UNITED STATES
NUCLEAR REGULATORY COMMISSION
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
WASHINGTON, D. C. 20555

August 18, 1982

Honorable Nunzio J. Palladino
Chairman
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Dr. Palladino:

SUBJECT: ACRS REPORT ON GRAND GULF NUCLEAR STATION UNIT 1

During its 268th meeting, August 12-14, 1982, the Advisory Committee on Reactor Safeguards completed its review of the application of the Mississippi Power & Light Company (MP&L), Middle South Energy, Inc., and the South Mississippi Electric Power Association for an operating license for the Grand Gulf Nuclear Station Unit 1. The unit is to be operated by MP&L. The Committee provided an Interim Report, dated October 20, 1981, on the operation of Grand Gulf Unit 1. In completing its review, the Committee had the benefit of Subcommittee meetings on July 29-30, 1982 and on August 11, 1982, discussions with representatives of the Applicant and the NRC Staff, and of the documents listed.

In its Interim Report, the ACRS listed two outstanding issues:

- dynamic loads on structures above the Mark III suppression pool due to froth impact

- hydrogen control

Our Interim Report concluded that, with due consideration to the recommendations of that report and subject to the satisfactory completion of construction, staffing, and preoperational testing, it would be acceptable for Grand Gulf Nuclear Station Unit 1 to be operated at power levels up to 5% of full power.

The NRC Staff has stated that the matter of dynamic loads on structures above the suppression pool is now resolved. The ACRS is satisfied with the resolution of this matter. Since October 1981, several additional detailed questions have been raised concerning suppression pool performance and resulting loads. The Committee has reviewed this matter and is satisfied with the manner in which the NRC Staff is handling the questions involved.

Hydrogen control systems for Mark III containments are being developed by the Hydrogen Control Owners Group. Efforts by the Owners Group are being directed toward the development of a hydrogen ignition system which makes use of distributed ignition sources. In addition, MP&L has performed plant-

specific analyses of hydrogen control measures for Grand Gulf. Although some questions remain concerning the optimum number and location of ignitors, the NRC Staff has reached the interim conclusion that MP&L has shown that the hydrogen ignition system will provide reasonable assurance of protection against breach of containment following the generation of a substantial quantity of hydrogen for several significant postulated accident scenarios. We agree with the Staff.

A final evaluation of the hydrogen control system remains to be completed. The ACRS expects to review the final NRC Staff position regarding acceptability of this approach on a generic basis and requests that the NRC Staff arrange for such a review at the appropriate time.

The NRC Staff has indicated that MP&L has an adequately competent staff to operate the Grand Gulf Station when enhanced by supplemental advisory staff with relevant BWR experience. During the first year of operation, the ACRS believes MP&L should continue to strengthen its nuclear plant management and its technical support capability.

MP&L has proposed to include in the Grand Gulf Emergency Procedures a provision for venting the containment in the unlikely event of buildup of pressures above the design basis. The NRC Staff has not completed its review of this proposal. The ACRS wishes to be advised when the NRC Staff has reached a position on this matter and to have an opportunity to comment generically or specifically.

If due consideration is given to the items mentioned above and to those mentioned in our Interim Report of October 20, 1981, the ACRS believes there is reasonable assurance that the Grand Gulf Nuclear Station Unit 1 can be operated at power levels up to 3833 MWt without undue risk to the health and safety of the public.

Sincerely,

P. Shewmon
Chairman

References:

1. Mississippi Power & Light Company, "Final Safety Analysis Report, Grand Gulf Nuclear Station Units 1 and 2," Volumes 1-22, with Amendments 25-52
2. Letters from L. F. Dale, Mississippi Power & Light Company to H. R. Denton, U. S. Nuclear Regulatory Commission:
   a. 7/15/82 regarding Regulatory Guide 1.97 compliance license condition 2.C(23)
   b. 7/15/82 regarding action plans for resolution of Mr. J. H. Humphrey's concerns

3. U.S. Nuclear Regulatory Commission, "Safety Evaluation Report Related to the Operation of Grand Gulf Nuclear Station Units 1 and 2," USNRC Report NUREG-0831, dated September 1981 with Supplement No. 1 dated December 1981, Supplement No. 2 dated June 1982, and Supplement No. 3 dated June 1982
4. Letter from Mr. J. M. Humphrey to A. Schwencer, NRC regarding comments on containment design, dated June 17, 1982