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

August 23, 1985

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-85/11)
AECM-85/0258

In accordance with the provisions of 10 CFR 50.59 and 10 CFR 50.90, Mississippi Power & Light (MP&L) requests an amendment to License NPF-29, for Grand Gulf Nuclear Station (GGNS) Unit 1.

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 considerations.

In accordance with the requirements of 10 CFR 170.22, we have determined that the proposed amendment is considered to be administrative in nature. Based on the guidance provided by the Project Manager (NRC), we have determined that the application fee is $150. A remittance of $150 is attached to this letter.

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As a matter of good operating practice, we will maintain frequent contact with your staff during the review period to ensure that the date of issuance of these changes will coincide with completion of the proposed modifications.

Yours truly,

ODK:dmm
Attachments: GGNS PCOL-85/11 (Additional Submittal)

cc: Mr. J. B. Richard (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 23rd day of August, 1985.

(SEAL)

Paul A. Richardson
Notary Public

My commission expires:

Oct 27, 1987

14. (NPE-85/14 and OLCR-NLS-85/04)

SUBJECT: Technical Specifications 3.8.1.1.b.2.a and 3.8.1.2.b.2.a, pages 3/4 8-1 and 3/4 8-9
Facility Operating License No. NPF-29, pages 8 and 14

DISCUSSION: These technical specification and operating license changes result from a design change to increase the pumping capacity of Standby Service Water (SSW) loop B which is planned for implementation during an outage scheduled to begin in October, 1985.

It is proposed to change the minimum useable fuel required for each diesel generator 11 and 12 in Technical Specifications 3.8.1.1 and 3.8.1.2, from 48,000 to 57,200 gallons.

Also proposed is a license condition to Facility Operating License NPF-29 to allow a temporary exception to Technical Specification 3/4.7.1.3 requirements for SSW cooling tower basin operability as follows:

(40) With the plant in OPERATIONAL condition 4, SSW cooling tower basin A may be considered OPERABLE in accordance with Technical Specification 3.7.1.3 with less than a 30 day supply of water (without makeup) during the time that SSW basin B is drained to replace its associated service water pump provided:

a) SSW basin A water level is maintained greater than or equal to 87".

b) At least two sources of water (other than normal makeup with one source not dependent on offsite power) are available for makeup to SSW basin A.

This license condition may remain in effect until plant startup following the outage scheduled for fall 1985.

It is proposed to revise license condition 2.C.(20) to allow the associated SSW subsystem (A or B) to be declared inoperable if its valve isolating the spent fuel pool cooler is open. The present license condition does not allow these valves to be open at any time.

JUSTIFICATION: Startup testing on the SSW system at Grand Gulf indicated that certain essential equipment would not receive full design flow. Subsequently, MP&L isolated the spent fuel pool coolers from the SSW system in order to provide increased flow to the other components. License condition 2.C.(20) to Facility Operating License NPF-29 requires MP&L to isolate the spent fuel cooler from the SSW system and verify isolation every 31 days until the SSW system is modified to provide the required design flow to all SSW system components.

There are two divisions of SSW to be modified in order to totally comply with license condition 2.C.(20). In orde to reduce the down time necessary to implement the modifications, MP&L plans to complete work on the B train of SSW during an outage in the fall of 1985 and to modify the A train of SSW during the first refueling outage scheduled in 1986. The SSW heat load and inventory calculations will be reassessed prior to the first refueling outage before any spent fuel is discharged, after certified pump performance data and system test results are received. This reassessment will also account for the maximum possible peak heat load associated with the high density spent fuel racks.

In order to increase SSW system flow, larger pumps and motors, (997 kw vs. 639 kw) are being installed. Since these pumps are powered by their associated diesel generators, an increase in the minimum diesel fuel storage capacity is required. A reanalysis of the minimum fuel oil capacity requirement revealed that the existing value of 48,000 gallons includes all the useable fuel required for the design of a fuel oil storage system by Regulatory Guide 1.137. In accordance with the definition of a Limiting Condition for Operating contained in 10 CFR 50.36, i.e., "the lowest functional capability or performance levels of equipment required for safe operation of the facility," the new analysis included only those loads expected to exist for seven days during the most sensitive limiting condition, a design basis LOCA with a loss of offsite power. The calculation incorporated the expected loads on a time-dependent basis and included not only the analyzed loads required for accident mitigation but also selected loads which may be manually connected to further mitigate the consequences of an accident although no credit is given for them in the analysis. The addition of the loads not required by analysis are not required to meet the provisions of 10 CFR 50.36 but have been added for conservatism. The new calculation for fuel requirements does not include fuel for testing since this is not considered to be fuel needed for seven days during the most sensitive limiting condition. The new calculation results in an increase from the present 48,000 gallons to 57,200 gallons. MP&L has decided to increase the fuel storage requirements for both diesel generators 11 and 12 at this time to accommodate the modifications to both trains of SSW.

