make it a more complete document describing pool dynamic loading. Also this information will be provided ASAP and in advance of other additional information requested so that the evaluation of the importance of suppression pool dynamic loads to the design as it now exists can proceed prior to the placing of concrete.

Edward J. Butcher, Project Engineer
Light Water Reactors Branch 1-2
Division of Reactor Licensing

ENCLOSURE

ATTENDANCE LIST

MEETING WITH MISSISSIPPI POWER & LIGHT COMPANY ON GRAND GULF
FEBRUARY 5, 1975

NRC
E. J. Butcher
*W. R. Butler
V. A. Kudrick
G. C. Lainas
L. Slegers
R. Cudlin
*F. P. Schaver
*R. L. Tedesco

ACRS
P. T. Burnette
Z. Zudans

BECHTEL POWER CORP.
R. L. Hails
J. J. Tkacik
C. L. Reid
F. C. Cheng

MISSISSIPPI POWER & LIGHT
L. F. Dale

G.E.
N. C. Shirley

*Part time attendance