

January 16, 1997

Mr. John R. McGaha, Jr.
Vice President - Operations
Entergy Operations, Inc.
River Bend Station
P. O. Box 220
St. Francisville, LA 70775

SUBJECT: RIVER BEND STATION, UNIT 1 - AMENDMENT NO. 91 TO FACILITY
OPERATING LICENSE NO. NPF-47 (TAC NO. M95554)

Dear Mr. McGaha:

The Commission has issued the enclosed Amendment No. 91 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 May 30, 1996.

The amendment revises the technical specifications regarding the pressure to be maintained in the start air receiver for the Division III emergency diesel generator.

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,

ORIGINAL SIGNED BY:

David L. Wigginton, Senior Project Manager
Project Directorate IV-1
Division of Reactor Projects III/IV
Office of Nuclear Reactor Regulation

Docket No. 50-458

Enclosures: 1. Amendment No. 91 to NPF-47
2. Safety Evaluation

cc w/encls: See next page

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

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Sincerely,

A handwritten signature in cursive script, appearing to read "D. Wigginton".

David L. Wigginton, Senior Project Manager
Project Directorate IV-1
Division of Reactor Projects III/IV
Office of Nuclear Reactor Regulation

Docket No. 50-458

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2. Safety Evaluation

cc w/encls: See next page

Mr. John R. McGaha
Entergy Operations, Inc.

River Bend Station

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

ENERGY GULF STATES, INC. **

CAJUN ELECTRIC POWER COOPERATIVE AND

ENERGY OPERATIONS, INC.

DOCKET NO. 50-458

RIVER BEND STATION, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 91
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 May 30, 1996, 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

* EOI is authorized to act as agent for Entergy Gulf States, Inc, which has been authorized to act as agent for Cajun Electric Power Cooperative, and has exclusive responsibility and control over the physical construction, operation and maintenance of the facility.

**Entergy Gulf States, Inc., which owns a 70 percent undivided interest in River Bend, 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.

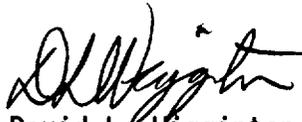
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment; and Paragraph 2.C.(2) of Facility Operating License No. NPF-47 is hereby amended to read as follows:

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 91 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.

FOR THE NUCLEAR REGULATORY COMMISSION



David L. Wigginton, Senior Project Manager
Project Directorate IV-1
Division of Reactor Projects III/IV
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical
Specifications

Date of Issuance: January 16, 1997

ATTACHMENT TO LICENSE AMENDMENT NO. 91

FACILITY OPERATING LICENSE NO. NPF-47

DOCKET NO. 50-458

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

REMOVE

3.8-23
B 3.8-41
B 3.8-48

INSERT

3.8-23
B 3.8-41
B 3.8-48

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.8.3.1	Verify each fuel oil storage tank contains $\geq 45,495$ gal of fuel.	31 days
SR 3.8.3.2	Verify lube oil inventory is: a. ≥ 367 gal for DGs 1A and 1B; and b. ≥ 295 gal for DG 1C.	31 days
SR 3.8.3.3	Verify fuel oil properties of new and stored fuel oil are tested in accordance with, and maintained within the limits of, the Diesel Fuel Oil Testing Program.	In accordance with the Diesel Fuel Oil Testing Program
SR 3.8.3.4	Verify each required DG air start receiver pressure is a. ≥ 160 psig for DGs 1A and 1B; and b. ≥ 200 psig for DG 1C.	31 days
SR 3.8.3.5	Check for and remove accumulated water from each fuel oil storage tank.	31 days
SR 3.8.3.6	For each fuel oil storage tank: a. Drain the fuel oil; b. Remove the sediment; and c. Clean the tank.	10 years

B 3.8 ELECTRICAL POWER SYSTEMS

B 3.8.3 Diesel Fuel Oil, Lube Oil, and Starting Air

BASES

BACKGROUND

Each diesel generator (DG) is provided with a storage tank having a fuel oil capacity sufficient to operate that DG for a period of 7 days while the DG is supplying maximum post loss of coolant accident load demand (Ref. 1). The maximum load demand is calculated using the assumption that at least two DGs are available. This onsite fuel oil capacity is sufficient to operate the DGs for longer than the time to replenish the onsite supply from outside sources.

Fuel oil is transferred from each storage tank to its respective day tank by a transfer pump associated with each storage tank. Redundancy of pumps and piping precludes the failure of one pump, or the rupture of any pipe, valve, or tank to result in the loss of more than one DG. All outside tanks, pumps, and piping are located underground. The fuel oil level in the storage tank is indicated in the control room.

