

December 6, 1988

Docket No. 50-416

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Mr. W. T. Cottle  
Vice President, Nuclear Operations  
System Energy Resources, Inc.  
Post Office Box 23054  
Jackson, Mississippi 39205

Dear Mr. Cottle:

SUBJECT: ISSUANCE OF AMENDMENT NO. 53 TO FACILITY OPERATING LICENSE  
NO. NPF-29 - GRAND GULF NUCLEAR STATION, UNIT 1, REGARDING  
MONITORING NEUTRON FLUX (TAC NO. 68675)

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 53 to Facility Operating License No. NPF-29 for the Grand Gulf Nuclear Station, Unit 1. This amendment consists of changes to the Operating License in response to your application dated July 1, 1988.

The amendment changes Attachment 1 to the Operating License by extending the implementation date for meeting the recommendations of Regulatory Guide 1.97 for neutron flux monitoring instrumentation until the fourth refueling outage. The fourth refueling outage is scheduled to start in August 1990.

A copy of the Safety Evaluation is also enclosed. The Notice of Issuance will be included in the Commission's bi-weekly Federal Register notice.

Sincerely,

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Lester L. Kintner, Senior Project Manager  
Project Directorate II-1  
Division of Reactor Projects I/II

Enclosures:

- 1. Amendment
- 2. Safety Evaluation

cc w/enclosures:  
See next page

*C/P-1*

OFC	:LA:PD21:DRPR:PM:PD21:DRPR:D:PD21:DRPR	:	:	:	:	:	:	:
NAME	:P. Anderson :L. Kintner:jw:E. Adensam	:	:	:	:	:	:	:
DATE	:10/14/88 :10/10/88 :10/30/88	:	:	:	:	:	:	:

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Mr. W. T. Cottle  
System Energy Resources, Inc.

Grand Gulf Nuclear Station (GGNS)

cc:

Mr. T. H. Cloninger  
Vice President, Nuclear Engineering  
and Support  
System Energy Resources, Inc.  
P. O. Box 23054  
Jackson, Mississippi 39205

Mr. C. R. Hutchinson  
GGNS General Manager  
System Energy Resources, Inc.  
Post Office Box 756  
Port Gibson, Mississippi 39150

Robert B. McGehee, Esquire  
Wise, Carter, Child, Steen and  
Caraway  
P. O. Box 651  
Jackson, Mississippi 39205

The Honorable William J. Guste, Jr.  
Attorney General  
Department of Justice  
State of Louisiana  
Baton Rouge, Louisiana 70804

Nicholas S. Reynolds, Esquire  
Bishop, Liberman, Cook, Purcell  
and Reynolds  
1400 L Street, N.W.  
Washington, D.C. 20005-3502

Office of the Governor  
State of Mississippi  
Jackson, Mississippi 39201

Mr. Ralph T. Lally  
Manager of Quality Assurance  
Middle South Utilities System  
Services, Inc.  
639 Loyola Avenue, 3rd Floor  
New Orleans, Louisiana 70113

Attorney General  
Gartin Building  
Jackson, Mississippi 39205

Mr. John G. Cesare  
Director, Nuclear Licensing  
System Energy Resources, Inc.  
P. O. Box 23054  
Jackson, Mississippi 39205

Mr. Jack McMillan, Director  
Division of Solid Waste Management  
Mississippi Department of Natural  
Resources  
Post Office Box 10385  
Jackson, Mississippi 39209

Mr. C. B. Hogg, Project Manager  
Bechtel Power Corporation  
P. O. Box 2166  
Houston, Texas 77252-2166

Alton B. Cobb, M.D.  
State Health Officer  
State Board of Health  
P.O. Box 1700  
Jackson, Mississippi 39205

Mr. H. O. Christensen  
Senior Resident Inspector  
U.S. Nuclear Regulatory Commission  
Route 2, Box 399  
Port Gibson, Mississippi 39150

President  
Claiborne County Board of Supervisors  
Port Gibson, Mississippi 39150

Regional Administrator, Region II  
U. S. Nuclear Regulatory Commission  
101 Marietta Street  
Suite 2900  
Atlanta, Georgia 30323

AMENDMENT NO. 53 TO FACILITY OPERATING LICENSE NO. NPF-29 - GRAND GULF

Docket File

NRC PDR

Local PDR

PDII-1 Reading

S. Varga (14E4)

G. Lainas

E. Adensam

P. Anderson

L. Kintner

OGC

D. Hagan (MNBB 3302)

E. Jordan (MNBB 3302)

B. Grimes (9A2)

T. Barnhart (4) (P1-137)

W. Jones (P-130A)

E. Butcher (11F23)

B. Marcus (7E12)

ACRS (10)

GPA/PA

ARM/LFMB

cc: Licensee/Applicant Service List



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

MISSISSIPPI POWER & LIGHT COMPANY

SYSTEM ENERGY RESOURCES, INC.

