November 14, 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. 49 TO FACILITY OPERATING LICENSE NO. NPF-29 - GRAND GULF NUCLEAR STATION, UNIT 1, REGARDING ROD PATTERN CONTROL SYSTEM TECHNICAL SPECIFICATIONS (TAC NO. 68730)

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 49 to Facility Operating License No. NPF-29 for the Grand Gulf Nuclear Station, Unit 1. This amendment consists of changes to the Technical Specifications (TS) in response to your application dated June 21, 1988.

The amendment changes the Technical Specifications by (1) deleting the requirement for daily functional tests of the low power setpoint and the high power setpoint in the rod pattern control system and (2) changing the applicable operational conditions for the high power setpoint from startup and power operation to power operation above the low power setpoint.

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,

/s/

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

Enclosures:
1. Amendment No. 49 to NPF-29
2. Safety Evaluation

cc w/enclosures:
See next page

*SEE PREVIOUS CONCURRENCES
(GGNS AMEND 68730)

OFC	:LA:PD21:DRPR	:PM:PD21:DRPR	:SRXB:DEST	:SICB:DEST	:D:PD21:DRPR	:	:
NAME	: PAnderson*	:LKintner:ch*	: WHodges*	: SNewberry*	: EAdensam*	:	:
DATE	: 10/19/88	: 10/20/88	: 10/25/88	: 10/27/88	: 10/27/88	:	:

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System Energy Resources, Inc.

Grand Gulf Nuclear Station (GGNS)

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AMENDMENT NO. 49 TO FACILITY OPERATING LICENSE NO. NPF-29 - GRAND GULF

Docket File
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OGC
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W. Hodges (8E23)
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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. 49
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 June 21, 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.

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. 49 , 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

Original signed by D. Verrelli for

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

Attachment:
Changes to the Technical
Specifications

Date of Issuance: November 14, 1988

OFC	:LA:PD21:DRPR	:PM:PD21:DRPR	:OGC	:D:PD21:DRPR	:	:	:
NAME	: PAnderson	:LKintner:ch	:EBachmann	:EAdensam	:	:	:
DATE	: 10/19/88	: 10/20/88	: 10/24/88	: 10/14/88	:	:	:

OFFICIAL RECORD COPY NB - changes to SE (p. 2)

ATTACHMENT TO LICENSE AMENDMENT NO. 49

FACILITY OPERATING LICENSE NO. NPF-29

DOCKET NO. 50-416

Replace the following pages of the Appendix "A" Technical Specifications with the attached pages. The revised pages are identified by Amendment number and contain vertical lines indicating the area of change.

Remove	Insert
3/4 3-53	3/4 3-53
3/4 3-54	3/4 3-54
3/4 3-56	3/4 3-56
3/4 3-57	3/4 3-57

TABLE 3.3.6-1

CONTROL ROD BLOCK INSTRUMENTATION

TRIP FUNCTION	MINIMUM OPERABLE CHANNELS PER TRIP FUNCTION	APPLICABLE OPERATIONAL CONDITIONS	ACTION
1. ROD PATTERN CONTROL SYSTEM			
a. Low Power Setpoint	2	1, 2	60
b. High Power Setpoint	2	1#	60
2. APRM			
a. Flow Biased Neutron Flux-Upscale	6	1	61
b. Inoperative	6	1, 2, 5	61
c. Downscale	6	1	61
d. Neutron Flux - Upscale, Startup	6	2, 5	61
3. SOURCE RANGE MONITORS			
a. Detector not full in(a,e)	4	2	61
	2**	5	62
b. Upscale(b)	4	2	61
	2**	5	62
c. Inoperative(b)	4	2	61
	2**	5	62
d. Downscale(c)	4	2	61
	2**	5	62
4. INTERMEDIATE RANGE MONITORS			
a. Detector not full in	6	2, 5	61
b. Upscale	6	2, 5	61
c. Inoperative	6	2, 5	61
d. Downscale(d)	6	2, 5	61
5. SCRAM DISCHARGE VOLUME			
a. Water Level-High	2	1, 2, 5*	62
6. REACTOR COOLANT SYSTEM RECIRCULATION FLOW			
a. Upscale	3	1	62
7. REACTOR MODE SWITCH SHUTDOWN POSITION	2	3, 4	63

TABLE 3.3.6-1 (Continued)

CONTROL ROD BLOCK INSTRUMENTATION

ACTION

ACTION 60 - Declare the RPCS inoperable and take the ACTION required by Specification 3.1.4.2.