For proper operation of the standby DGs, it is necessary to ensure the proper quality of the fuel oil. Regulatory Guide 1.137 (Ref. 2) addresses the recommended fuel oil practices as supplemented by ANSI N195 (Ref. 3). The fuel oil properties governed by these SRs are the water and sediment content, the kinematic viscosity, specific gravity (or API gravity), and impurity level.

The DG lubrication system is designed to provide sufficient lubrication to permit proper operation of its associated DG under all loading conditions. The system is required to circulate the lube oil to the diesel engine working surfaces and to remove excess heat generated by friction during operation. Each engine oil sump contains an inventory capable of supporting a minimum of 7 days of operation. This supply is sufficient to allow the operator to replenish lube oil from outside sources.

Each DG has an air start system with adequate capacity for five successive start attempts on the DG without recharging the air start receiver(s).

(continued)

BASES

SURVEILLANCE
REQUIREMENTS

SR 3.8.3.3 (continued)

The Frequency of these Surveillances on the stored fuel oil takes into consideration fuel oil degradation trends indicating that overall fuel oil quality is unlikely to change between Frequency intervals.

SR 3.8.3.4

This Surveillance ensures that, without the aid of the refill compressor, sufficient air start capacity for each DG is available. For DG 1A and 1B, each starting air system is sized to have the capacity for at least one emergency DG start attempt above the air pressure interlock, and multiple manual start attempts below the interlock, without recharging its start receiver(s). For DG 1C, the starting air system is sized to have the capacity for at least five successive start attempts without recharging its air start receiver(s). For each DG, either the forward or rear air start subsystem has the capacity to satisfy these multiple start requirements. The pressure specified in this SR reflects the value at which this can be accomplished, but is not so high as to result in failing the limit due to normal cycling of the recharge compressor.

The 31 day Frequency takes into account the capacity, capability, redundancy, and diversity of the AC sources and other indications available in the control room, including alarms, to alert the operator to below normal air start pressure.

SR 3.8.3.5

Microbiological fouling is a major cause of fuel oil degradation. There are numerous bacteria that can grow in fuel oil and cause fouling, but all must have a water environment in order to survive. Removal of water from the storage tanks once every 31 days eliminates the necessary environment for bacterial survival. This is the most effective means of controlling microbiological fouling. In addition, it eliminates the potential for water entrainment in the fuel oil during DG operation. Water may come from any of several sources, including condensation, ground water, rain water, contaminated fuel oil, and from breakdown

(continued)



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 91 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 May 30, 1996, the licensee (Entergy Operations, Inc.) for River Bend Station (RBS), Unit 1, requested an amendment to Facility Operating License NPF-47. The amendment proposed changes to Technical Specification (TS) Surveillance Requirement Section 3.8.3.4 regarding the pressure to be maintained in the start air receivers for the Division III emergency diesel generator. The staff has provided guidance for licensee's design and operation of starting systems for emergency diesel generators; see the Standard Review Plan 9.5.6 "Emergency Diesel Engine Starting System." One acceptable criterion is that receivers are to be sized and maintained at pressures which should be capable of cranking a diesel generator five times.

2.0 BACKGROUND

There are two standby diesel generators (DGs) designated as Division I DG (DG-1A) and Division II DG (DG-1B); and one high pressure core spray power supply DG designated as Division III DG (DG-1C) at the River Bend Station, Unit 1 (RBS). The Division I and II DGs are started by admitting air to the cylinders of each diesel and if the diesel does not start, sufficient starting air remains for subsequent (or a total of five (5)) automatic or manual starts. The Division III diesel generator, however, has an air driven starter motor system and in an emergency, starting air is admitted to the starter motors until the diesel starts or the air receiver tank is depleted of air. With this starter motor arrangement, the requirement for sufficient starting air for five starts must be established on an equivalence basis, i.e., there should be sufficient air to attempt to start the diesel five times assuming the air supply was not continuous and each attempt provided sufficient air to start the diesel.

Currently, the TS requires 160 psig or higher of pressure to be maintained in each of the start air receivers for the three DGs. During an inspection conducted in the Spring of 1995, the staff identified that while this value is representative of a 5-start pressure for the Division I and II DGs, the capacity of Division III DG start air receiver at this pressure to provide 5 starts has not been established.