Part of the design change to SSW B during the fall 1985 outage involves relocating the SSW loop B supply and return valves to the fuel pool cooling heat exchangers. These valves will be cut out and relocated in their respective lines to resolve a water hammer problem. License condition 2.C.(20) presently requires

the spent fuel pool cooler to be isolated from the SSW system by locked closed valves. This license condition cannot be met as presently worded during the time that the valves are being relocated. Also, to facilitate testing after the larger SSW pump is installed, the valves isolating the spent fuel pool cooler from SSW B must be open. Additional evolutions involving RHR A and RHR B loops to establish an alternate method of decay heat removal are planned which may require opening of these valves. The proposed change to license condition 2.C.(20) will allow these valves to be open only if the associated SSW subsystem (A or B) is declared inoperable. The proposed change to the license condition provides compatibility with the requirements of Technical Specification 3/4.7.1 on SSW operability which requires the SSW subsystem (A or B) to be declared inoperable when the associated valves isolating service to the spent fuel storage pool cooler are not closed (Surveillance Requirement 4.7.1.1.a.2). This proposed change to license conditon 2.C.(20) will allow flexibility to accomplish the needed design change and testing.

The proposed temporary operating license condition is necessary in order to avoid establishing secondary containment integrity while SSW cooling tower basin B is drained. In order to drain SSW basin B the siphon connecting SSW basin A and basin B must be disabled. Plans have not been finalized as to when the draining of basin B will begin after plant shutdown to install the larger SSW pump. For the worst case of starting to drain basin B immediately upon plant shutdown, calculations have shown that 12 days water supply without makeup will be available from basin A with the siphon inoperable. Sixteen days of water supply will be available from basin A if basin B is drained starting at day eight of the outage. Present projections to complete the work indicate that basin B will be drained for a total of 36 days. With basin B drained, the operable SSW loop does not meet the design requirement of 30 days without makeup. The calculation to determine the number of days without makeup is based on the plant experiencing a loss of offsite power coincident with the design basis loss of coolant accident. Even though SSW basin A contains approximately seven million gallons of water, only 3.37 million are taken credit for in accident scenarios since full design flows for some equipment cannot be assured if the basin level falls below 107' elevation. The proposed license condition requests that SSW cooling tower basin A be considered operable in operational condition 4 (cold shutdown) with a minimum of 12 days supply of water without makeup. Without this license condition, Technical Specification 3/4.5.2 requires establishment of secondary containment integrity while both SSW basins are inoperable. This requirement will pose an undue hardship during the fall outage due to many work items that require frequent plant access through secondary containment boundaries. MP&L will ensure that water level is maintained in SSW basin A during the license condition at greater than or equal to 87" and will ensure that at least two sources of water (other than normal makeup with one source not dependent on offsite power) are available for makeup to basin A. MP&L will implement

a special procedure to ensure that the provisions of the license condition are met. Available water supplies include normal makeup from the service water pumps located at the Mississippi River, construction well water, circulating water basin and storm drain basin. For example, MP&L has a dedicated fire truck at Grand Gulf that can be used as a pump to provide a source of water independent of offsite power. The maximum makeup capacity needed in order to account for cooling tower losses is approximately 200 gallons per minute which does not pose a makeup problem from the sources listed. Inability to comply with the provisions of the proposed license condition will result in SSW basin A being declared inoperable and the actions of Technical Specification 3.7.1.3 being implemented.