ACTION 61 - With the number of OPERABLE Channels:

a. One less than required by the Minimum OPERABLE Channels per Trip Function requirement, restore the inoperable channel to OPERABLE status within 7 days or place the inoperable channel in the tripped condition within the next hour.

b. Two or more less than required by the Minimum OPERABLE Channels per Trip Function requirement, place at least one inoperable channel in the tripped condition within one hour.

ACTION 62 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip Function requirement, place the inoperable channel in the tripped condition within one hour.

ACTION 63 - With the number of OPERABLE channels less than required by the Minimum OPERABLE Channels per Trip Function requirement, initiate a rod block.

NOTES

* With more than one control rod withdrawn. Not applicable to control rods removed per Specification 3.9.10.1 or 3.9.10.2.

** OPERABLE channels must be associated with SRMs required OPERABLE per Specification 3.9.2.

\# With THERMAL POWER greater than the Low Power Setpoint.

(a) This function shall be automatically bypassed if detector count rate is > 100 cps or the IRM channels are on range 3 or higher.

(b) This function shall be automatically bypassed when the associated IRM channels are on range 8 or higher.

(c) This function shall be automatically bypassed when the IRM channels are on range 3 or higher.

(d) This function shall be automatically bypassed when the IRM channels are on range 1.

(e) The provisions of Specification 3.0.4 are not applicable for entering OPERATIONAL CONDITION 5.

TABLE 4.3.6-1

CONTROL ROD BLOCK INSTRUMENTATION SURVEILLANCE REQUIREMENTS

TRIP FUNCTION	CHANNEL CHECK	CHANNEL FUNCTIONAL TEST	CHANNEL CALIBRATION[a]	OPERATIONAL CONDITIONS FOR WHICH SURVEILLANCE REQUIRED
1. ROD PATTERN CONTROL SYSTEM				
a. Low Power Setpoint	NA	S/U[b], M	Q	1, 2
b. High Power Setpoint	NA	S/U[b], M	Q	1**
2. APRM				
a. Flow Biased Neutron Flux-Upscale	NA	W	W[f][g], SA	1
b. Inoperative	NA	S/U,W	NA	1, 2, 5
c. Downscale	NA	W	W[h], SA	1
d. Neutron Flux - Upscale, Startup	NA	S/U[b],M	Q	2, 5
3. SOURCE RANGE MONITORS				
a. Detector not full in	NA	S/U,W	NA	2, 5
b. Upscale	NA	S/U,W	Q	2, 5
c. Inoperative	NA	S/U,W	NA	2, 5
d. Downscale	NA	S/U,W	Q	2, 5
4. INTERMEDIATE RANGE MONITORS				
a. Detector not full in	NA	S/U,W	NA	2, 5
b. Upscale	NA	S/U,W	Q	2, 5
c. Inoperative	NA	S/U,W	NA	2, 5
d. Downscale	NA	S/U,W	Q	2, 5
5. SCRAM DISCHARGE VOLUME				
a. Water Level-High	NA	M	R	1, 2, 5*
6. REACTOR COOLANT SYSTEM RECIRCULATION FLOW				
a. Upscale	NA	M	Q	1
7. REACTOR MODE SWITCH SHUTDOWN POSITION	NA	R	NA	3, 4

TABLE 4.3.6-1 (Continued)

CONTROL ROD BLOCK INSTRUMENTATION SURVEILLANCE REQUIREMENTS

NOTES:

a. Neutron detectors may be excluded from CHANNEL CALIBRATION.

b. Within 7 days prior to startup.

c. [Deleted]

d. [Deleted]

e. [Deleted]

f. This calibration shall consist of the adjustment of the APRM channel to conform to the power values calculated by a heat balance during OPERATIONAL CONDITION 1 when THERMAL POWER is greater than or equal to 25% of RATED THERMAL POWER. Adjust the APRM channel if the absolute difference is greater than 2% of RATED THERMAL POWER.

g. This calibration shall consist of the adjustment of the APRM flow biased channel to conform to a calibrated flow signal.

h. This calibration shall consist of verifying the trip setpoint only.

* With any control rod withdrawn. Not applicable to control rods removed per Specification 3.9.10.1 or 3.9.10.2.

** With THERMAL POWER greater than the Low Power Setpoint.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 49 TO FACILITY OPERATING LICENSE NO. NPF-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 June 21, 1988, System Energy Resources, Inc. (the licensee), requested an amendment to Facility Operating License No. NPF-29 for the Grand Gulf Nuclear Station, Unit 1. The proposed amendment would change the Technical Specification (TS) by modifying Table 4.3.6-1, "Control Rod Block Instrumentation Surveillance Requirements," and associated notes to Table 4.3.6-1 to delete the requirement for daily channel functional tests of the rod pattern control system setpoints during power operation. Additionally, the applicable operational conditions for the high power setpoint in Table 3.3.6-1, "Control Rod Block Instrumentation," and Table 4.3.6-1 would be changed from Operational Condition 1 (power operation) and 2 (startup) to Operational Condition 1 with thermal power greater than the low power setpoint. The licensee requested these changes to reduce manpower required for surveillance tests and to reduce control room distractions associated with these tests. The same TS changes were approved on May 10, 1988 for the River Bend Station, Unit 1, a BWR-6 reactor like Grand Gulf Nuclear Station, Unit 1.

