October 27, 2003

Mr. Jeff S. Forbes
Vice President, Operations GGNS
Entergy Operations, Inc.
P. O. Box 756
Port Gibson, MS 39150

SUBJECT: GRAND GULF NUCLEAR STATION, UNIT 1 - ISSUANCE OF AMENDMENT RE: REMOVAL OF MODE RESTRICTIONS FOR SURVEILLANCE TESTING OF THE DIVISION 3 BATTERY (TAC NO. MB8938)

Dear Mr. Forbes:

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 159 to Facility Operating License No. NPF-29 for the Grand Gulf Nuclear Station, Unit 1. This amendment revises the Technical Specifications in response to your application dated May 12, 2003, as supplemented by letter dated August 7, 2003.

The amendment removes the MODE restrictions for performance of Surveillance Requirements 3.8.4.7 and 3.8.4.8 for the Division 3 direct current electrical power subsystem to allow performance of the surveillance testing of Division 3 Battery, during normal plant operation in conjunction with a planned High Pressure Core Spray system outage rather than only during refueling outages.

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

Sincerely,

/RA/

Bhalchandra Vaidya, Project Manager, Section 1
Project Directorate IV
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-416

Enclosures: 1. Amendment No. 159 to NPF-29
2. Safety Evaluation

cc w/encls: See next page

October 27, 2003

Mr. Jeff S. Forbes
Vice President, Operations GGNS
Entergy Operations, Inc.
P. O. Box 756
Port Gibson, MS 39150

SUBJECT: GRAND GULF NUCLEAR STATION, UNIT 1 - ISSUANCE OF AMENDMENT RE: REMOVAL OF MODE RESTRICTIONS FOR SURVEILLANCE TESTING OF THE DIVISION 3 BATTERY (TAC NO. MB8938)

Dear Mr. Forbes:

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 159 to Facility Operating License No. NPF-29 for the Grand Gulf Nuclear Station, Unit 1. This amendment revises the Technical Specifications in response to your application dated May 12, 2003, as supplemented by letter dated August 7, 2003.

The amendment removes the MODE restrictions for performance of Surveillance Requirements 3.8.4.7 and 3.8.4.8 for the Division 3 direct current electrical power subsystem to allow performance of the surveillance testing of Division 3 Battery, during normal plant operation in conjunction with a planned High Pressure Core Spray system outage rather than only during refueling outages.

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

Sincerely,
/RA/
Bhalchandra Vaidya, Project Manager, Section 1
Project Directorate IV
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-416

Enclosures:
1. Amendment No. 159 to NPF-29
2. Safety Evaluation

cc w/encls: See next page

DISTRIBUTION:
PUBLIC
PDIV-1 Reading
RidsNrrDlpmPdiv (HBerkow)
RidsNrrDlpmPdivLpdiv1 (RGramm)
RidsNrrPMBVaidya
RidsAcrsAcnwMailCenter
TBoyce
SSaba
RidsRgn4MailCenter (AHowell)
RidsNrrLADJohnson
RidsOgcRp
GHill (2)

** No legal objection
*No significant change from SE Input

Accession No.:

OFFICE	PDIV-1/PM	PDIV-1/LA	EEIB-B/SC*	IROB-A/SC	OGC**	PDIV-1/SC
NAME	BVaidya	DJohnson	RVJenkins	TBoyce	LCZaccari	RGramm
DATE	10/3/03	10/3/03	8-29-2003	10/3/03	10/15/03	10/24/03

OFFICIAL RECORD COPY

ENTERGY OPERATIONS, INC.

SYSTEM ENERGY RESOURCES, INC.

SOUTH MISSISSIPPI ELECTRIC POWER ASSOCIATION

ENTERGY MISSISSIPPI, INC.

DOCKET NO. 50-416

GRAND GULF NUCLEAR STATION, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 159
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 May 12, 2003, as supplemented by letter dated August 7, 2003, 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. 159, 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 and shall be implemented within 60 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Robert A. Gramm, Chief, Section 1
Project Directorate IV
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical Specifications

Date of Issuance: October 27, 2003

ATTACHMENT TO LICENSE AMENDMENT NO. 159

FACILITY OPERATING LICENSE NO. NPF-29

DOCKET NO. 50-416

Replace the following pages of the Appendix A Technical Specifications with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Remove	Insert
3.8-29	3.8-29
3.8-30	3.8-30

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 159 TO

FACILITY OPERATING LICENSE NO. NPF-29

ENTERGY OPERATIONS, INC., ET AL.

