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September 27, 2001

SUBJECT: RIVER BEND STATION, UNIT 1 - ISSUANCE OF AMENDMENT RE:
SURVEILLANCE REQUIREMENTS FOR DIESEL GENERATOR SLOW START
SEQUENCE (TAC NO. MB1117)

Dear Mr. Edington:

The Commission has issued the enclosed Amendment No. 121 to Facility Operating License No. NPF-47 for the River Bend Station, Unit 1. The amendment consists of changes to the Technical Specifications (TSs) in response to your application dated January 24, 2001, as supplemented by letter dated September 24, 2001.

The amendment revises the TSs to incorporate the provisions to perform routine diesel generator (DG) monthly testing by gradually accelerating the DG to operating speed. In addition, a new TS is added to require fast starts of the DGs on a 184-day frequency.

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

Sincerely,

/RA/

Robert E. Moody, Project Manager, Section 1
Project Directorate IV
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-458

Enclosures: 1. Amendment No. 121 to NPF-47
2. Safety Evaluation

cc w/encls: See next page

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**See previous concurrence
 *no substantive change from SE input

Accession No.: ML012740223

OFFICE	PDIV-1/PM	PDIV-1/LA	PDIV-1/PM	EEIB/SC	OGC	PDIV-1/SC
NAME	TAlexion	DJohnson	RMoody	CHolden	RWeisman	RGramm
DATE	07/31/01**	09/25/01	09/25/01	07/26/01*	08/13/01**	09/26/01

OFFICIAL RECORD COPY

ENERGY GULF STATES, INC. **

AND

ENERGY OPERATIONS, INC.

DOCKET NO. 50-458

RIVER BEND STATION, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 121
License No. NPF-47

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Entergy Gulf States, Inc.* (the licensee) dated January 24, 2001, as supplemented by letter dated September 24, 2001, 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, as amended, 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 license amendment will not be inimical to the common defense and security or to the health and safety of the public; and

* Entergy Operations, Inc. is authorized to act as agent for Entergy Gulf States, Inc, and has exclusive responsibility and control over the physical construction, operation and maintenance of the facility.

**Entergy Gulf States, Inc., has merged with a wholly owned subsidiary of Entergy Corporation. Entergy Gulf States, Inc. was the surviving company in the merger.

- 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-47 is hereby amended to read as follows:
- (2) Technical Specifications and Environmental Protection Plan
- The Technical Specifications contained in Appendix A, as revised through Amendment No. 121 and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the license. EOI shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.
3. The license amendment is effective as of its date of issuance and shall be implemented within 120 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: September 27, 2001

ATTACHMENT TO LICENSE AMENDMENT NO. 121

FACILITY OPERATING LICENSE NO. NPF-47

DOCKET NO. 50-458

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.

<u>Remove</u>	<u>Insert</u>
3.8-5	3.8-5
3.8-6	3.8-6
3.8-7	3.8-7
3.8-8	3.8-8
3.8-9	3.8-9
3.8-10	3.8-10
3.8-11	3.8-11
3.8-12	3.8-12
3.8-13	3.8-13
3.8-14	3.8-14
3.8-15	3.8-15
3.8-20	3.8-20

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 121 TO FACILITY OPERATING LICENSE NO. NPF-47

ENTERGY OPERATIONS, INC.

RIVER BEND STATION, UNIT 1

DOCKET NO. 50-458

1.0 INTRODUCTION

By application dated January 24, 2001, as supplemented by letter dated September 24, 2001, Entergy Operations, Inc. (the licensee) requested changes to the Technical Specifications (TSs) (Appendix A to Facility Operating License No. NPF-47) for the River Bend Station, Unit 1 (RBS). The proposed changes would revise the TSs to incorporate the provisions to perform routine diesel generator (DG) monthly testing by gradually accelerating the DG to operating speed, as opposed to requiring the DG to attain rated voltage and frequency within 10 seconds for DG 1A and DG 1B, and within 13 seconds for DG 1C. In addition, a new TS would be added to require fast starts of the DGs on a 184-day frequency.

The supplemental letter dated September 24, 2001, provided additional information that did not expand the scope of the NRC staff's initial proposed no significant hazards consideration determination (66 FR 13801, published March 7, 2001).

2.0 BACKGROUND

The proposed changes will revise the surveillance requirements (SRs) for TS Limiting Conditions for Operation (LCOs) 3.8.1 and 3.8.2, and add a new SR to TS 3.8.1 to incorporate provisions to perform routine DG monthly testing by gradually accelerating the DG to operating voltage and frequency, rather than by requiring the DG to attain rated voltage and frequency within 10 (or 13) seconds. The purpose of the proposed change is to reduce the effects of aging on the DGs due to the fast starting and fast loading required by the current TSs. The proposed changes are based on NUREG-1434, "Standard Technical Specifications General Electric Plants, BWR/6," and Generic Letter (GL) 84-15, "Proposed Staff Actions To Improve and Maintain Diesel Generator Reliability."

