MISSISSIPPI POWER & LIGHT COMPANY
Helping Build Mississippi
P. O. BOX 1640, JACKSON, MISSISSIPPI 39215-1640

June 26, 1986

O. D. KINGSLEY, JR.
VICE PRESIDENT - NUCLEAR OPERATIONS

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-29
File: 0260/0840/L-860.0
Proposed Amendment to the Operating License (PCOL-86/14)
AECM-86/0197

Mississippi Power & Light (MP&L) Company is submitting by this letter proposed changes to the Grand Gulf Technical Specifications deleting the control room chlorine detectors and thus the requirement to automatically isolate the control room upon detection of chlorine. This proposed change is based on the low chlorine concentration which would be expected in the control room from onsite release and on the low probability of a spill on the river in the vicinity of the site.

In accordance with the provisions of 10 CFR 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 10 CFR 50.92, it is the opinion of MP&L that this proposed amendment involves no significant hazards consideration.

In accordance with the requirements of 10 CFR 170.21, we have determined that the application fee is $150. A remittance of $150 is attached to this letter.

Yours truly,

O. D. Kingsley

ODK:bms
Attachments: GGNS PCOL-86/14

cc: (See Next Page)

Reid w/check

A001
1/1

cc: Mr. T. H. Cloninger (w/a)
Mr. R. B. McGehee (w/a)
Mr. N. S. Reynolds (w/a)
Mr. H. L. Thomas (w/o)
Mr. R. C. Butcher (w/a)

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

Dr. J. Nelson Grace, Regional Administrator (w/a)
U. S. Nuclear Regulatory Commission
Region II
101 Marietta St., N. W., Suite 2900
Atlanta, Georgia 30323

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-29

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, O. D. Kingsley, Jr., being duly sworn, stated that I am Vice President, Nuclear Operations 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 application for amendment of the Operating License of the Grand Gulf Nuclear Station; that I signed this application as Vice President, Nuclear Operations 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.

O. D. Kingsley, 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 26th day of June, 1986.

(SEAL)

Paul A. Richardson
Notary Public

My commission expires:

Oct 27, 1987

REMITTANCE ADVICE

CHECK DATE 06/16/86 VENDOR US NUC REG COMM VENDOR NUMBER 929958 CHECK NO. 06-0056

INVOICE DATE	PURCHASE ORDER NO.	INVOICE NUMBER / DESCRIPTION	VOUCHER NUMBER	GROSS AMOUNT	DISCOUNT	NET AMOUNT
061286		10CFR170 APPLIC FEE-NRC	06-3215	15000		15000

AECM-86/0197

DEPOSIT GUARANTY NATIONAL BANK
Jackson, Mississippi 39205

85-543
653

MIDDLE SOUTH ENERGY, INC.
P.O. BOX 1640 • JACKSON, MISSISSIPPI 39205
JOINT ACCOUNT

CHECK NO. 06-0056

CHECK DATE		
MO.	DA.	YR.
06	16	86

DOLLARS	CENTS
$150	00

PAY

TO THE ORDER OF
U.S. NUCLEAR REGULATORY
COMMISSION
WASHINGTON, DC 20555

SIGNED BY

COUNTERSIGNED BY

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1. NLS 86/10

SUBJECT: Technical Specification 3.3.7.8, Surveillance Requirements 4.3.7.8 and 4.7.2.d.2.b and Bases 3/4.3.7.8, pages 3/4 3-79, 3/4 7-6 and B3/4 3-5.

DISCUSSION: The proposed technical specification change deletes the control room chlorine detectors and the requirement to automatically isolate the Control Room upon detection of chlorine. This proposed change is based on the low chlorine concentration which would be expected in the control room from the onsite release and on the low probability of a spill on the river in the vicinity of the site.

The off-site analysis discussed in section 2.2.3.1.2 of the updated FSAR shows the probability of a chlorine accident on the Mississippi River in the vicinity of GGNS is approximately 1.8E-7 per year. Details of this analysis are provided in attachment 1. The results of the on-site analysis are provided in Table 2.2-7 of the FSAR and were originally submitted to the NRC in a letter dated June 7, 1983. This analysis showed that following the rupture of one chlorine cylinder, the Control Room chlorine concentration would remain well below the concentration requirements of Regulatory Guide 1.78.

JUSTIFICATION: It is proposed that the GGNS Technical Specification be changed to delete the control room chlorine detectors and thus the automatic isolation of the Control Room upon detection of chlorine.