GRAND GULF NUCLEAR STATION, UNIT 1

DOCKET NO. 50-416

1.0 INTRODUCTION

By application dated May 12, 2003, as supplemented by letter dated August 7, 2003, Entergy Operations, Inc., et al. (Entergy or the licensee), requested changes to the Technical Specifications (TSs) for Grand Gulf Nuclear Station, Unit 1 (GGNS). The supplemental letter dated August 7, 2003, provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the staff's original proposed no significant hazards consideration determination as published in the Federal Register on June 10, 2003 (68 FR 34665).

The proposed changes would remove the MODE restrictions for performance of Surveillance Requirement (SR) 3.8.4.7 and SR 3.8.4.8 for the Division 3 direct current (DC) electrical power subsystem. The batteries tested by these surveillance tests are part of the DC power source of control and motive power as required, for the High Pressure Core Spray (HPCS) system logic, HPCS diesel generator (DG) set control and protection, and all Division 3 related controls. These surveillance tests verify that the battery capacity is adequate to perform their required functions. The purpose of the proposed changes is to allow performance of the surveillance tests during normal plant operation in conjunction with a planned HPCS system outage rather than only during refueling outages. This will help reduce the complexity of activities and resource requirements during refueling outages.

Specifically, the proposed changes would revise NOTE 2 for SR 3.8.4.7 and the NOTE for SR 3.8.4.8, that currently read "This Surveillance shall not be performed in MODE 1, 2, or 3. However, credit may be taken for unplanned events that satisfy this SR." The NOTE for each of these SRs will be revised to state "This Surveillance shall not be performed in MODE 1, 2, or 3 (not applicable to Division 3). However, credit may be taken for unplanned events that satisfy this SR."

2.0 REGULATORY EVALUATION

The Nuclear Regulatory Commission (NRC) staff finds that the licensee in Attachment 1, Section 5 of its submittal identified the applicable regulatory requirements. The regulatory requirements for which the staff based its acceptance are:

1) General Design Criterion (GDC)-17, "Electric power systems," of Appendix A, "General Design Criteria for Nuclear Power Plants," to Part 50 of Title 10 of the *Code of Federal Regulations* (10 CFR Part 50), which requires, in part, that nuclear power plants have onsite and offsite electric power systems to permit the functioning of structures, systems, and components that are important to safety. The onsite system is required to have sufficient independence, redundancy, and testability to perform its safety function, assuming a single failure. The offsite power system is required to supply power through two physically independent circuits that are designed and located so as to minimize, to the extent practical, the likelihood of their simultaneous failure under operating and postulated accident and environmental conditions. In addition, this criterion requires provisions to minimize the probability of losing electric power from the remaining electric power supplies as a result of loss of power from the unit, the offsite transmission network, or the onsite power supplies.

2) GDC-18, “Inspection and testing of electric power systems,” which requires that electric power systems that are important to safety, be designed to permit appropriate periodic inspection and testing. In accordance with 10 CFR 50.36, “Technical specifications,” the licensees are required to establish TS Limiting Conditions for Operation (LCOs), which include Allowed Outage Times for equipment that is required for safe operation of the facility.

3) The maintenance rule in 10 CFR 50.65(a)(4), “Requirements for monitoring the effectiveness of maintenance at nuclear power plants,” which requires that a licensee assess and manage the increase in risk that may result from proposed maintenance activities.

4) 10 CFR 50.90, "Application for amendment of license or construction permit," 10 CFR 50.91, "Notice for public comment; State consultation," and 10 CFR 50.92, "Issuance of amendment," establish the requirements for amendments to the operating license and no significant hazards consideration determination.

5) NRC Regulatory Guide (RG) 1.129, April 1977 edition "Maintenance, Testing, and Replacement of Large Lead Storage Batteries for Nuclear Power Plants."

3.0 TECHNICAL EVALUATION

The NRC staff has reviewed the licensee's regulatory and technical analyses, in support of its proposed license amendment, which are described in Attachment 1, Sections 3 and 5 of the licensee's submittal. The detailed evaluation below will support the conclusion 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.

3.1 Description of Structures, Systems, and Components

GGNS TS 3.8.4 "DC Sources - Operating," specifies the requirements for the Engineered Safety Feature (ESF) DC electrical power subsystems. The DC electrical power subsystems are required to be OPERABLE to ensure the availability of the required power to shut down the

reactor and maintain it in a safe condition after an Anticipated Operational Occurrence or a postulated design basis accident. The DC power system provides the alternating current emergency power system with control power and both motive and control power to selected safety-related equipment.

