MISSISSIPPI POWER & LIGHT COMPANY
Helping Build Mississippi
P. O. BOX 1640, JACKSON, MISSISSIPPI 39205

April 30, 1984

NUCLEAR PRODUCTION DEPARTMENT

U. S. Nuclear Regulatory Commission
Office of Nuclear Reactor Regulation
Washington, D. C. 20555

Attention: Mr. Harold R. Denton, Director

Dear Mr. Denton:

SUBJECT: Grand Gulf Nuclear Station
Units 1 and 2
Docket Nos. 50-416 and 50-417
License No. NPF-13
File: 0260/L-860.0
Additional Information Regarding
Technical Specification Bases
AECM-84/0178

As requested by letter, dated March 19, 1984, from Mr. T. M. Novak to Mr. J. P. McGaughy, Mississippi Power & Light Company (MP&L) is providing the enclosed information which confirms that the methodology, nominal values and uncertainties cited in Bases Section 2.1.2 of the Grand Gulf Nuclear Station (GGNS) Unit 1 Technical Specifications are appropriate for determining the allowable Minimum Critical Power Ratio (MCPR) for Grand Gulf. This information was previously discussed with Mr. J. Joosten of the NRC in a March 12, 1984 telephone conversation and is being documented in this letter for inclusion on the Grand Gulf docket.

As described to Mr. Joosten, the Grand Gulf MCPR limit of 1.06 was determined by a conservative, bounding analysis performed by General Electric Company (GE) and described in Topical Report No. NEDE-24011-P-A-6-US. This report, which has been reviewed and approved by the NRC, states that the subject analysis is valid for a wide range of BWR core and fuel assembly designs, including BWR/6 P8x8R fuel currently installed at Grand Gulf. In addition, Table S.2-3b of the topical report clearly states that the analysis and its resulting bounding MCPR safety limit are applicable to the initial cores at Grand Gulf Units 1 and 2.

The justification for applying the GE bounding analysis, which was performed assuming a lower maximum rated core thermal power (3323 MW_t) than Grand Gulf (3833 MW_t) is provided in Section S.2.1.2 of NEDE-24011-P-A-6-US and is summarized as follows. In the GE analysis, the dominant parameter in the statistical evaluation and the determination of the MCPR safety limit is the number of fuel bundles "at risk". In this context, "at risk" means having a higher thermal power than the rating upon which the particular core design is based. The important factor in applying the MCPR safety limit is therefore not the total core thermal power, which is accounted for in other core physics and thermal/hydraulic design parameters, but rather the degree of assymetry in the core power distribution.

A001
1/0

The GE bounding analysis assumed an abnormally skewed power distribution in order to establish a conservative MCPR safety limit for a wide range of reactor cores at both higher and lower rated thermal power than the 3323 MW_t assumed in the analysis. The analyzed power shape and uncertainties reported in Topical Report No. NEDE-24011-P-A-6-US are therefore conservative, and the resulting MCPR safety limit is appropriate for Grand Gulf Unit 1.

We trust that the above discussion will satisfy your requirement for written confirmation of the applicability to Grand Gulf Unit 1 of the information cited in Bases Section 2.1.2 of the GGNS Technical Specifications. Please advise if you have any further questions on this matter.

Yours truly,

L. F. Dale
Manager of Nuclear Services

MLC/JGC:rg

cc: Mr. J. B. Richard
Mr. R. B. McGehee
Mr. N. S. Reynolds
Mr. G. B. Taylor

Mr. Richard C. DeYoung, Director
Office of Inspection & Enforcement
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Mr. Thomas M. Novak, Assistant Director for Licensing
Division of Licensing
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Mr. J. P. O'Reilly, Regional Administrator
U.S. Nuclear Regulatory Commission
Region II
101 Marietta St., N.W., Suite 2900
Atlanta, Georgia 30303