



MISSISSIPPI POWER & LIGHT COMPANY

Helping Build Mississippi

P. O. BOX 1640, JACKSON, MISSISSIPPI 39205

September 12, 1983

JAMES P. MCGAUGHY, JR.
VICE PRESIDENT

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
Unit 1
Docket No. 50-416
License No. NPF-13
File 0260/0840/L-860.0
Proposed Amendment to the
Operating License
(PCOL-83/20)
AECM-83/0569

In accordance with the provisions of 10CFR 50.59 and 10CFR 50.90, Mississippi Power & Light (MP&L) requests an amendment to License NPF-13, for Grand Gulf Nuclear Station (GGNS) Unit 1. This proposed amendment pertains to the minimum allowable count rate for the source range monitoring instrumentation.

In accordance with provisions of 10CFR 50.30, three (3) signed originals and forty (40) copies of the requested amendment are enclosed. The attachment provides the complete technical justification and discussion to support the requested amendment. This amendment has been reviewed and accepted by the Plant Safety Review Committee (PSRC) and the Safety Review Committee (SRC).

Based on the guidelines presented in 10CFR 50.92, it is the opinion of MP&L that this proposed amendment involves no significant hazards considerations.

In accordance with the requirements of 10CFR 170.22, we have determined that the proposed amendment includes one safety issue. Based on the guidance provided by the Project Manager (NRC), we have determined that the total fee is \$4,000. A remittance of \$4,000 is attached to this letter.

Yours truly,

JPM:sap
Attachments: GGNS PCOL-83/20

cc: (See Next Page)

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PDR ADOCK 05000416
P PDR

Member Middle South Utilities System

Boo!
1/1
Rec'd w/ check
\$4,000

MISSISSIPPI POWER & LIGHT COMPANY

cc: Mr. J. B. Richard (w/o)
Mr. G. B. Taylor (w/o)
Mr. R. B. McGehee (w/c)
Mr. T. B. Conner (w/o)

Mr. J. P. O'Reilly (w/a)
Regional Administrator
Region II
101 Marietta Street, N.W., Suite 2900
Atlanta, Georgia 30303

Mr. R. C. DeYoung, Director (w/a)
Office of Inspection & Enforcement
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dr. Alton B. Cobb (w/a)
State Health Officer
State Board of Health
Box 1700
Jackson, Mississippi 39205

BEFORE THE
UNITED STATES NUCLEAR REGULATORY COMMISSION

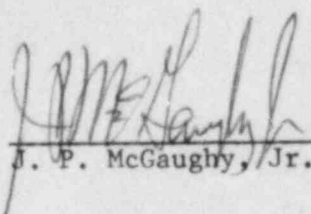
LICENSE NO. NPF-13

DOCKET NO. 50-416

IN THE MATTER OF
MISSISSIPPI POWER & LIGHT COMPANY
and
MIDDLE SOUTH ENERGY, INC.
and
SOUTH MISSISSIPPI ELECTRIC POWER ASSOCIATION

AFFIRMATION

I, J. P. McGaughy, Jr., being duly sworn, stated that I am Vice President - Nuclear of Mississippi Power & Light Company; that on behalf of Mississippi Power & Light Company, Middle South Energy, Inc., and South Mississippi Electric Power Association I am authorized by Mississippi Power & Light Company to sign and file with the Nuclear Regulatory Commission, this submittal in response to your request for information dated July 27, 1983; that I signed this application as Vice President - Nuclear of Mississippi Power & Light Company; and that the statements made and the matters set forth therein are true and correct to the best of my knowledge, information and belief.

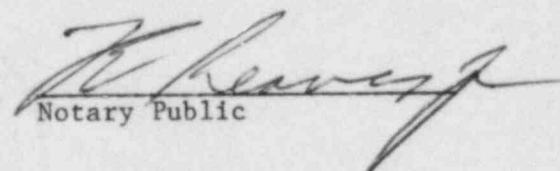


J. P. McGaughy, Jr.

STATE OF MISSISSIPPI
COUNTY OF HINDS

SUBSCRIBED AND SWORN TO before me, a Notary Public, in and for the County and State above named, this 12 day of September, 1983.

(SEAL)



Notary Public

My commission expires:

Feb 13, 1985

F12sp

TRANSMITTAL OF PROPOSED CHANGES
TO GRAND GULF TECHNICAL SPECIFICATIONS

1. (GGNS - X44)

SUBJECT: Technical Specification 4.3.7.6.c and Table 3.3.6-2, pages 3/4 3-73 and 3/4 3-52, respectively.