The TS SRs, which require verification of a fast start every 18 months, are not affected by the proposed changes. The licensee is adding a new SR 3.8.1.7 to test the fast start of the DGs at 184-day intervals. Therefore, the ability of the DGs at RBS to achieve the start times assumed in the accident analyses will continue to be periodically verified.

3.0 DISCUSSION

At RBS, three Class 1E emergency safety buses supply electrical power to three divisional load groups. The onsite electrical power to the three Class 1E emergency safety buses is supplied from three dedicated onsite DGs (DG 1A, DG 1B, and DG 1C). DGs 1A and 1B are required to

start, accelerate to rated voltage and frequency, and connect to their Class 1E emergency safety buses within 10 seconds. Similarly, DG 1C is required to start, accelerate to rated voltage and frequency, and connect to its Class 1E emergency safety bus within 13 seconds. The RBS's current SR 3.8.1.2 requires that each DG be tested monthly to demonstrate this capability and assure that the DG can perform its intended safety function. The licensee plans to replace the existing governors for DGs 1A and 1B with a model that will have the capability of accelerating the DG engines to operating speed within 15 to 30 seconds during the monthly testing. A 15-to-30-second start is considered a slow start for the DGs. The licensee has no specific plans at this time for making any changes to DG 1C, which is made by a different manufacturer than DGs 1A and 1B. However, the proposed license amendment will allow slow starting of all three DGs if a DG is provided with slow starting capability. The TS SRs and the accompanying notes in the proposed amendment contain provisions for fast starting if slow starting procedures are not used.

The proposed changes are requested in accordance with Sections 2.101, 50.59, and 50.90 of Title 10 of the *Code of Federal Regulations* (10 CFR) to assure continued compliance with 10 CFR Part 50, Appendix A, General Design Criterion (GDC) 17, "Electric Power Systems," and GDC 18, "Inspection and Testing of Electric Power Systems."

4.0 PROPOSED TS CHANGES

To incorporate the provisions to perform routine DG monthly testing by gradually accelerating (slow starting) the DG to operating voltage and frequency, the licensee proposes the following changes to the SRs for TS LCOs 3.8.1 and 3.8.2:

- 4.1 SR 3.8.1.2 will be revised to eliminate the start time requirements for DGs 1A, 1B, and 1C. The licensee is adding two notes to SR 3.8.1.2. Note 1 will indicate that the performance of new SR 3.8.1.7 satisfies the requirements of revised SR 3.8.1.2. The second, added as Note 3, will clarify that if modified procedures for gradually accelerating the DG are not used, then the start time requirements of new SR 3.8.1.7 apply.
- 4.2 SR 3.8.1.3 will be revised to reflect the addition of new SR 3.8.1.7; that is, SR 3.8.1.2 or SR 3.8.1.7 may be used to start the DG for performing SR 3.8.1.3.
- 4.3 A new SR 3.8.1.7 will be added. New SR 3.8.1.7 is identical to the original SR 3.8.1.2, except that the frequency is 184 days.
- 4.4 Existing SRs 3.8.1.7 through 3.8.1.19 will be renumbered as SRs 3.8.1.8 through 3.8.1.20 to reflect the addition of SR 3.8.1.7.
- 4.5 Editorial changes will be made to SR 3.8.2.1 to reflect the addition of SR 3.8.1.7 and the resultant renumbering of existing SRs 3.8.1.7 through 3.8.1.18 as 3.8.1.8 through 3.8.1.19.

5.0 EVALUATION

The existing TS SRs 3.8.1 and 3.8.2 require routine DG testing from standby conditions by accelerating the DG to operating voltage and frequency (steady state conditions) within 10 (or 13) seconds. This method of testing of the DG is known as "fast start" surveillance testing in the industry. U.S. Nuclear Regulatory Commission (NRC or the Commission)-sponsored aging

