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APPLICANT: Mississippi Power & Light Company (MP&L)

FACILITY: Grand Gulf Nuclear Station Units 1 & 2

SUMMARY OF MEETING HELD ON JANUARY 16, 1974

The Regulatory staff (staff) met with representatives of MP&L, the General Electric Company and Bechtel Corp. in San Jose, California, on January 16, 1974, regarding the staff's review of the proposed containment design. The agenda for the meeting is enclosed. The purpose of the meeting was to obtain further information in regard to those matters listed in the agenda. MP&L agreed to provide by early February specific information primarily in regard to blowdown rates following a design basis recirculation line break.

G. Owsley, Project Manager  
Light Water Reactors Project Branch 1-2  
Directorate of Licensing

Enclosure:  
Agenda

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AGENDA FOR DISCUSSIONS WITH MP&L REGARDING

GRAND GULF CONTAINMENT MATTERS

SAN JOSE, CALIFORNIA

JANUARY 16, 1974

I. ANALYTICAL MODELS

- (1) Following a loss-of-coolant accident, dynamic loads are imposed on both the suppression pool retaining structures and structures located immediately above the pool. Describe the analytical methods which were used to determine these types of loads and how these loads were incorporated in the structural design. Provide the magnitudes of these loads which were used in the structural analysis conducted by the structural designer.
- (2) Provide similar information as outlined in (1) above for the actuation of one or more primary system pressure relief valves.
- (3) Operating experience at the Wuergrass<sup>2</sup> reactor facility has indicated that pressure oscillations resulting from relief valve operation can be a significant design consideration. Discuss the potential for similar oscillations occurring on the Mark III design and the provisions made in the design to prevent structural damage.
- (4) Operating experience at Brown's Ferry, Unit 1, has indicated excessive vibration of the torus structure during relief valve operation. Discuss the significance of this experience with respect to the design of the Mark III structure.

- (5) For the recirculation line rupture, it appears that the primary system was modeled as a single volume at the average primary system enthalpy. In addition, the total break area was assumed to be the sum of a single-ended pipe area, the throat area of 12 jet pumps and the clean-up flow area. This approach does not include the effect of the subcooled mass initially contained within the recirculation loop which could result in high calculated drywell differential pressures and appears to be unacceptable. Revise the modeling of the recirculation system to include this effect or justify, in detail, the adequacy of the current model. Provide a table of blowdown mass and energy addition rates as a function of time.

## II. TEST PROGRAM

- (1) For those pool dynamic effects considered in I(1) above, describe the testing methods that will be used to verify the analytical results. Include the methods used to determine any non-representative effects caused by the test facility side walls and the validity of measured dynamic impact loads above the segmented section formed by the side walls.
- (2) Discuss the experimental bases by which the calculated structural loads due to relief valve actuation will be verified for Mark III containments.
- (3) Describe the test methods that will be used to determine the

amount of direct steam bypass of the suppression pool or incomplete condensation.

- (4) In our letter to the General Electric Company of November 12, 1973, we asked that they provide a summary of previous pressure suppression testing which was used to establish the test objectives of the current Mark III program.

Please provide this information and, specifically address the following:

- (a) parameter ranges which were tested (e.g., vent submergence, vent diameters, vent mass flux, pool temperature),
- (b) to what extent were multiple vent tests performed,
- (c) to what extent were long term pool performance tests performed (e.g., pool stratification and vent chugging),
- (d) discuss the extent to which previous pressure suppression test data was able to be extrapolated to the Mark III design.

### III. OTHER MATTERS

- (1) Discuss the status of the containment spray system design.
- (2) Discuss the status of the hydrogen recirculation system design with respect to interlocks and isolation diversity.