



# MISSISSIPPI POWER & LIGHT COMPANY

*Helping Build Mississippi*

P. O. BOX 1640, JACKSON, MISSISSIPPI 39215-1640

May 19, 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-86/09)  
AECM-86/0150

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

Attachment 1 to this letter contains proposed changes to Operating License NPF-29 as follows:

- o The addition of another undervoltage protection device and emergency override of the test mode for the Division 3 diesel generator.
- o Modification of Loop A of the Standby Service Water (SSW) system to provide design flows to all essential components.
- o Provide a method for validating End-of-Cycle Recirculation Pump Trip system arc suppression time.
- o Increasing the test loads for the Division 1 and 2 batteries.

In a letter from Mr. O. D. Kingsley, Jr. to Mr. Harold R. Denton dated August 23, 1985, MP&L committed to provide the NRC with SSW heat load and inventory calculations prior to the first refueling outage. Attachment 2 to this letter provides an analysis that demonstrates, upon completion of planned modifications to SSW loop A at the first refueling outage, the SSW system will meet the criteria of Regulatory Guide 1.27. This analysis assumes an operable siphon between SSW Basins A and B and does include the peak heat load associated with the high density fuel racks.

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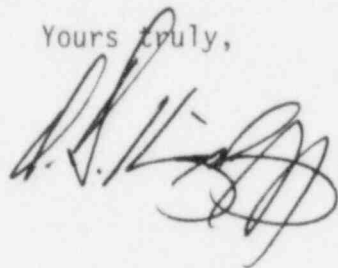
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In accordance with the provisions of 10 CFR 50.30, three (3) signed originals and forty (40) copies of the requested amendment are enclosed. The attachment provides the complete technical justification and discussion to support the requested amendment. 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 170.21, we have determined that the application fee is \$150. A remittance of \$150 is attached to this letter.

Yours truly,



ODK:lm

Attachments: GGNS PCOL-86/09  
SSW Analysis Summary

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

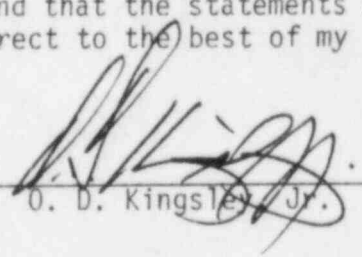
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LICENSE NO. NPF-29

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DOCKET NO. 50-416

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

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AFFIRMATION

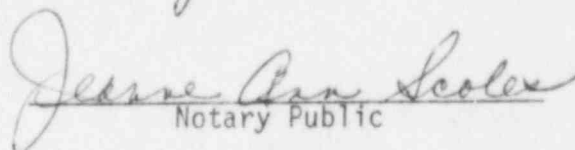
I, O. D. Kingsley, Jr., being duly sworn, stated that I am Vice President, Nuclear Operations of Mississippi Power & Light Company; that on behalf of Mississippi Power & Light Company, Middle South Energy, Inc., and South Mississippi Electric Power Association I am authorized by Mississippi Power & Light 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.

  
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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 19<sup>th</sup> day of May, 1986.

(SEAL)

  
\_\_\_\_\_  
Notary Public

My commission expires:

My Commission Expires Sep. 21, 1987

1. NPE-86/08

SUBJECT: Technical Specification Tables 3.3.3-1, 3.3.3-2, and 4.3.3.1-1 pages 3/4 3-29, 32, 35. Technical Specification 4.8.1.1.2.d.12 page 3/4 8-6.

DISCUSSION: The proposed technical specification changes result from design changes to the plant to add an additional undervoltage protection device and emergency override of the test mode for the Division 3 HPCS diesel generator.

As done on several recent Technical Specification changes involving design changes to the Plant, it is requested that the NRC issue the changes with an open effective date and require that MP&L notify the NRC within 30 days of the effective date of implementation of the affected technical specification changes. This design change is scheduled for implementation not later than startup following the first refueling outage.

JUSTIFICATION: Mississippi Power & Light committed to add an additional undervoltage protection device and to provide an emergency override of the test mode for the Division 3 diesel generator in a letter to Mr. Harold R. Denton from L. F. Dale dated July 3, 1984 (AECM-84/0326), and these commitments were subsequently placed in Facility Operating License NPF-29 as Operating License Conditions 2.C.(37) a and b. Attached to this proposed change is a drawing showing arrangement and function of the new system components.

