

May 26, 1992

Docket No. 50-416

Mr. William T. Cottle  
Vice President, Operations GGNS  
Entergy Operations, Inc.  
Post Office Box 756  
Port Gibson, Mississippi 39150

Dear Mr. Cottle:

SUBJECT: ISSUANCE OF AMENDMENT NO. 98 TO FACILITY OPERATING LICENSE  
NO. NPF-29 - GRAND GULF NUCLEAR STATION, UNIT 1 (TAC NO. M81708)

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 98 to Facility Operating License No. NPF-29 for the Grand Gulf Nuclear Station, Unit 1. This amendment revises the Technical Specifications (TS) in response to your application dated September 11, 1991.

The amendment modified Table 3.3.4.1-2 of the Grand Gulf Nuclear Station TS to increase the Trip Setpoint and Allowable Value for the Anticipated Transient Without Scram (ATWS) Recirculation Pump Trip System from 1095 psig to 1126 psig and from 1102 psig to 1139 psig, respectively.

A copy of our related Safety Evaluation is also enclosed. A Notice of Issuance will be included in the Commission's next biweekly Federal Register notice.

Sincerely,

Original signed by:  
Paul W. O'Connor, Senior Project Manager  
Project Directorate IV-1  
Division of Reactor Projects - III/IV/V  
Office of Nuclear Reactor Regulation

Enclosures:

- 1. Amendment No. 98 to NPF-29
- 2. Safety Evaluation

cc w/enclosures:  
See next page

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OFC	LA:PD4-1	PM:PD4-1 <i>Paul</i>	OGC <i>M. Virgilio</i>	D:PD4-1
NAME	<i>S. Little/v</i>	PO'Connor	<i>M. Sykes</i>	JLarkins
DATE	5/13/92	5/13/92	5/20/92	5/21/92

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OFC	LA:PD4-1	PM:PD4-1	OGC	D:PD4-1
NAME	SLittle/v	PO'Connor	M/O'Connor	JLarkins
DATE	5/13/92	5/13/92	5/20/92	5/21/92

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

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Sincerely,

A handwritten signature in cursive script that reads "Paul W. O'Connor".

Paul W. O'Connor, Senior Project Manager  
Project Directorate IV-1  
Division of Reactor Projects - III/IV/V  
Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No. 98 to NPF-29
2. Safety Evaluation

cc w/enclosures:  
See next page

Mr. W. T. Cottle  
Grand Gulf Nuclear Station

Entergy Operations, Inc.

cc:

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State of Mississippi  
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Mr. Johnny Mathis  
Senior Resident Inspector  
U.S. Nuclear Regulatory Commission



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

ENERGY OPERATIONS, INC.

SYSTEM ENERGY RESOURCES, INC.

SOUTH MISSISSIPPI ELECTRIC POWER ASSOCIATION

MISSISSIPPI POWER AND LIGHT COMPANY

DOCKET NO. 50-416

GRAND GULF NUCLEAR STATION, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 98  
License No. NPF-29

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Entergy Operations, Inc. (the licensee) dated September 11, 1991, 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. 98, are hereby incorporated into this license. Entergy Operations, 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



John T. Larkins, Director  
Project Directorate IV-1  
Division of Reactor Projects - III/IV/V  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the  
Technical Specifications

Date of Issuance: May 26, 1992

ATTACHMENT TO LICENSE AMENDMENT NO. 98

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. The corresponding overleaf pages are also provided to maintain document completeness.

REMOVE PAGES

3/4 3-39

INSERT PAGES

3/4 3-39

TABLE 3.3.4.1-2

ATWS RECIRCULATION PUMP TRIP SYSTEM INSTRUMENTATION SETPOINTS

<u>TRIP FUNCTION</u>	<u>TRIP SETPOINT</u>	<u>ALLOWABLE VALUE</u>
1. Reactor Vessel Water Level - Low Low, Level 2	$\geq -41.6$ inches*	$\geq -43.8$ inches
2. Reactor Vessel Pressure - High	$\leq 1126$ psig	$\leq 1139$ psig

\*See Bases Figure B3/4 3-1.