SOUTH MISSISSIPPI ELECTRIC POWER ASSOCIATION

DOCKET NO. 50-416

GRAND GULF NUCLEAR STATION, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 53  
License No. NPF-29

1. The Nuclear Regulatory Commission (the Commission) has found that
  - A. The application for amendment by System Energy Resources, Inc., (the licensee), dated July 1, 1988, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and 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 rules and 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.

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2. Accordingly, the license is amended by changes to the Technical Specifications, as indicated in the attachment to this license amendment; and paragraph 2.C.(2) of Facility Operating License No. NPF-29 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 53, are hereby incorporated into this license. System Energy Resources, Inc. shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of its date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

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Elinor G. Adensam, Director  
Project Directorate II-1  
Division of Reactor Projects I/II

Attachment:  
Changes to the Technical  
Specifications

Date of Issuance: December 6, 1988

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OFC	:LA:PDAT:DRPR:PM:PD21:DRPR:	OGC	:D:PD21:DRPR:	:	:
NAME	: PA Jackson	: LKintner:ch	: EAdensam	:	:
DATE	: 10/10/88	: 10/10/88	: 10/21/88	: 10/30/88	:

ATTACHMENT TO LICENSE AMENDMENT NO. 53

FACILITY OPERATING LICENSE NO. NPF-29

DOCKET NO. 50-416

Replace the following page of Attachment 1 to the Operating License with the attached page. The revised page is identified by Amendment number and contains a vertical line indicating the area of change.

Remove

Page 18

Insert

Page 18

NOVEMBER 1, 1984

## Attachment 1

SERI shall complete the following requirements on the schedule noted below:

Emergency Response Facilities (Generic Letter 82-33, NUREG-0737  
Supplement 1, SSER #5)

SERI shall implement the specific items below, in the manner described in MP&L letter (AECM-83/0232) dated April 15, 1983, as modified in MP&L letter (AECM-83/0486) dated August 22, 1983, no later than the following specified dates:

- (a) Safety Parameter Display System (SPDS)
- |   |  |
|---|--|
| (1) Submit a safety analysis and implementation plan to the NRC | July 1985  |
| (2) SPDS fully operational and operator trained                 | Prior to startup following first refueling outage. |
- (b) Detailed Control Room Design Review (DCRDR)
- |   |               |
|---|---------------|
| (1) Submit a program plan to the NRC  | December 1984 |
| (2) Submit a summary report to the NRC including a proposed schedule for implementation | July 1986     |
- (c) Regulatory Guide 1.97 - Application to Emergency Response Facilities
- |   |   |
|---|---|
| (1) Submit a report to the NRC describing how the requirements of Supplement 1 to NUREG-0737 have been or will be met.            | February 1985                                       |
| (2) Implement (installation or upgrade) requirements of R.G. 1.97 with exception of flux monitoring and coolant level monitoring. | Prior to startup following first refueling outage.  |
| (3) Implement (installation or upgrade) requirements of R.G. 1.97 for coolant level monitoring.                                   | Prior to startup following second refueling outage. |
| (4) Implement (installation or upgrade) requirements of R.G. 1.97 for flux monitoring.  | Prior to startup following fourth refueling outage  |
- (d) Upgrade Emergency Operating Procedures (EOP's)
- |  |            |
|--|------------|
| (1) Submit a Procedures Generation Package to the NRC. | April 1985 |
|--|------------|



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 53 TO FACILITY OPERATING LICENSE NO. NFP-29

MISSISSIPPI POWER & LIGHT COMPANY

SYSTEM ENERGY RESOURCES, INC.