The 125 Volt (V) DC electrical power system of GGNS consists of three independent Class 1E DC electrical power subsystems (Divisions 1, 2, and 3). Each subsystem consists of a battery, associated battery charger(s), and all the associated control equipment and interconnecting cabling. The DC electrical power system is designed to have sufficient independence, redundancy, and testability to perform its safety functions, assuming a single failure.

The Division 3 125V DC power system function is to provide a reliable, continuous, and independent 125V DC power source of control and motive power as required for the HPCS system logic, HPCS DG set control and protection, and all Division 3-related controls. The Division 3 125V DC system is independent of all other divisional batteries and there is no manual or automatic connection to any other battery.

The Division 3 DC power source is required for HPCS DG field flashing, control logic, and control and switching function of 4.16 kiloVolt breakers. The ESF divisional batteries are required by TS SRs 3.8.4.7 and 3.8.4.8 to be service tested and performance discharge tested periodically. However, as currently stated, there is a NOTE in SR 3.8.4.7 and SR 3.8.4.8 stating that “This surveillance shall not be performed in MODE 1, 2, or 3."

The required surveillance frequency for the battery service test is every 18 months. The frequency for the performance discharge test is normally 60 months. If the battery shows degradation, or if the battery has reached 85 percent (%) of its expected life and capacity is less than 100% of the manufacturer's rating, the surveillance frequency is reduced to 12 months. However, if the battery shows no degradation but has reached 85% of its expected life, the surveillance frequency is only reduced to 24 months for batteries that retain capacity of at least 100% of the manufacturer's rating. Degradation is indicated when the battery capacity drops by more than 10% of rated capacity from its average on previous performance tests, or is below 90% of the manufacturer's rating.

RG 1.129 states that “The battery service test should be done during refueling operations or at some other outage.” The proposed amendment request will allow the battery tests for the Division 3 battery to be performed when the plant is on-line.

3.2 Evaluation

The present TS of the Division 3 HPCS DG and HPCS system allows their removal from service to perform scheduled maintenance while in MODE 1, 2, or 3. The requested TS change is to allow the battery tests to be performed in conjunction with the scheduled HPCS system outages.

Entergy proposes to modify NOTE 2 for SR 3.8.4.7 and the NOTE for SR 3.8.4.8 that currently read:

> “This surveillance shall not be performed in MODE 1, 2, or 3. However, credit may be taken for unplanned events that satisfy this SR.”

to read:

> "This surveillance shall not be performed in MODE 1, 2, or 3 (not applicable to Division 3). However, credit may be taken for unplanned events that satisfy this SR."

This will allow removal of the MODE restriction on Division 3 DC electrical power subsystem batteries to allow SR performance during plant operation.

The licensee stated that "Currently, the Division 3 HPCS DG and HPCS system are removed from service to perform scheduled maintenance while in MODE 1, 2, or 3 as allowed by the TS [for certain SRs in TS 3.8.1]." The GGNS TS 3.5.1 allows HPCS to be INOPERABLE for up to 14 days if the Reactor Core Isolation Cooling system is OPERABLE. This proposed TS change would allow the battery tests to be performed in conjunction with these scheduled system outages. The time needed to perform the battery SRs is approximately 24 hours. This testing period is within the period of time that the system is scheduled to be out of service for other planned maintenance. The NRC staff has determined that this is ample time for the performance of the battery SRs. Therefore, the battery test does not increase unavailability of the supported system or represent any changes in risk above the current practice of planned system maintenance outages as currently allowed by the TS.

Regarding risk management, the testing of the Division 3 batteries will be enveloped by the risk management of the system outage. Risk management of the system outage is addressed in several ways. In addition to TS LCO limitations, the Safety Function Determination Program of TS 5.5.10 is required to protect against a loss of safety function. Further, the GGNS approach to performing maintenance uses a protected Division concept. This means that, without special considerations, work is performed on only one Division at a time.

GGNS has a Configuration Risk Management Program in place in compliance with 10 CFR 50.65 (the Maintenance Rule) to provide assurance that risk-significant plant equipment configuration are precluded or minimized when plant equipment is removed from service. Additionally, the HPCS system reliability and availability are monitored and evaluated in relationship to Maintenance Rule goals to ensure that total outage times do not degrade operational safety over time.