INSTRUMENTATION

TABLE 4.3.4.1-1

ATWS RECIRCULATION PUMP TRIP ACTUATION INSTRUMENTATION  
SURVEILLANCE REQUIREMENTS

<u>TRIP FUNCTION</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL FUNCTIONAL TEST</u>	<u>CHANNEL CALIBRATION</u>
1. Reactor Vessel Water Level - Low Low, Level 2	S	M	R*
2. Reactor Vessel Pressure - High	S	M	R*

\*Calibrate trip unit at least once per 31 days.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 98 TO FACILITY OPERATING LICENSE NO. NPF-29

ENERGY OPERATIONS, INC., ET AL.

GRAND GULF NUCLEAR STATION, UNIT 1

DOCKET NO. 50-416

1.0 INTRODUCTION

By letter dated September 11, 1991, the licensee (Entergy Operations, Inc.), submitted a request for changes to the Grand Gulf Nuclear Station, Unit 1 (GGNS) Technical Specifications (TS). The requested changes would revise the high reactor pressure trip setpoint for the ATWS Recirculation Pump Trip (RPT) from 1095 psig to 1126 psig. This change was requested in response to two events that occurred at GGNS involving RPT actuations during non-ATWS plant transients. When the recirculation pumps are tripped during an anticipated pressurization transient with scram, there is the potential for thermal stratification problems caused by reduced coolant mixing, including violation of the 100° F per hour cooldown rate TS limit. The proposed TS change should reduce the likelihood of unnecessary RPT actuations and help alleviate the associated operational problems.

2.0 EVALUATION

The ATWS RPT is designed to mitigate the consequences of an ATWS event, in conjunction with the Alternate Rod Insertion (ARI) system, by providing an alternate means of reducing reactor power. This is accomplished by tripping the recirculation pumps to zero speed, thus causing a rapid reduction in core flow, and a reduction in core power. The ATWS instrumentation initiates the RPT on two signals, high reactor pressure and low reactor water level, both indicative of continued energy generation in the reactor following a failure to scram.

The high reactor pressure setpoint should initiate RPT at a pressure higher than the setpoint for the Reactor Protection System (RPS) scram on high reactor pressure. However, the setpoint for RPT must be low enough to mitigate an ATWS event without exceeding the ATWS limits that protect the fuel, vessel, and containment from damage. Another factor in determining the pressure setpoint is the relationship of the ATWS RPT pressure setpoint to the setpoint of the Safety Relief Valves (SRVs). The recirculation pumps may be

tripped spuriously during an anticipated pressure transient with scram if the ATWS RPT initiation is not set above the vessel pressure expected to result from the event with pressure control provided by the automatic bypass valves or the SRVs. A spurious RPT can result in thermal stratification problems in the reactor vessel. This has occurred twice recently at GGNS, both times resulting in a cooldown rate, as measured at the vessel bottom drain, in excess of the 100° F per hour TS heatup/cooldown rate limit.

GGNS has performed a plant specific ATWS analysis to support increasing the ATWS RPT high reactor pressure setpoint. The calculation was performed using the same methodology as previous GGNS ATWS analyses, employing the REDY and STEMP computer codes. The possible initial power/flow conditions were evaluated by the licensee. They determined that the most limiting initial condition for the ATWS event is the GGNS Maximum Extended Operating Domain (MEOD) control rod line "knee point", corresponding to 100% power and 75% core flow on the power to flow map. The events that were specifically analyzed are the Turbine Trip and the Main Steam Isolation Valve (MSIV) Closure. The analyses demonstrated that the proposed trip setpoint of 1126 psig is adequate to mitigate the event without exceeding the ATWS limits that protect the plant radiological release barriers, i.e., peak suppression pool temperature of less than 185° F and peak RPV pressure less than 1500 psig (Service Level C) at the bottom of the RPV. The analyses were performed using approved methods, and the results are acceptable.

The following TS change has been proposed for GGNS:

Table 3.3.4.1-2, "ATWS Recirculation Pump Trip System Instrumentation setpoints," Item 2, Reactor Vessel Pressure - High Trip Setpoint and allowable value. Change Trip Setpoint from 1095 psig to 1126 psig, and change Allowable Value from 1102 psig to 1139 psig.

Based on the staff evaluation in Section 2.0 above, the staff concludes that the proposed TS concerning the ATWS RPT setpoints are acceptable.

### 3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Mississippi State official was notified of the proposed issuance of the amendment. The State official had no comments.

### 4.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes in surveillance requirements. The NRC 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 offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration, and there has been no public comment on such finding (56 FR 51925). Accordingly, the 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 the amendment.

#### 5.0 CONCLUSION

The Commission 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, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: A. Cabbage

Date: May 26, 1992