

Mr. Randall K. Edington
 Vice President - Operations
 Entergy Operations, Inc.
 River Bend Station
 P. O. Box 220
 St. Francisville, LA 70775

January 27, 1999

SUBJECT: RIVER BEND STATION, UNIT 1 - AMENDMENT NO. 102 TO FACILITY
 RATING LICENSE NO. NPF-47 (TAC NO. MA3729)

Dear Mr. Edington:

The Commission has issued the enclosed Amendment No. 102 to Facility Operating License No. NPF-47 for the River Bend Station, Unit 1. The amendment consists of changes to the license conditions in response to your application dated September 22, 1998.

The amendment removes License Condition 2.C.(8), "TDI Diesel Engines," and Attachment 3 to NPF-47, "TDI Diesel Engines Requirements."

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:

Robert J. Fretz, 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. 102 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

January 27, 1999

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Sincerely,

A handwritten signature in black ink, appearing to read "Robert J. Fretz".

Robert J. Fretz, 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

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Mr. Randall K. Edington
Entergy Operations, Inc.

River Bend Station

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

ENERGY GULF STATES, INC. **

AND

ENERGY OPERATIONS, INC.

DOCKET NO. 50-458

RIVER BEND STATION, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 102
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 September 22, 1998, 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
 - 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.

* EOI 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.

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2. Accordingly, the license is amended by deleting Paragraph 2.C.(8) and Attachment 3 to the license conditions as indicated in the attachment to this license amendment of Facility Operating License No. NPF-47.
3. The license amendment is effective as of its date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Robert J. Fretz, Project Manager
Project Directorate IV-1
Division of Reactor Projects III/IV
Office of Nuclear Reactor Regulation

Attachment: Changes to Facility Operating
License NPF-47

Date of Issuance: January 27, 1999

ATTACHMENT TO LICENSE AMENDMENT NO. 102

FACILITY OPERATING LICENSE NO. NPF-47

DOCKET NO. 50-458

Replace the following pages of the license conditions with the attached page and remove Attachment 3 to Facility Operating License No. NPF-47. The revised pages are identified by Amendment number and contain marginal lines indicating the areas of change.

REMOVE

**5
Attachment 3**

INSERT

**5
Attachment 3**

(7) Bypassed and Inoperable Status Indication (Section 7.5.2.2. SER and SSER 3)

Prior to startup following the first refueling outage, GSU shall implement design modifications to improve the capabilities of existing bypassed and inoperable status indication used to monitor the status of safety related systems. The specific design changes to be implemented are identified in a GSU letter dated December 3, 1984 as clarified in a GSU letter dated March 5, 1985.

(8) DELETED

(9) Ultimate Heat Sink (Section 9.2.5. SER and SSER 3)

Prior to startup following the first refueling outage GSU shall have installed and operational in the ultimate heat sink a permanent temperature monitoring system acceptable to the NRC staff and Technical Specification modifications as required.

(10) Fire Protection (Section 9.5.1. SER and SSER 3)

EOI shall comply with the requirements of the fire protection program as specified in Attachment 4. Attachment 4 is hereby incorporated into this license.

(11) Operating Staff Experience Requirements (Section 13.1.2.1. SSER 2)

EOI shall have a licensed senior operator on each shift, while in Operating Condition 1, 2 and 3, who has had at least six months of hot operating experience on a plant comparable to River Bend Station, including at least six weeks at power levels greater than 20% of full power, and who has had startup and shutdown experience.

(12) Post-Fuel-Loading Initial Test Program (Section 14. SER and SSER 3)

Any changes to the initial test program described in Section 14 of the FSAR made in accordance with the provisions of 10 CFR 50.59 shall be reported in accordance with 50.59(b) within one month of such change.

ATTACHMENT 3

TO NPF-47

DELETED



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 102 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 September 22, 1998, Entergy Operations, Inc. (the licensee) requested changes to the License Conditions (Facility Operating License No. NPF-47) for the River Bend Station (RBS), Unit 1. The proposed changes would remove License Condition 2.C.(8), "[Transamerica Delaval, Incorporated] TDI Diesel Engines," and Attachment 3 to NPF-47, "TDI Diesel Engines Requirements."