The deletion of control room chlorine detectors and associated automatic isolation of the Control Room upon detection of chlorine is based on:

(1) the lack of risk from an onsite chlorine accident, and

(2) the very low probability of an offsite chlorine accident,

(1) <u>On-site Chlorine Storage and Use</u>

Liquid chlorine is used or stored in 150 pound cylinders in locations only outside the Unit 1 protected area. The location closest to the Control Room is approximately 225 meters from the Control Building. This complies with the guidance in Regulatory Guide 1.95, which requires liquified chlorine in quantities greater than 20 pounds to be stored at least 100 meters away from the control room or its fresh air inlets.

Administrative controls require that:

1. No single on-site liquid chlorine container will contain more than approximately 150 pounds of chlorine.

2. No more than ten (10) liquid chlorine containers are permitted on-site except during deliveries. There shall be no more than nine (9) deliveries per calendar year of liquid chlorine to the jobsite.

3. No more than two liquid chlorine containers shall be maintained at any approved usage area except during replenishment.

4. No more than one liquid chlorine container shall be in service at any approved usage area. Chlorine containers shall not be manifolded together.

5. All liquid chlorine containers shall be delivered to a GGNS construction warehouse which is located outside Unit 1 protected area for storage until required for usage.

6. Empty chlorine containers shall be returned to the construction warehouse for storage and returned to the vendor.

Analysis of On Site Chlorine Accident

Because of the use and delivery arrangements of on site chlorine, the postulated release of a single 150 pound cylinder at the location closest to the Control Room (225 meters) represents a conservative basis for evaluating the effects of an on site chlorine accident.

Such an analysis was performed assuming:

1. Atmospheric stability - Stable, Class F.

2. Wind speed - 1 meter/second.

3. Wind direction - Directly towards the control room air intake from the accident location.

4. Ambient temperature - $25^{o}F$.

5. An initial puff release followed by a continuous release from the remaining chlorine.

6. A ground level control room air intake.

7. No control room isolation during the event.

This results in a chlorine concentration inside the Control Room of 18.4 mg/m^3 which is well below the chlorine limit of 45 mg/m^3 allowed by Regulatory Guide 1.78. The results of this analysis are given in Table 2.2-7 of the FSAR.

(2) Offsite Chlorine Accident Probability Study

Section 2.2 of the FSAR describes the possible sources of chlorine that could impact control room habitability. Chlorine tank ruptures on nearby highways and the Mississippi River were considered. Only the barge accident is considered a credible threat.

A probability study was performed on the effect on the control room of a chlorine barge accident and subsequent spill on the Mississippi River. Since there were no chlorine spills during the nine year period from 1973 to 1982, a conservative estimate for a chlorine release resulting from a barge accident was prepared based on all barge accidents involving spills on the lower Mississippi River for that period. This data was also used in preparing analyses discussed in the FSAR. A probability of 1.8E-7 for an accident involving a chlorine spill on the Mississippi River near GGNS was calculated. This probability is within the acceptance criteria of NRC Standard Review Plan 2.2.3. Attachment 1 "Offsite Chlorine Accident Probability Study" discusses a more detailed discussion of the above.

Based on the low chlorine concentration which would be expected in the Control Room from the onsite release and on the low probability of a spill on the river in the vicinity of the site, it is concluded that a chlorine accident need not be considered to require automatic isolation of the control room air intake. Deletion of the chlorine detectors is thus justified.

SIGNIFICANT HAZARDS CONSIDERATION:

The proposed change does not involve a significant increase in the probability or consequences of an accident. Deletion of the chlorine detectors would not affect the probability of an on site chlorine accident. Consequences of an onsite chlorine accident are discussed in Section 2.2.3.1.2 of the FSAR. The results of the analysis indicate that MP&L is in compliance with the requirements of Regulatory Guide 1.95 which requires liquified chlorine in quantities greater than 20 pounds to be stored at least 100 meters away from the control room or its fresh air inlets. The results also show that with no credit taken for control room isolation, the chlorine concentration inside the control room of 18.4 mg/m^3 is below the 45 mg/m^3 allowed by Regulatory Guide 1.78. The results of this analysis are given in FSAR Table 2.2-7. The deletion of the chlorine detectors will not affect the probability of a chlorine barge accident and subsequent spill on the Mississippi River. The calculated probability is 1.8E-7 per year.

The proposed change does not create the possibility of a new or different kind of accident from any accident evaluated because possible chlorine accidents have been considered and because deletion of the detectors involves no changes in quantities or use of chlorine onsite or offsite. The accidents as evaluated and presented in the FSAR remain unchanged.

The proposed change does not involve a significant reduction in a margin of safety as bounded by the analyses presented in the FSAR. The chlorine concentration inside the control room will remain below the allowed chlorine concentration limits as established by Regulatory Guide 1.78 following deletion of the chlorine detectors. In addition, the probability of an offsite accident (as discussed above) is sufficiently low that design requirements are not required to mitigate the event as specified in Standard Review Plan 2.2.3.

Therefore, the proposed change involve no significant hazards considerations.