By letter dated May 30, 1996, the licensee (Entergy Operations, Inc.) of RBS requested an amendment to Facility Operating License NFP-47. The amendment proposed changes to TS Surveillance Requirement Section 3.8.3.4 regarding the pressure to be maintained in the start air receiver for the Division III DG. The proposed changes require the start air receiver for the Division III DG to be maintained at a pressure of equal to or higher than 200 psig. With the proposed change to the TSs, the licensee also clarified the starting air requirements for the Division I and II diesel generators at 160 psig.

3.0 EVALUATION

Current TS Surveillance Requirement

Current TS Surveillance Requirement Section 3.8.3.4 requires that:

"Verify each required DG air start receiver pressure is ≥ 160 psig."

Proposed TS Surveillance Requirement

The licensee proposed to revise the above current TS Surveillance Requirement Section 3.8.3.4 in the following manner:

"Verify each required DG air start receiver pressure is:

- a. ≥ 160 psig for DGs 1A and 1B; and
- b. ≥ 200 psig for DG 1C."

In addition, the licensee revised the basis to reflect the above proposed TS Surveillance Requirement.

Current Basis

Current basis associated with TS Surveillance Requirement Section 3.8.3.4, in part, states that:

"..... For DG 1A and 1B either the forward or the rear air start subsystem is capable of starting the respective DG when air receiver pressure is within limits. For DG 1C both forward or rear air start subsystem must be within limits to start the DG."

Proposed Basis

The licensee proposed to replace the above partial current basis associated with TS Surveillance Requirement Section 3.8.3.4 in the following manner:

"..... For DG 1A and 1B, each starting air system is sized to have the capacity for at least one emergency DG start attempt above the air pressure interlock, and multiple manual start attempts below the interlock, without recharging its start receiver(s). For DG 1C, the air

starting system is sized to have the capacity for at least five successive start attempts without recharging its air receiver. For each DG, either the forward or rear air start subsystem has the capacity to satisfy these multiple start requirements."

With regard to Divisions I and II DG, each DG is provided with an air start system which consists of two subsystems. Each subsystem consists of one air compressor, one aftercooler, one air dryer, two air receivers, and associated piping, valves and controls. Each compressor is set to recharge its associated air receivers when the pressure drops to 235 psig and shuts off when the pressure reaches 250 psig. However, the RBS TS imposes a minimum pressure of 160 psig to be maintained in each of the air receivers. Upon receiving an emergency start signal, should the DG fail to start immediately, the DG continues to receive an automatic start attempt at cranking until the pressure in the air receivers falls to 120 psig. At this pressure, the air starting solenoid valves close to conserve starting air such that manual starts of the DG may be attempted. Normally with the air receiver pressure maintained above 235 psig, each air start system will have sufficient air inventory to start the associated DG eight times.

During the inspection conducted in the Spring of 1995, the inspection team reviewed the preoperational test results and concluded that both Division I and Division II DGs had demonstrated the capability of starting five times beginning with the start air receiver pressure at 160 psig and met the guidance described in the Standard Review Plan (SRP) for DG start air system (see the NRC Inspection Report 50-458/95-10 dated July 6, 1995). Therefore, the inspection team found the Divisions I and II DG air receiver pressure maintained at 160 psig acceptable.

With regard to Division III DG, the air start system consists of two independent subsystems. Each subsystem consists of one air compressor, one air dryer, one air receiver, two starting air motors, and associated piping, valves and controls. Each compressor is set to recharge its associated air receiver when the pressure drops to 225 psig and shuts off when the pressure reaches 240 psig. The DG can be started with one bank of dual air starting motors. However, upon receiving a starting signal, both banks of dual air starting motors will crank the DG to ensure positive cranking.

The licensee performed DG-1C start air system tests which demonstrated that with the start air receivers initially pressurized to 200 psig, the air start system with the starting motors will be able to provide five DG start attempts. Since the compressors keep the receivers charged to between 225 and 240 psig, the licensee proposed to maintain the DG-1C start air receiver at a pressure equal to or higher than 200 psig as the Surveillance Requirement for Division III DG start air receiver.

Based on its review, the staff finds the above proposed changes to TS Surveillance Requirement Section 3.8.3.4 and the associated basis regarding the pressure to be maintained in the start air receiver for the Division III DG are consistent with the guidance described in the SRP and in NUREG-1434,

"Standard Technical Specifications, General Electric Plants, BWR/6."
Therefore, the staff finds them acceptable.

4.0 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.

5.0 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 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 (61 FR 34892). 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.

6.0 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: D. Shum

Date: January 16, 1997