research on nuclear grade DGs, documented in NUREG/CR-5057, "Aging Mitigation and Improved Programs for Nuclear Service Diesel Generators," identified fast starting and loading of DGs as an aging stressor. NUREG/CR-5057 states that test programs involving slow starting and loading have little aging effects on DGs. By contrast, fast starting and loading of DGs can produce significant engine stress and wear. The staff concluded that the overall reliability and availability of DGs could be improved by performing DG starts for surveillance testing using engine prelube and other manufacturer recommended procedures to reduce engine stress and wear. The staff also determined that the demonstration of fast start capability of DGs from standby conditions could not be totally eliminated because the design basis for the plant requires such capability. In view of the above, the staff concluded that the frequency of fast start tests from standby conditions of DGs should be decreased from once per 30 days to once per 184 days. The NRC issued GL 84-15 on July 2, 1984, to communicate to the industry the benefits in the reduction in the number of fast start surveillance tests for DGs. GL 84-15 contained provisions for fast DG starts (within 10 seconds) from standby conditions at least once per 184 days. All other DG starts for the purpose of surveillance testing may be performed as slow starts to minimize the stress and wear on the engine. The staff also documented this guidance in paragraph 2.2.1 of Regulatory Guide (RG) 1.9, "Selection, Design, Qualification, and Testing of Emergency Diesel Generator Units Used as Class 1E Onsite Electric Power Systems at Nuclear Power Plants," Revision 3, July 1993, which states that the DG can be slow started for surveillance tests and reach rated speed on a schedule prescribed to minimize stress and wear on the engine.

The three DGs at RBS are designated as DG 1A, DG 1B, and DG 1C. These three DGs are equipped with governors that do not have the capability of slow starting the engines. Therefore, the licensee initially chose not to request to amend the TSs to allow slow starting of the DGs. At this time, the licensee is planning to replace the governors of DG 1A and DG 1B with a model that will accelerate the engines to operating speed within 15 to 30 seconds (slow start) in the test mode. The licensee has no plans to change the governor of DG 1C at this time, but may choose to do so in the future to permit slow starting to reduce the stress and wear on the engine. The governor for DG 1B is scheduled for replacement during the fall 2001 refueling outage and the governor for DG 1A is scheduled to be replaced during the spring 2003 refueling outage. The licensee is seeking the above-listed changes in this amendment for all DGs so that slow start routine monthly testing of DGs can be performed as the governors are replaced. Routine monthly slow start testing of DG 1B will begin in the fall of 2001, and routine monthly slow start testing on DG 1A will begin in the spring of 2003. DG 1C will continue to be fast started during routine monthly testing unless its current design is modified in accordance with 10 CFR 50.59. To demonstrate fast start test capability for DGs from standby conditions (a requirement of the plant design basis), the licensee proposes to add a new SR 3.8.1.7, which will require fast start tests of DGs at 184-day intervals for the DGs that use the slow start capability during routine monthly testing.

- 5.1 The proposed revisions to SR 3.8.1.2 to eliminate the start time requirements for DG 1A, DG 1B, and DG 1C, and add Notes 1 and 3, are in conformance with the guidance of GL 84-15 and RG 1.9, Rev. 3, paragraph 2.2.1. When the DGs are in standby for emergency operation, they will continue to fast start in accordance with their emergency function, which is consistent with NUREG-1434. Further, the fast start capability of the DGs is verified every 184 days by performing new SR 3.8.1.7 to assure that the DGs can perform their intended safety functions. Therefore, this proposed change is acceptable.

- 5.2 The proposed revision to SR 3.8.1.3 to reflect the addition of SR 3.8.1.7 (that is, SR 3.8.1.2 or SR 3.8.1.7 may be used to start the DG for performing SR 3.8.1.3) is acceptable. This surveillance requires the DGs to be tested every 31 days, which remains unchanged.
- 5.3 New SR 3.8.1.7 is identical to the original SR 3.8.1.2, except that the frequency is 184 days. SR 3.8.1.7 includes the start time requirements for DG 1A, DG 1B, and DG 1C that were in the original SR 3.8.1.2 to ensure that the DGs can perform their intended safety functions. Therefore, this change is acceptable.
- 5.4 Existing SRs 3.8.1.7 through 3.8.1.19 are renumbered to SRs 3.8.1.8 through 3.8.1.20 to reflect the addition of SR 3.8.1.7. This is an administrative change and therefore is acceptable.
- 5.5 Editorial changes to SR 3.8.2.1 are made to reflect the addition of SR 3.8.1.7 and the resultant renumbering of existing SRs 3.8.1.7 through 3.8.1.18 as 3.8.1.8 through 3.8.1.19. This is an administrative change and therefore is acceptable.

6.0 EVALUATION SUMMARY

The proposed changes to RBS TS SRs 3.8.1 and 3.8.2 discussed above are in accordance with GL 84-15 and NUREG-1434. Although the changes allow slower starts for the monthly tests, the fast start function assumed in the accident analysis is unchanged and will be verified at 184-day intervals to ensure that the DGs can perform their intended safety function. Therefore, the staff finds acceptable the proposed changes to SRs for TS LCOs 3.8.1 and 3.8.2 and the associated Bases to allow routine DG monthly testing by gradually accelerating the DG to operating voltage and frequency, and verifying the fast start capability of the DGs every 184 days.

7.0 STATE CONSULTATION

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

8.0 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 SRs. 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 (66 FR 13801, dated March 7, 2001). 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.

9.0 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. Gill

Date: September 27, 2001

River Bend Station

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