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Docket No. 50-416

Mr. J.P. McGaughy, Jr.  
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Region II

Dear Mr. McGaughy:

Subject: Amendment No. 6 to Facility Operating License No. NPF-13 -  
Grand Gulf Nuclear Station, Unit 1

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 6 to Facility Operating License No. NPF-13 for the Grand Gulf Nuclear Station, Unit 1. The amendment is in response to your letters dated October 21 and December 22, 1982 and February 2, 1983. The amendment grants changes to license conditions which relate to the schedule for submitting information on proposed modifications to the Automatic Depressurization System logic and to additional one time Technical Specification exceptions for Phase I operation.

As discussed with and agreed to by your staff on January 28, 1983, this amendment also contains a condition regarding implementation of certain aspects of the recently signed Public Law 97-425, January 7, 1983 (Nuclear Waste Policy Act of 1982).

A copy of the related safety evaluation supporting Amendment No. 6 to Facility Operating License NPF-13 is enclosed. Also enclosed is a copy of a related notice which has been forwarded to the Office of the Federal Register for publication.

Sincerely,

A. Schwencer, Chief  
Licensing Branch No. 2  
Division of Licensing

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P PDR

Enclosures:

- 1. Amendment No. 6 to NPF-13
- 2. Safety Evaluation
- 3. Federal Register Notice

cc w/ enclosures:

OFFICE	See next page	DL:LB#2/PM <i>3/2/83</i>	DL:LB#2/LA	OELD <i>Wagner 2/7/83</i>	DL:LB#2/BC <i>ASchwencer</i>	DL:AD/L <i>TNovak</i>	
SURNAME		DHouston:pt <i>2/4/83</i>	EHylton		<i>ASchwencer</i>	<i>TNovak</i>	
DATE					<i>2/4/83</i>	<i>2/7/83</i>	

Grand Gulf

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MISSISSIPPI POWER AND LIGHT COMPANY  
MIDDLE SOUTH ENERGY, INC.  
SOUTH MISSISSIPPI ELECTRIC POWER ASSOCIATION  
DOCKET NO. 50-416  
GRAND GULF NUCLEAR STATION, UNIT 1  
AMENDMENT TO FACILITY OPERATING LICENSE

License No. NPF-13  
 Amendment No. 6

1. The Nuclear Regulatory Commission (the Commission or the NRC) has found that:
  - A. The applications for the amendments filed by the Mississippi Power and Light Company dated October 21 and December 22, 1982 and February 2, 1983 comply with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's regulations set forth in 10 CFR Chapter I;
  - B. The facility will operate in conformity with the application, the provisions of the Act, and the regulations of the Commission;
  - C. There is reasonable assurance: (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
  - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
  - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
  
2. Accordingly, the license is amended as follows:
  - A. Add items (h) and (i) to paragraph 2.C.(42) to read as follows:
    - (h) The provisions of Specifications 2.1.4; 3.3.2; Table 3.3.2-1, Item 3.a; 3.3.3; Table 3.3.3-1; 3.5.2; applicable portions of 3.6.6 (as referenced by Note (h) of Table 3.3.2-1); 3.9.8; 3.9.9 and 3.9.11 may be suspended for the purpose of installing protective sleeves on the Bottom Entry Incore Assemblies.

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(i) The provisions of Specification 3.9.11 may be suspended for the purpose of replacing startup sources and reinstallation of vibration monitoring equipment.

B. Change paragraph 2.C.(44)(i)(a) to read as follows:

(a) By December 15, 1982, MP&L shall evaluate the alternative design modifications of the BWR Owners Group relative to the logic for the automatic depressurization system, submit such evaluation and propose modifications to NRC for review and approval.

3. Within 90 days after the issuance of this amendment, or such other time as the Commission may specify, MP&L shall satisfy any applicable requirement of P.L. 97-425 related to pursuing an agreement with the Secretary of Energy for the disposal of high-level radioactive waste and spent nuclear fuel.

4. This amendment is effective as of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Original signed by:

*R. Purple for*

Darrell G. Eisenhut, Director  
Division of Licensing  
Office of Nuclear Reactor Regulation

Date of Issuance:

OFFICE ▶	DL:LB#2/PM	DL:LB#2/LA	OELD	DL:LB#2/BC	DL:AD/L	DL:DIR	
SURNAME ▶	DHouston:pt	EHilton	<i>Walker</i>	ASchwencer	Novak	DEisenhut	
DATE ▶	2/7/83	2/1/83	2/7/83	2/7/83	2/7/83	2/7/83	

(i) The provisions of Specification 3.9.11 may be suspended for the purpose of replacing startup sources and reinstallation of vibration monitoring equipment.