DISCUSSION: The surveillance requirements of 4.3.7.6.c require that prior to withdrawal of control rods, the Source Range Monitor (SRM) count rate be verified to be at least 3 counts per second (cps) with the detector fully inserted. Table 3.3.6-2 requires a SRM downscale trip setpoint of 3 cps for the control rod block function to be considered operable. Based on the current SRM count rate, MP&L estimates that the antimony-beryllium source strength will be insufficient to maintain 3 cps by November 1, 1983, due to normal decay of the sources. The sources cannot be reliably regenerated until power levels reach 25% which is not scheduled to occur before December 1, 1983. Other means of meeting the 3 cps requirement include installing new sources or reactivating the current antimony pins in a test reactor; however, either method would result in significant delays in the startup test schedule. The delay is due mostly to the fact that the reactor vessel must be opened and part of the fuel removed in order to replace the sources. Therefore, MP&L proposes to lower the minimum SRM count rate to 0.5 cps. Also, in order to provide consistency between 4.3.7.6.c and Table 3.3.6-2, MP&L proposes to lower the downscale rod block setpoints to 0.5 cps for the allowable value and 0.7 cps for the trip setpoint.

JUSTIFICATION: Several factors justify a minimum allowable count rate of 0.5 cps for the SRMs including:

1. The SRMs are not required to perform any protective or mitigative safety function in the transients or accidents analyzed in Chapter 15 of the FSAR.
2. The SRMs are capable of monitoring count rates as low as 0.1 cps,
3. The negligible effect of a lower count rate on the Rod Drop Accident (RDA) analysis peak fuel enthalpy, and
4. Lower count rate with requirements of Regulatory Guide 1.68 Revision 2.

As described in FSAR Section 7.6.1.5, the SRMs provide neutron flux information during reactor startup and low level flux operations until the IRMs are well on scale (Range 3 of 5 IRMs). The SRMs also provide an upscale rod block at 10^5 cps and a downscale rod block trip setpoint at 3 cps. These rod blocks prevent control rod withdrawal until the cause of

unusually high or low count rates is determined by the operator. However, the SRMs are not required to perform any protective or mitigative safety function in the transients or accidents analyzed in Chapter 15 of the FSAR.

The only important consideration in lowering the minimum count rate requirement and the downscale rod block is that sufficient monitoring capability be maintained to detect positive reactivity insertions from the initial subcritical condition in a smooth and continuous fashion. Since the SRMs are capable of measuring count rates as low as 0.1 cps, the proposed value of 0.5 cps is well on-scale and will provide adequate monitoring capability. The 0.7 cps trip setpoint for the downscale rod block was chosen as an appropriate value above the minimum allowable value of 0.5 cps.

With regard to reactivity addition transients, the limiting fault at low power conditions is the Rod Drop Accident (RDA) which is analyzed by General Electric (GE) in NEDO-10527 and its supplements and is described in Section 15.4 of the FSAR. It should be noted that only the 120% APRM scram and the Rod Pattern Control System, which limits the worth of any control rod which could be dropped by regulating the withdrawal sequence, are required to be operable in order to mitigate the consequences of the RDA. The SRMs have no safety function in the RDA analysis.

In April, 1974, GE performed a reanalysis of the RDA (based on NEDO-10527 and supplements) in support of a similar Technical Specification amendment for Cooper Nuclear Station. For the Cooper amendment, GE indicated that the original 3 cps minimum count rate requirement was based on the assumed initial power level (10^{-8} % of rated power) for the RDA. They then evaluated the sensitivity of the RDA rod worths and peak fuel enthalpy to lower power levels and associated lower count rates. The reanalysis indicated that no significant change in RDA results occurred with count rates as low as 0.3 cps. Cooper subsequently requested a minimum count rate of 0.3 cps (J. M. Pilant to V. A. Moore letter, dated April 4, 1974) and received approval for this Technical Specification amendment (Moore to Pilant letter, dated April 17, 1974). GE has confirmed that the reanalysis performed for Cooper is valid for Grand Gulf.

Also, the proposed changes are consistent with Regulatory Guide 1.68, Revision 2, "Initial Test Programs for Water-Cooled Nuclear Power Plants" which states:

"A neutron count rate at least 1/2 count per second should register on the startup channels before the startup begins, and the signal-to-noise ratio should be known to be greater than two."

This requirement is reflected in the Level 1 Acceptance Criterion of GE Startup Test Procedure 6 for GCNS which requires an SRM signal-to-noise ratio of at least 2 to 1. Since the SRMs are calibrated to have a noise level below 0.1 cps, a minimum count rate of 0.5 cps is sufficient to meet Regulatory Guide 1.68 requirements. (This is equivalent to a signal-to-noise ratio of greater than 5 to 1).

Based on the justifications given above which show that the SRMs have no safety function, that the SRMs are capable of monitoring count rates as low as 0.1 cps, and that count rates as low as 0.3 cps will not invalidate RDA analysis results, MP&L believes that a minimum allowable count rate of 0.5 cps is acceptable.

SIGNIFICANT HAZARDS CONSIDERATION:

Given the justifications stated above, it has been determined that these changes to the Technical Specifications do not involve a significant reduction in safety margins. Also, no increase in the probability or consequences of an accident previously evaluated is involved nor is the possibility of a new or different kind of accident from any accident previously evaluated created. Thus the proposed changes to the Technical Specifications do not involve any significant hazards considerations.