Upon completion of the proposed modifications to the B train of SSW, the new SSW pump will be the largest single load on diesel generator 12 (997 kw versus the 550 kw for RHR B/C pumps). This larger SSW pump load should not be used in Surveillance Requirement 4.8.1.1.2.d.2 to test the diesel generator's capability to reject a large load. Surveillance Requirement 4.8.1.1.2.d.2 demonstrates the ability of the diesel generator to continue to function after rejecting a large load. Since the SSW system supplies cooling water to its associated diesel generator, tripping the SSW pump to perform this test would result in loss of the diesel generator. The present load reject testing requirements using the RHR B/C pump load of 550 kw is the largest single load on the diesel generator that can be rejected and still maintain continued operation of the diesel generator. MP&L believes that this position meets the intent of Regulatory Guide 1.9 requirements and does not propose a change to Technical Specification 4.8.1.1.2.d.2 for this concern. However, MP&L will submit an FSAR revision with the 1986 FSAR update that will address our interpretation of compliance with Regulatory Guide 1.9 for this application.

MP&L has evaluated the effects of this change on the maximum load allowed for diesel generator testing in Surveillance Requirement 4.8.1.1.2. Even with the larger SSW pumps the maximum testing load of 5740 Kw for diesel generators 11 and 12 is not impacted. The lower limit of 5450 kw is likewise not impacted by this change.

SIGNIFICANT HAZARDS CONSIDERATION:

The design change will be performed in accordance with appropriate regulatory and industry codes and standards, the GGNS Quality Assurance Program, and the applicable requirements of the GGNS FSAR. The proposed technical specification changes to the fuel capacities are consistent with the philosophy and intent of the technical specifications and the requirements of 10 CFR 50.36 and will make the technical specifications consistent with the plant as modified by the proposed design change.

The proposed revision to license condition 2.C.(20) will allow a necessary design change to prevent water hammer in SSW loop B piping, permit SSW loop B flow testing and permit evolutions involving alternate decay heat removal methods. Since the SSW subsystem associated with an open valve to the fuel pool cooler must be declared inoperable by the proposed change, assurance is provided by appropriate technical specification action statements that the plant will be maintained in a safe condition.

The proposed temporary license condition will be in effect only while the plant is in cold shutdown. The major heat load handled by SSW during cold shutdown is decay heat from the reactor fuel. After day 17 from plant shutdown the dominant heat load on the SSW system (after a loss of offsite power coincident with the design basis loss of coolant accident) is from running equipment instead of reactor decay heat. The probability of a design basis loss of coolant accident while the plant is in cold shutdown is low and the consequences of the accident are small in comparison to having the accident at 100% power. The diversity of water sources offered for makeup to SSW basin A will ensure a water supply after the present capacity of 16 days (from day eight of the outage) is used. Even in the unlikely event that no makeup can be provided, the inventory of water between 107' and 84' can be utilized with a relatively small reduction in the design flow to equipment. If the provisions of the proposed license condition cannot be met, SSW basin A will be declared inoperable and appropriate technical specification action requirements will be implemented.

The proposed changes do not involve a significant increase in the probability or consequences of an accident previously evaluated because of the low probability of an accident while the plant is in cold shutdown and the consequences of an accident in cold shutdown are not as severe as when the plant is at power. When the design change is complete, the increased flow and basin draindown ability of the new SSW pump will provide greater heat removal capacity than the present pump. Design requirements of 30 days without makeup water are assured (by use of the siphon between SSW basins A and B if required) until the first refueling outage. MP&L will provide a submittal prior to the first refueling outage to request operating license changes to facilitate SSW basin A design changes and removal of present restrictions on SSW operability and spent fuel storage prohibitions.

The proposed changes do not create the possibility of a new or different kind of accident from any accident previously evaluated because the license condition ensures an adequate supply of water to SSW basin A while the design change is in progress. Once the design change is completed, SSW basin design requirements of 30 days without makeup water will be assured (by use of the

siphon if required) until the first refueling outage. MP&L will provide a submittal prior to the first refueling outage to request operating license changes to facilitate SSW basin A design changes and removal of present restrictions on SSW operability and spent fuel storage prohibitions. Thus, no new or different accident scenarios are postulated by performing the proposed design change to SSW basin B.

The proposed changes do not involve a significant reduction in a margin of safety because the proposed license condition ensures a water supply for SSW basin A while the design change is being performed. The increased capacity of the new SSW pump will increase the margin of safety by increasing the heat removal ability of SSW basin B.

Therefore, the proposed changes involve no significant hazards considerations.