SOUTH MISSISSIPPI ELECTRIC POWER ASSOCIATION

GRAND GULF NUCLEAR STATION, UNIT 1

DOCKET NO. 50-416

1.0 INTRODUCTION

By letter dated July 1, 1988, System Energy Resources, Inc. (SERI) requested an amendment to Facility Operating License No. NFP-29 for the Grand Gulf Nuclear Station, Unit 1. License Condition 2.C.(36), of Operating License No. NFP-29, requires that prior to startup from the third refueling outage, the licensee shall implement the installation or upgrade criteria of Regulatory Guide (R.G.) 1.97 for neutron flux monitoring. The proposed amendment would modify License Condition 2.C.(36) to delay the implementation of neutron flux monitoring system modifications from prior to startup following the third refueling outage to prior to startup following the fourth refueling outage.

On January 12, 1987, the staff issued a safety evaluation regarding the licensee's conformance to R.G. 1.97. This safety evaluation concluded that the Grand Gulf Nuclear Station design was acceptable with respect to the provisions of R.G. 1.97, Revision 2, except for instrumentation associated with the neutron flux variable. The staff found that the existing neutron flux instrumentation was acceptable for interim operation; however, the safety evaluation concluded that prior to startup from the second refueling outage, the licensee must install or upgrade the neutron flux instrumentation to conform to R.G. 1.97, Revision 2.

By letter dated July 1, 1987, the licensee requested that the implementation date for the installation or upgrade of the neutron flux instrumentation be changed from prior to the startup following the second refueling outage to prior to startup following the third refueling outage. The licensee stated that they followed the industry development of neutron flux instrumentation that meets R.G. 1.97 criteria and that the scheduling, procurement and installation of a system meeting R.G. 1.97 would not be possible during the second refueling outage. On December 2, 1987, the staff approved the requested schedule change in Amendment No. 37 to the license.

The proposed change requested by the licensee's July 1, 1988 submittal would change the license condition to state that the licensee shall implement the installation or upgrade recommendations of R.G. 1.97 for neutron flux monitoring prior to startup following the fourth refueling outage.

## 2.0 EVALUATION

The licensee stated that the Boiling Water Reactor Owner's Group (BWROG) licensing topical report (LTR) NEDO-31558 was submitted for the staff's review on April 1, 1988. This LTR, which is currently under review by the staff, concludes that the existing BWR neutron monitoring system design is generally adequate for every postulated event and that a fully qualified Class 1E system for post-accident monitoring, as recommended in R.G. 1.97, is not appropriate or justified. The licensee's submittal indicates that, based on a plant specific evaluation, the Grand Gulf design meets all criteria provided in the topical report and, on this basis, the licensee concludes that the present neutron flux monitoring system meets the functional safety intent of R.G. 1.97. The licensee requested that the technical arguments presented in the BWROG LTR, along with the Grand Gulf Nuclear Station plant specific design evaluation, submitted on April 28, 1988, be evaluated by the staff prior to the implementation of modifications. The licensee has also requested that the staff review the General Electric LTR NEDO-31439 (GE Wide Range Neutron Monitoring System).

The licensee has followed industry development of neutron flux monitoring instrumentation designed to meet the R.G. 1.97 criteria and has reviewed several options. Because of procurement lead times of 6 to 12 months for qualified neutron flux monitoring instrumentation, the licensee is unable to effectively plan, design and install a system that meets the R.G. 1.97 criteria during the third refueling outage.

The licensee has committed to install an incore neutron monitoring system, that meets the recommendations of R.G. 1.97. The licensee has also agreed to provide the staff with quarterly updates of the progress of procurement, design and installation of a qualified system. Until the post-accident qualified neutron flux monitoring system is installed and operational, the licensee would use the presently installed neutron flux monitoring system and other post-accident qualified instrumentation. The presently installed system is expected to function during the initial phase of an accident (including a LOCA) to indicate subcritical reactor power. Long term monitoring is available through the APRM channels where operator action is required at the APRM downscale alarm. However, since the presently installed system is not fully qualified to R.G. 1.97, Category 1, requirements, long term monitoring in a harsh environment may not be directly available over the entire R.G. 1.97 range. In this event, other measures and indications are available to the operator, as discussed below:

- (a) The present control rod position indication system provides the reactor operator with the information that all rods are inserted.