The purpose of these surveillance requirements is to demonstrate the operability of the low power setpoint (LPSP) and the high power setpoint (HPSP) of the rod pattern control system (RPCS). The LPSP initiates RPCS interlocks below 20% power and rod withdrawal limiter (RWL) interlocks above 20% power. The function of the RPCS is to limit the individual rod worths to ensure the peak enthalpy of 280 cal/g will not be exceeded in the event of a control rod drop accident. As shown by analysis, this is not a concern at reactor power greater than 20% power; and, therefore, the RPCS does not place any pattern restrictions on control rod movement above the LPSP. The purpose of the RWL is to prevent fuel damage in the event of erroneous rod withdrawal from locations of high power density during power operation above the LPSP. The HPSP provides the RWL with an interlock to enforce limitations on control rod motion at greater than 70% power. For the range of power level from the LPSP to the HPSP, rod

motion is limited to two feet; and above the HPSP, rod motion is limited to one foot. The RPCS is demonstrated operable by verifying that the rod pattern controller functions when thermal power is less than the LPSP by selecting and attempting to move an inhibited control rod. The RPCS is also demonstrated operable by verifying that the RWL functions when thermal power is greater than or equal to the LPSP by selecting and attempting to move a restricted control rod in excess of the allowable distance.

The Technical Specifications presently require the channel function test to be performed within 24 hours prior to control rod movement and daily as power is increased above the LPSP and HPSP or decreased below the HPSP. Another channel functional test is performed prior to startup and a third is required at least once per 31 days while operation continues above the LPSP. The proposed TS changes would delete the daily tests while retaining the test prior to startup and the monthly tests.

2.0 EVALUATION

The licensee's June 21, 1988 letter requesting deletion of the requirement for daily functional tests of the LPSP and the HPSP for the rod control system provided the following information in support of the proposed changes.

1. These functional tests are performed on the LPSP and HPSP Rosemount trip units identical to trip units located throughout the plant which receive channel function tests monthly per their applicable Technical Specification surveillance requirements. These LPSP and HPSP trip units are subjected to a 30 fold increase in surveillance test frequency as compared to identical trip units in, for instance, the reactor protection system (Technical Specification 3.4.3.1) without an identified corresponding increase in reliability.

2. The channel functional tests performed since commercial operation, approximately 735 for each channel (greater than 2900 total tests), were reviewed with no identified as-found setpoints exceeding Technical Specification limits. Additionally, as-found trip setpoints were reviewed for drift and were found to show negligible drift over a three month period between channel calibrations. This performance data confirms the reliability of these trip units and supports the change to their functional testing frequency of once per 31 days.

3. Since the HPSP is not required to function until 70% power, it is appropriate to change the HPSP applicability to Operational Condition 1 with thermal power greater than the LPSP (20%). With these changes, the HPSP surveillance tests will have to be current prior to operation at or above the HPSP.

The NRC staff has reviewed the licensee's submittal. Because of the demonstrated reliability of the Rosemount trip units used in the rod pattern control system, and the negligible drift of the setpoints during a three month period, the staff concludes that deletion of the daily channel functional tests of the low power setpoints (LPSP) and of the high power setpoints (HPSP) will not adversely affect the safety of the plant and, therefore, is acceptable. Because the HPSP is not required to function at power levels below the HPSP (70%), the change of its operational condition applicability to power levels greater than the LPSP (20%) eliminates a requirement that serves no purpose and is acceptable.

3.0 ENVIRONMENTAL CONSIDERATION

This amendment changes a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes to the surveillance requirements. The staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released off site; and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that this amendment involves no significant hazards consideration and there has been no public comment on such finding. Accordingly, this amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of this amendment.

4.0 CONCLUSION

The Commission made a proposed determination that this amendment involves no significant hazards consideration, which was published in the Federal Register (53 FR 30137) on August 10, 1988, and consulted with the State of Mississippi. No public comments or requests for hearing were received, and the State of Mississippi did not have any comments.

The staff has concluded, based on the considerations discussed above, that: (1) there is 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 the security, or to the health and safety of the public.

Principal Contributor: Lester L. Kintner, Project Directorate II-1

Dated: November 14, 1988