B. Change paragraph 2.C.(44)(i)(a) to read as follows:

(a) By December 15, 1982, MP&L shall evaluate the alternative design modifications of the BWR Owners Group relative to the logic for the automatic depressurization system, submit such evaluation and propose modifications to NRC for review and approval.

- 3. Within 90 days after the issuance of this amendment, or such later time as the Commission may specify, MP&L shall satisfy any applicable requirement of P.L. 97-425 related to pursuing an agreement with the Secretary of Energy for the disposal of high-level radioactive waste and spent nuclear fuel.
- 4. This amendment with respect to the change to paragraph 2.C.(44)(i)(a) was effective November 1, 1982. With respect to items (h) and (i) to paragraph 2.C.(42), this amendment is effective as of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Darrell G. Eisenhut, Director  
Division of Licensing  
Office of Nuclear Reactor Regulation

Date of Issuance:

\*SEE ATTACHED PAGE FOR PREVIOUS CONCURRENCES

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SURNAME	DHouston:pt	EHylton	MWagner	ASchwencer	TNovak	DEisenhut	
DATE	2/4/83	2/ /83	2/7/83	2/4/83	2/ /83	2/7/83	



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

SAFETY EVALUATION  
AMENDMENT NO. 6 TO NPF-13  
GRAND GULF NUCLEAR STATION, UNIT-1  
DOCKET NO. 50-416

Introduction

The licensee proposed changes to the License for Grand Gulf Unit 1 which are as follows:

- a) License Condition 2.C.42, Additional one time Technical Specifications exceptions for Phase I operations (MP&L letters dated December 22, 1982 and February 2, 1983).
- b) License Condition 2.C.44.i.a, schedule for submitting proposed modifications for Automatic Depressurization System logic (MP&L letter dated October 21, 1982).

Evaluation

a) Additional One Time Technical Specification Exceptions

By letters dated December 22, 1982 and February 2, 1983, the licensee requested that additional one time Technical Specifications be excepted for Phase I operation for the purpose of installing protective sleeves on the Bottom Entry Incore Assemblies, replacing the startup sources and reinstalling vibration monitoring equipment. Other information in regard to the protective sleeves was provided at our request by the licensee in a letter dated January 18, 1983. The Technical Specification exceptions are related to reactor vessel water level, ECCS systems, containment isolation and ECCS actuation instrumentation, spent fuel pool water level and shutdown cooling loop operation. The protective sleeve installation work requires an exception for all of these Technical Specifications while the work with startup sources and vibration monitoring equipment only requires an exception for shutdown cooling loop operation.

During initial fuel loading at Grand Gulf, five Bottom Entry Incore Assemblies, more commonly known as Local Power Range Monitoring (LPRM) Assemblies, were damaged due to a hang up between the square shoulders of the fuel channel box and the top end of the LPRM cover tube. In order to preclude assembly damage during future refueling operations, the licensee proposes to install protective sleeves over the top end region of all 44 LPRM tubes. The sleeves will have a smooth inclined exterior surface to eliminate hang up potential, will be constructed of Type 304 stainless steel (same as the LPRM tubes) and will be tack welded at 90 degree intervals to the LPRM tube. The materials selected are compatible with the LPRM assemblies (austenitic stainless steel) ordered to proper nonsensitized conditions. The welding to be performed is of such size that little or no sensitization may be reasonably anticipated. Work procedures appear to adequately emphasize cleanliness control to protect the reactor core from debris. Thus,

we find the proposed design of the protective sleeves for LPRM assemblies and the procedures for their attachment to be acceptable.

To perform the installation of sleeves on the LPRM tubes, the licensee proposes to: (a) remove 44 fuel assemblies from the core, one each associated with a LPRM location; (b) move these assemblies in air and store the assemblies in the upper in-containment storage racks under dry conditions, (c) lower the water level in the reactor pressure vessel to eighteen (18) inches below the top fuel guide, and (d) place personnel on the top fuel guide to manually position and weld the sleeve to the LPRM tube.

The licensee has made an assessment of the radiological and thermal (decay heat) status of the fuel in the core. The fuel has only experienced initial criticality for two or three hours and that on August 18, 1982. The core was estimated to have operated below 0.06 MW(th), equivalent to less than 0.0015 percent of full power. Based on the low thermal power generated and the long decay time, the licensee estimated that radiation levels will be on the order of 10 mr/hr at a distance of one foot from the fuel in air and that fission product inventory and decay heat will be insignificant. Further, the licensee estimated that a total integrated exposure of 1.5 Person-Rems would result for the proposed LPRM sleeving modification. This exposure is calculated on the basis of five persons per shift and three shifts per day over a five day period. Thus, the exposure per individual is estimated at 0.1 Person-Rems.