- (b) Qualified instrumentation, such as reactor pressure, suppression pool temperature and safety relief valve (SRV) actuation, provides the reactor operator with post-accident information for assessment of reactor power if direct neutron monitoring capability is not available.
- (c) The Emergency Procedures (EP) are symptom based and provide appropriately conservative actions if reactor power can not be directly measured in a post-accident situation. The EP contain action steps that mitigate the symptomatic effects of design basis events (such as LOCA), and beyond design basis events (such as ATWS).

The compensatory measures listed above ensure that the consequences of an accident previously evaluated will not be significantly increased by the absence of a post-accident neutron flux monitoring system during the fourth fuel cycle.

Based on the licensee's commitment to install neutron flux monitoring instrumentation that fully conforms to R.G. 1.97, Revision 2, by startup following the fourth refueling outage and to provide quarterly reports on the status and schedule for procurement, design and installation of the instrumentation, the staff concludes the proposed delay is acceptable.

### 3.0 ENVIRONMENTAL CONSIDERATION

Pursuant to 10 CFR 51.21, 51.32, and 51.35, an environmental assessment and finding of no significant impact have been prepared and published in the Federal Register on December 2, 1988 (53 FR 48745). Accordingly, based upon the environmental assessment, the Commission has determined that the issuance of this amendment will not have a significant impact on the quality of the human environment.

### 4.0 CONCLUSION

The Commission has issued a Notice of Consideration of Issuance of Amendment to Facility Operating License and Opportunity for Hearing which was published on August 2, 1988 in the Federal Register (53 FR 29094). No petition to intervene or request for hearing has been filed on this action.

The staff has concluded, based on the considerations discussed above, that: (1) there is no reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (2) 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 nor to the health and safety of the public.

Principal Contributor: B. Marcus, Instrumentation and Control Systems Branch

Dated: December 6, 1988

UNITED STATES NUCLEAR REGULATORY COMMISSION  
MISSISSIPPI POWER & LIGHT COMPANY  
SYSTEM ENERGY RESOURCES, INC.  
SOUTH MISSISSIPPI ELECTRIC POWER ASSOCIATION  
DOCKET NOS. 50-416  
NOTICE OF ISSUANCE OF AMENDMENT  
TO FACILITY OPERATING LICENSES

The U.S. Nuclear Regulatory Commission (Commission) has issued Amendment No. 52 to Facility Operating License No. NPF-29, issued to Mississippi Power and Light Company, System Energy Resources, Inc., and South Mississippi Electric Power Association, which revised the Technical Specifications for the operation of the Grand Gulf Nuclear Station, Unit 1, located in Claiborne County, Mississippi. The amendment is effective as of the date of issuance.

The amendment changes the Technical Specifications by separating the 24-hour surveillance test of emergency diesel generators from the surveillance test simulating loss of offsite power in conjunction with an ECCS actuation signal.

The application for the amendment complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations. The Commission has made appropriate findings as required by the Act and the Commission's rules and regulations in 10 CFR Chapter I, which are set forth in the license amendment.

Notice of Consideration of Issuance of Amendment and Opportunity for Hearing in connection with this action was published in the FEDERAL REGISTER on August 25, 1988 (53 FR 32487). No request for a hearing or petition for leave to intervene was filed following this notice.

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The Commission has prepared an Environmental Assessment related to the action and has determined not to prepare an environmental impact statement. Based upon the Environmental Assessment, the Commission has concluded that the issuance of this amendment will not have a significant effect on the quality of the human environment.

For further details with respect to the action see: (1) the application for amendment dated July 1, 1988, (2) Amendment No. 53 to License No. NPF-29, and (3) the Commission's related Safety Evaluation and Environmental Assessment. All of these items are available for public inspection at the Commission's Public Document Room, 2120 L Street NW, Washington, D. C. 20555 and at the Hinds Junior College, McLendon Library, Raymond, Mississippi 39154. A copy of items (2) and (3) may be obtained upon request, addressed to the U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, Attention: Director, Division of Reactor Projects I/II.

Dated at Rockville, Maryland this 6th day of December 1988.

FOR THE NUCLEAR REGULATORY COMMISSION

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Elinor G. Adensam, Director  
Project Directorate II-1  
Division of Reactor Projects I/II  
Office of Nuclear Reactor Regulation

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NAME	:P. Anderson :L. K. Turner:jw:	E. Adensam	:	:	:	:	:	:
DATE	:11/14/88 :11/14/88 :11/21/88	:11/30/88	:	:	:	:	:	:

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