Docket Nos. 50-416
and 50-417

FEB 12 1982

Mr. J. P. McGaughy, Jr.
Assistant Vice President
Nuclear Production
Mississippi Power & Light Company
Post Office Box 1640
Jackson, Mississippi 39205

Dear Mr. McGaughy:

Subject: In-Plant SRV Testing at Grand Gulf

On March 28, 1980, Mississippi Power and Light Company submitted Amendment No. 37 to the Grand Gulf FSAR that contained, in part, Appendix 6B, "Description of a Confirmatory Test Program for Quenchers in a Mark III Containment." This SRV Test Program was required since Grand Gulf was expected to be the first licensed BWR Mark III plant. However, Kuosheng, a BWR Mark III plant in Taiwan, started operation last year with initial heatup in March and SRV matrix tests performed in August. On the basis of the Kuosheng tests, MP&L has requested relief from the commitment to perform the SRV Test Program at Grand Gulf.

Our criteria, used to determine if plant-specific tests are required, are found in NUREG-0763, "Guidelines for Confirmatory In-Plant Tests of Safety-Relief Valve Discharges for BWR Plants," May 1981. In meetings with the staff on November 13 and December 2, 1981, MP&L attempted to demonstrate that the Kuosheng plant and test parameters are appropriate for Grand Gulf and that these SRV test results can be used as confirmatory for Grand Gulf. For Criteria 1, 2, 3 and 4 in NUREG-0763, the staff agrees with the MP&L assessment even though some of the Grand Gulf parameters may be non-conservative by 15-20% when compared to Kuosheng.

However, the staff does not agree with the MP&L evaluation for the last criteria (No. 5), since this criterion is based on the characteristics of the containment structure. As you well know, the Kuosheng plant was designed and built for an active seismic region. The concrete containment wall around the suppression pool at Kuosheng is 8.5 feet thick as compared to only 3.5 feet thick at Grand Gulf, a difference by a factor of 2.4. There appear to be other significant differences in the overall structure but the suppression pool wall differences alone form the basis for the staff concern.

MP&L has attempted to show that the analytical model used for predicting structural responses at Kuosheng can be suitably adapted for Grand Gulf. At Kuosheng, the actual test results were generally conservative when compared to the predictions. Exceedances with significant loads were noted in a few tests. On the basis of the Kuosheng tests, you have concluded that the expected test results at Grand Gulf will also be conservative when compared to the predictions and thus, the Grand Gulf design is conservative. Therefore, our acceptance of your evaluation for Grand Gulf depends mostly upon our confidence in the capability of the analytical model. Furthermore, the confidence in the model is especially crucial since the Kuosheng tests demonstrated that there is little margin in the predicted forcing functions.

After a review of the information presented in the two meetings noted above and your responses submitted on December 17, 1981, the staff is unable to express much confidence in the predictive capability of the analytical model for Grand Gulf. At Kuosheng, the predicted response spectrum showed a very poor correlation to the actual response spectrum. Thus, We would expect a similar correlation at Grand Gulf. As noted previously, non-conservative exceedances involving significant loads were observed at Kuosheng. MP&L characterized these loads as non-concerns since they occurred at high frequencies. However, based on the differences in the containment structures, there is little assurance that possible exceedances at Grand Gulf would not be found at lower frequencies where such loads would be a concern.

After the meeting in Bethesda on December 2 and prior to your submittal on December 17, we informed your staff by telephone on December 10, 1981, of our concerns along these lines. We did so at that time because the suppression pool was still drained and accessible for installation of the SRV instrumentation. In the Grand Gulf SSER No. 1 issued in December, 1981, we note the acceptance of the Kuosheng data with respect to suppression pool temperature limits but not for the response loads. Based on the discussion above, we will expect some SRV tests to be performed at Grand Gulf unless you can convince the staff of a higher confidence in the capability of your analytical model. If you have any questions about this matter please contact M. D. Houston, Project Manager (301) 492-8430.

Sincerely,

A. Schwencer, Chief
Licensing Branch No. 2
Division of Licensing

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