The licensee has committed to perform the in-vessel work consistent with Regulatory Guide 8.8, "Information Relevant to Ensuring that Occupational Radiation Exposures at Nuclear Power Stations will be As Low As is Reasonably Achievable (ALARA)". They further state that the directives for controlling plant conditions during the work will be reviewed by the plant ALARA committee prior to implementation and that all work will follow existing plant procedures required for radiological work. On the basis that doses to personnel will be maintained within the limits specified in 10 CFR 20 and that the ALARA guidelines of Regulatory Guide 8.8 will be followed, we find the proposed procedures for the modifications and fuel assembly movement and storage to be acceptable.

As stated previously, the licensee proposes to lower the water level in the reactor pressure vessel to eighteen (18) inches below the top fuel guide and place personnel and equipment on the top fuel guide to perform the LPRM tube modification. This water level is well below the actuation set points for containment isolation actuation instrumentation and Emergency Core Cooling System (ECCS) actuation instrumentation. Therefore, the licensee has requested additional one time Technical Specification exceptions to allow this work to be performed and to protect personnel and equipment during this activity. Our

review indicates that the fuel has essentially no irradiation, is air coolable, and needs no ECCS water. As a result, a LOCA which could be different than those types previously evaluated, although possible, would have insignificant consequences. In particular, with the requested exception to these specifications, the possibility would exist for a loss-of-coolant accident with no automatic ECCS injection and an intentional delay before manual ECCS initiation. The delay in manual actuation would be necessary to allow maintenance personnel time to remove themselves from the reactor vessel. Our review indicates however, that for the present state of the Grand Gulf fuel, these ECCS systems would not be required, and there would be little or no increase in overall risk from such events because the consequences are negligible. This is due to the fact that the fission product inventory is considered to be insignificant with a decay heat rate so low that natural convection air cooling alone is sufficient to protect the fuel and cladding from overheating. Because the safety significance of these specifications is related to core coolability, decay heat removal and fission product containment and because the decay heat and fission product inventory are very low due to the brief period of criticality, we conclude that the exception of the requested Technical Specifications will not significantly increase the probability or consequences of an accident previously evaluated nor significantly reduce a margin of safety. Therefore, we find a one time exception for the requested Technical Specifications for the purpose of installing protective sleeves on the LPRM assemblies to be acceptable.

Additionally, the licensee proposes to install new startup sources and reinstall vibration monitoring equipment at this time. To perform this work, the licensee has requested an exception to the specification which concerns shutdown cooling loop operation. The reason for the request is to reduce turbulence which creates interference with camera and other equipment involved in the source replacement and to allow access near the feedwater spargers for reinstallation of vibration monitoring equipment. The requirement for shutdown cooling loop operation is based on a need for decay heat removal and to inhibit density stratification by promoting mixing. As stated above, the decay heat of this fuel is very low. Thus, shutdown cooling loop operation is not required at this time for either heat removal or mixing purposes. Therefore, we find a one time exception for the requested Technical Specification for the purpose of installing new startup sources and reinstalling vibration monitoring equipment to be acceptable.

b) Automatic-Depressurization-System-Logic-Modifications

The licensee has requested a change in the schedule for their submittal concerning proposed modifications to the Automatic Depressurization System (ADS) logic. When our previous safety evaluation report was issued on this subject, we had requested that this submittal be provided by November 1, 1982. This submittal date had been selected on the basis of a BWR Owners' Group Report on ADS logic scheduled for issuance on October 1, 1982. The schedule for the BWR Owners' Group Report was not under the control of the licensee. On October 21, 1982, the licensee informed us that the BWR Owners' Group Report schedule had been revised to October 29, 1982 and requested a change in the license condition



to reflect this slippage. The licensee proposed to provide their submittal by December 15, 1982 and based on the BWR Owners' Group Report schedule, we indicated verbal approval of this course of action.

In our previous safety evaluation report, we also required the licensee to implement our approved modification for ADS logic before startup after the first refueling outage. Since the issuance of that SER, the licensee's schedule for plant operation has slipped considerably. Therefore, a delay in the submittal date for the information in regard to proposed modifications to the ADS logic will neither impact our review or their implementation schedule. Therefore, we found this change in the submittal schedule for this item to be acceptable.

After the licensee had reviewed the BWR Owners' Group Report issued on October 28, 1982, they anticipated some further difficulties in providing their submittal by December 15, 1982. Therefore, we did not process the amendment at that time because of the uncertainty of the submittal date. The licensee's review effort proceeded without delay and they provided a submittal dated December 14, 1982, with their evaluation of the report and details of the modification selected for Grand Gulf. The submittal fulfilled the requirement of this license condition as proposed. Since the submittal was delivered to us on the day specified in the proposed schedule, we decided to process this change in schedule with other issues in the next amendment at a later date rather than issue an amendment to handle only this item.