In the September 22, 1998, application, the licensee cited as its bases for removing the aforementioned licensing conditions the findings and conclusions of the NRC-approved version of the Transamerica Delaval, Inc. Emergency Diesel Generators Owners Group Generic Topical Report TDI-EDG-001-A as submitted on April 28, 1994, and NRC Safety Evaluation Report (SER), "Operability and Reliability Review of Emergency Diesel Generators Manufactured by Transamerica Delaval, Inc." dated March 17, 1994.

The licensee also requested clarification of a statement made on page 9, paragraph 5 of the March 17, 1994, SER. The SER stated that all members of the TDI Owners' Group are committed to implement changes to EDG control system to permit slow starts. The licensee maintained in the amendment request that RBS does not believe that implementation of this commitment is now necessary, and further declared that their experience has shown that fast starts have "not adversely affected engine performance or resulted in excessive or rapid engine wear when proper prelubrication procedures are used prior to planned engine starts."

2.0 BACKGROUND

License Condition 2.C.(8) and Attachment 3 to NPF-47 currently prescribe inspection requirements in the event of specific overload conditions experienced by the Division I and Division II emergency diesel generators (EDGs), and were imposed in response to the issues discussed in Supplement 3 to the River Bend Station Operating License Safety Evaluation Report, NUREG-0989, and in NUREG-1216, "Safety Evaluation Report Related to the Operability and Reliability of Emergency Diesel Generators Manufactured by Transamerica Delaval, Inc.," dated August 1986. These issues have been resolved as stated below and, accordingly, these license conditions are no longer warranted and may be deleted.

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3.0 EVALUATION

The TDI diesel generators Owners' Group (Owners' Group) submitted proposals on November 30, 1992, and December 7, 1993, on behalf of a number of plants with TDI emergency diesel generators (EDGs) including the River Bend plant. The Owners' Group proposed removal of diesel generator-related licensing conditions. These conditions were imposed as part of a technical resolution to address concerns regarding the reliability of the TDI EDGs following the crankshaft failure at Shoreham in August 1983. The technical resolution involved implementation of Phase I and Phase II programs as identified in NUREG-1216. The Phase I program focused on the resolution of known engine component problems that had potential generic implications, while the Phase II program focused on the design review of a large set of important engine components to ensure their adequacy from a manufacturing standpoint, as well as operational performance. At that time, the staff concluded that these components merited special emphasis in the area of load restrictions and/or maintenance and surveillance. The 16 major components which were identified included connecting rods, crankshafts, cylinder blocks, cylinder heads, piston skirts, and turbochargers. Engine load restrictions were addressed in the plant specific, license conditions, engine operating procedures and operator training, as appropriate, for five of these components. The most critical periodic maintenance/surveillance actions for these components were incorporated as license conditions.

On the basis of substantial operational data and inspection results, the Owners' Group provided information in its submittals of November 1992 and December 1993 to demonstrate that the special concerns of NUREG-1216 were no longer warranted. The Owners' Group stated that the TDI EDGs should be treated on a par with other EDGs within the nuclear industry and subjected to the same standard regulations, without the special requirements of NUREG-1216. In addition, the Owners' Group stated that this action will improve availability of the engines for service, especially during outages, while maintaining current reliability levels.

Between 1993 - 1994, the Nuclear Regulatory Commission (NRC) staff and its consultants at Pacific Northwest Laboratories completed a review of the operational data and inspection results contained in the Owners' Group submittals relative to the individual components. In addition, independent opinions were obtained from three leading diesel engine experts regarding these inspection requirements. On the basis of the review, the staff concluded that there was adequate justification for removing the present component-based licensing conditions. The staff's evaluation of the Owners' Group submittals was reported in a letter to Mr. R. C. Day, TDI Diesel Generators Owners' Group Clearinghouse, dated March 17, 1994.¹

The NRC staff has reviewed the licensee's submittal of September 22, 1998, with respect to whether its findings from its review of the Owners' Group submittals are applicable to the River Bend Station. Appendix D of the Safety Evaluation of the Owners' Group submittals identifies the specific license condition components that may be deleted as a result of the review. These components encompass and are consistent with the conditions in the RBS operating licenses.