In the supplemental letter dated August 7, 2003, Entergy agreed to revise the TS Bases definition of battery degradation from:

> "Degradation is indicated when the battery capacity drops by more than 10% of rated capacity from its average of previous performance tests or is below 90% of the manufacturer's rating"

to :

> "Degradation is indicated when the battery capacity drops by more than 10% of rated capacity relative to its capacity on the previous performance test or is below 90% of the manufacturer's rating."

The revised definition of "degradation" is taken from Institute of Electrical and Electronics Engineers (IEEE) Standard 450, "IEEE Recommended Practice for Maintenance, Testing, and Replacement of Vented Lead-Acid Batteries for Stationary Applications." Earlier editions of the IEEE standard had defined degradation in relation to a change in capacity from the average of

previous tests. However, newer editions of the standard define degradation in relation to the change in capacity from only the previous performance test. The staff finds the change in definition for degradation acceptable.

In addition, the licensee has made the regulatory commitment that the Division 3 battery service test required by SR 3.8.4.7 and the Division 3 battery performance discharge test required by SR 3.8.4.8 may only be performed in MODE 1, 2, and 3 in conjunction with HPCS system outage or for unplanned events. The proposed changes do not affect the current licensing requirements, and the DC electrical power system is in compliance with the current licensing requirements and GDC 17.

Based on the above discussion, the NRC staff finds that the proposed changes to the TSs associated with the Division 3 DC electrical power system are acceptable.

4.0 LIST OF REGULATORY COMMITMENTS

The licensee, in its application, as well as the supplemental submission, included regulatory commitments. The commitments are listed in the following table.

List of Regulatory Commitment

COMMITMENT	TYPE (Check one)		SCHEDULED COMPLETION DATE (If Required)
	ONE-TIME ACTION	CONTINUING COMPLIANCE	
1. The Division 3 battery service test required by SR 3.8.4.7 and the Division 3 battery performance discharge test required by SR 3.8.4.8 may only be performed in MODES 1, 2, and 3 in conjunction with a HPCS system outage or for unplanned events.		X	Within 60 days of amendment issuance
2. Entergy agreed to revise the TS Bases for SR 3.8.4.8 such that future performance tests will compare battery capacity with the previous performance test rather than the average of the previous performance tests.	X		Within 60 days of amendment issuance

The NRC staff finds that reasonable controls for the implementation and for subsequent evaluation of proposed changes pertaining to the above regulatory commitments are best provided by the licensee's administrative processes, including its commitment management

program. The above regulatory commitments do not warrant the creation of regulatory requirements (items requiring prior NRC approval of subsequent changes).

5.0 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.

6.0 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. The NRC staff has determined that the amendments involve 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 amendments involve no significant hazards consideration, and there has been no public comment on such finding (68 FR 34665). Accordingly, the amendments meet 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 amendments.

7.0 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 amendments will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: Saba Saba

Date: October 27, 2003

cc:

Executive Vice President
& Chief Operating Officer
Entergy Operations, Inc.
P. O. Box 31995
Jackson, MS 39286-1995

Wise, Carter, Child & Caraway
P. O. Box 651
Jackson, MS 39205

Winston & Strawn
1400 L Street, N.W. - 12th Floor
Washington, DC 20005-3502

Chief
Energy and Transportation Branch
Environmental Compliance and
Enforcement Division
Mississippi Department of Environmental
Quality
P. O. Box 10385
Jackson, MS 39289-0385

President
Claiborne County
Board of Supervisors
P. O. Box 339
Port Gibson, MS 39150

Regional Administrator, Region IV
U.S. Nuclear Regulatory Commission
611 Ryan Plaza Drive, Suite 1000
Arlington, TX 76011

Senior Resident Inspector
U. S. Nuclear Regulatory Commission
P. O. Box 399
Port Gibson, MS 39150

General Manager, GGNS
Entergy Operations, Inc.
P. O. Box 756
Port Gibson, MS 39150

Attorney General
Department of Justice
State of Louisiana
P. O. Box 94005
Baton Rouge, LA 70804-9005

State Health Officer
State Board of Health
P. O. Box 1700
Jackson, MS 39205

Office of the Governor
State of Mississippi
Jackson, MS 39201

Attorney General
Asst. Attorney General
State of Mississippi
P. O. Box 22947
Jackson, MS 39225

Vice President, Operations Support
Entergy Operations, Inc.
P.O. Box 31995
Jackson, MS 39286-1995

Director
Nuclear Safety Assurance
Entergy Operations, Inc.
P. O. Box 756
Port Gibson, MS 39150