The first part of the proposed change provides an additional undervoltage protection device. This undervoltage protection consists of two specific elements, one associated with non-accident conditions and the other associated with accident conditions. This design change installs a new first level of undervoltage protection which protects the HPCS equipment from a sustained degraded voltage condition. Equipment added by this change includes one additional auxiliary relay, four undervoltage relays, and two timing relays. The existing undervoltage protection on the HPCS bus will become the second level of protection once the design change is implemented. The allowable values proposed for Table 3.3.3-2 reflect a tolerance of 2.8% which is the sum of the maximum tolerance for repeatability and calibration.

The non-accident portion of the change provides a 5 minute time delay setting on the HPCS bus when the bus voltage is at or below 88% when supplied from the off-site power source. During an accident condition (LOCA), a bus undervoltage of 88% and a time delay of 4 seconds will initiate a HPCS system undervoltage alarm in the main control room. The undervoltage signal will

also cause the auxiliary relay to bypass the timing relay thus tripping breakers No. 4, 5, & 6 which consist of ESF Transformer sources No. 12, 21 and 11 connected to the 4160 volt HPCS bus. In this case the HPCS bus will be fed from the HPCS diesel generator.

During normal conditions, a bus undervoltage of 88% and a time delay of 4 seconds will initiate a HPCS system undervoltage alarm in the main control room and initiate a time delay of 5 minutes. After five minutes of sustained undervoltage, breakers No. 4, 5, & 6 will be tripped and the HPCS bus will be fed from the HPCS diesel generator. During this 5 minutes, if the bus voltage drops below 72%, breakers No. 4, 5, & 6 will be tripped by the existing level of undervoltage protection.

The major loads on the HPCS bus consist of a 4160 volt HPCS pump motor (E22C001), the 480 volt motor operated valves (MOV's) associated with the HPCS system, and the Division 3 battery charger. The HPCS pump motor and 480 volt MOV's have been designed to start at 75% of their nominal voltage. Analyses performed for the HPCS pump motor and 480 volt MOV's have shown that a voltage drop to 72% for 5 minutes is not likely to damage or reduce the life expectancy. The only other equipment connected to the Division 3 bus that could be adversely affected by undervoltage is the Division 3 battery charger which is not affected unless the voltage is less than 85% of nominal voltage; below 85% of nominal voltage the output and input current decrease, but there is not thermal or other damage. In any event, the Division 3 batteries will handle the DC load for at least four hours which provides ample time to identify the problem and apply corrective action to the undervoltage conditions.

The second part of the proposed change provides emergency override protection while the Division 3 Diesel Generator is in the test mode. Presently, if a LOCA occurs while the HPCS diesel generator is in the test mode, the diesel remains on line in the test mode. This change uses auxiliary relay contacts connected to stationary contacts of the three bus feeder breakers (4, 5, and 6) so that if any of the three breakers are closed and a LOCA occurs, the diesel generator bus feeder breaker is tripped and the diesel generator remains running in standby. If all three feeder breakers (4, 5, and 6) are tripped, the diesel generator stays on line. Incorporation of this design change will permit response to bonafide emergency signals and will return control of the diesel generator to the emergency standby mode. This design feature is incorporated on the Division I and II diesels and is required by position 1 of Regulatory Guide 1.108 (August 1977) as referenced by position 1 of revision 2 of Regulatory Guide 1.9 (December 1979) and Section 5.6.6.2.(1) of IEEE Std. 387-1977. The addition of emergency override to the Division 3 power supply system will be designed using the same criteria used in the Division I and II power systems.

#### SIGNIFICANT HAZARDS CONSIDERATIONS:

The design change associated with this proposed technical specification change provides assurance that the loads connected to the Division 3 bus will trip before possible damage from a sustained undervoltage condition occurs and that the Division 3 generator returns to the standby mode when an emergency signal is detected.

The proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated because it adds improvements not currently listed in the technical specifications. These proposed changes will enhance the Division 3 power system response to under-voltage conditions and will further ensure readiness of the HPCS Diesel Generator to respond to degraded voltage conditions during a LOCA. Therefore, these changes cannot increase the probability or consequences of an accident.

The proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated. This change will add a protective means to ensure reliable operation of the Division 3 loads as well as ensuring the Division 3 Diesel Generator is returned to standby and is available for emergency situations. The addition of these protective features does not create the possibility of a new or different kind of accident.

The proposed change does not involve a significant reduction in the margin of safety because the proposed design changes will increase the reliability of the Division 3 power system. The addition of another level of undervoltage protection will increase the margin of safety associated with undervoltage protection of HPCS equipment. The return to standby feature from the test mode will also increase the margin of safety by further ensuring the Division 3 Diesel Generator's capability to respond to accident situations.

Therefore, the proposed changes involve no significant hazards considerations.