¹ Letter from Mr. James A. Norberg, NRC, to Mr. R. C. Day, Duke Engineering and Services, Inc., TDI Diesel Generators Owners' Group Clearinghouse, dated March 17, 1994.

Therefore, the NRC staff concludes that the licensee's proposal is consistent with its Safety Evaluation on the Owners' Group submittals and that License Condition 2.C.(8) and the related Attachment 3 to Facility Operating License NPF-47 may be deleted.

EDG Slow Start Controls

In its September 22, 1998, amendment request, the licensee also requested clarification of a statement made on page 9, paragraph 5, of the March 17, 1994, SER approving the TDI Owners' Group Generic Topical Report. In the SER, the NRC stated that all members of the owners' group were committed to implementing EDG control system changes to permit slow starts. The intent of implementing these changes was to improve TDI engine components' life expectancy by minimizing fast starts under "cold" conditions. Experience has shown that component life expectancy in commercial TDI engines which are not subject to fast starts is far greater than life expectancy for TDI components in nuclear service. It was expected that owners' group members would implement changes to EDG control systems to permit slow engine starts in order to minimize engine wear and tear, thus improving engine reliability.

The licensee maintains in its September 22, 1998, amendment request that its experience has been that "fast starts have not adversely affected engine performance or rapid engine wear when proper pre-lubrication procedures are used prior to planned engine starts." RBS operating procedures require pre-lubrication of the diesel with the pre-lube oil pump immediately prior to an engine start. RBS maintenance experience has shown "very low" wear rates on internal engine components and turbocharger thrust bearings. The staff agrees that the engine pre-lubrication controls provided for in RBS operating procedures meets the intent of the Owners' Group commitment to install EDG controls to permit slow starts as referenced in the March 17, 1994, SER. The staff's concurrence is also based upon existing regulatory requirements, described below, which provide further assurance that the EDGs will continue to be maintained in manner that appropriately balances reliability and availability:

1. Paragraph (a)(1) of 10 CFR 50.65, "Requirements for monitoring the effectiveness of maintenance at nuclear power plants," states that:

Each holder of a license to operate a nuclear power plant under §§50.21(b) or 50.22 shall **monitor the performance or condition of structures, systems, or components, against licensee-established goals, in a manner sufficient to provide reasonable assurance that such structures, systems, and components, as defined in paragraph (b), are capable of fulfilling their intended functions.** Such goals shall be established commensurate with safety and, where practical, take into account industry-wide operating experience. When the performance or condition of a structure, system, or component does not meet established goals, appropriate corrective action shall be taken. [Emphasis added]

Additionally, Paragraph (3) of §50.65 states that:

Performance and condition monitoring activities and associated goals and preventive maintenance activities shall be evaluated at least every refueling cycle provided the interval between evaluations does not exceed 24 months. The evaluations shall be conducted taking into account, where practical, industry-wide operating experience. Adjustments shall be made where necessary to ensure that the objective of preventing failures of structures, systems, and components through maintenance is appropriately balanced against the objective of minimizing unavailability of

structures, systems, and components due to monitoring or preventive maintenance. In performing monitoring and preventive maintenance activities, an assessment of the total plant equipment that is out of service should be taken into account to determine the overall effect on performance of safety functions. [Emphasis added]

2. RBS stated that it will continue to perform routine inspections in accordance with the vendor's preventive maintenance recommendations, which currently includes periodic engine tear-downs, per Technical Requirements Manual (TRM) surveillance TSR 3.8.1.21. Potential changes to the current program will require the licensee to perform an evaluation in accordance with 10 CFR 50.59.

Since 10 CFR 50.65(b)(1) obliges the licensee to include their safety-related EDGs within the scope of the Maintenance Rule, RBS is required to establish a preventive maintenance program which properly balances EDG reliability and availability. The staff expects licensees to monitor and compare sub-component wear and tear of major safety-related equipment, such as emergency diesel generators, vis-a-vis other comparable equipment within and outside the nuclear industry to ensure its preventive maintenance program is effective. As a result, the staff believes there is sufficient regulatory oversight and programs to ensure that the licensee's current practice of implementing pre-lubrication controls in lieu of slow start controls will result in satisfactory equipment and sub-component reliability.

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 (63 FR 59592). 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: R. J. Fretz

Date: January 27, 1999