#### Environmental Consideration

We have determined that this amendment does not authorize a change in effluent types or total amount nor an increase in power level and will not result in any significant environmental impact. Having made this determination, we have further concluded that this amendment involves action which is insignificant from the standpoint of environmental impact, and, pursuant to 10 CFR Section 51.5(d)(4), that an environmental impact statement or negative declaration and environmental impact appraisal need not be prepared in connection with the issuance of this statement.

#### Conclusion

We have concluded, based on the considerations discussed above, that: (1) because the amendment does not involve a significant increase in the probability or consequences of accidents previously considered and does not involve a significant decrease in a safety margin, the amendment does not involve a significant hazards consideration, (2) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (3) such activities will be conducted in compliance with the Commission's regulations and the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

Dated: February 7, 1983

UNITED STATES NUCLEAR REGULATORY COMMISSION

DOCKET NO. 50-416

MISSISSIPPI POWER AND LIGHT COMPANY

MIDDLE SOUTH ENERGY, INC.

SOUTH MISSISSIPPI ELECTRIC POWER ASSOCIATION

NOTICE OF ISSUANCE OF AMENDMENT OF FACILITY

OPERATING LICENSE

The U.S. Nuclear Regulatory Commission (the Commission) has issued Amendment No. 6 to Facility Operating License No. NPF-13, issued to Mississippi Power and Light Company, Middle South Energy, Inc., and South Mississippi Electric Power Association (the licensees), for Grand Gulf Nuclear Station, Unit No. 1 (the facility) located in Claiborne County, Mississippi. This amendment grants changes to license conditions which relate to the schedule for submitting information on proposed modifications to the Automatic Depressurization System (ADS) logic and to additional one time Technical Specification exceptions for Phase I operation and adds a license condition regarding implementation of certain aspects of P. L. 97-425, January 7, 1983 (Nuclear Waste Policy Act of 1982). The amendment with respect to the submittal date for ADS logic was effective November 1, 1982. With respect to the other two items the amendment is effective as of the date of issuance.

The applications for the amendments comply with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's regulations. The Commission has made appropriate findings as required by the Act and the Commission's regulations in 10 CFR Chapter I, which are set forth in the license amendment. Prior public notice of this amendment was not required

since the amendment does not involve a significant hazards consideration.

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The Commission has determined that the issuance of this amendment will not result in any significant environmental impact and that pursuant to 10 CFR Section 51.5(d)(4) an environmental impact statement, or negative declaration and environmental impact appraisal need not be prepared in connection with issuance of this amendment.

For further details with respect to this action, see (1) the applications for the amendments dated October 21 and December 22, 1982 and February 2, 1983; (2) Amendment No. 6 to License NPF-13 dated February 7, 1983; and (3) the Commission's evaluation dated February 7, 1983. All of these items are available for public inspection at the Commission's Public Document Room, 1717 H Street, N.W., Washington, D.C. 20555, and at the Hinds Jr. College, George M. McLendon Library, Raymond, Mississippi 39154. A copy of items (1), (2) and (3) may be obtained upon request addressed to the U. S. Nuclear Regulatory Commission, Washington, D.C. 20555, Attention: Director, Division of Licensing.

Dated at Bethesda, Maryland, this 7th day of February 1983.

FOR THE NUCLEAR REGULATORY COMMISSION

Original signed by:

A. Schwencer, Chief  
Licensing Branch No. 2  
Division of Licensing

\*SEE ATTACHED PAGE FOR PREVIOUS CONCURRENCES

OFFICE	DL:LB#2/PM *	DL:LB#2/LA	DL:LB#2/BC*	OELD*			
SURNAME	DHouston:pt	EHylton	ASchwencer	MWagner			
DATE	2/4/83	2/ /83	2/7/83	2/4/83			

The Commission has determined that the issuance of this amendment will not result in any significant environmental impact and that pursuant to 10 CFR Section 51.5(d)(4) an environmental impact statement, or negative declaration and environmental impact appraisal need not be prepared in connection with issuance of this amendment.

For further details with respect to this action, see (1) the applications for the amendments dated October 21 and December 22, 1982 and February 2, 1983; (2) Amendment No. 6 to License NPF-13 dated February , 1983; and (3) the Commission's evaluation dated February , 1983. All of these items are available for public inspection at the Commission's Public Document Room, 1717 H Street, N.W., Washington, D.C. 20555, and at the Hinds Jr. College, George M. McLendon Library, Raymond, Mississippi 39154. A copy of items (1), (2) and (3) may be obtained upon request addressed to the U. S. Nuclear Regulatory Commission, Washington, D.C. 20555, Attention: Director, Division of Licensing.

Dated at Bethesda, Maryland, this                      day of February 1983.

FOR THE NUCLEAR REGULATORY COMMISSION

A. Schwencer, Chief  
Licensing Branch No. 2  
Division of Licensing

*No change in Note (original of Note)  
JRL 2/7/83*

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