

October 8, 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. 99 TO FACILITY
OPERATING LICENSE NO. NPF-47 (TAC NO. M99348)

Dear Mr. McGaha:

The Commission has issued the enclosed Amendment No. 99 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 August 5, 1997, as supplemented by letter dated August 15, 1997.

The amendment revises the TSs to increase the two recirculation loop Minimum Critical Power Ratio (MCPR) safety limit to 1.13 and the single recirculation loop MCPR safety limit to 1.14 for Cycle 8 operation.

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.99 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 dark ink, appearing to read "D. Wigginton", is written over the typed name.

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

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Mr. John R. McGaha
Entergy Operations, Inc.

River Bend Station

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

ENTERGY GULF STATES, INC. **

CAJUN ELECTRIC POWER COOPERATIVE AND

ENTERGY OPERATIONS, INC.

DOCKET NO. 50-458

RIVER BEND STATION, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 99
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 August 5, 1997, as supplemented by letter dated August 15, 1997, 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 Operation, Inc. 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. 99 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: October 8, 1997

ATTACHMENT TO LICENSE AMENDMENT NO. 99

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

2.0-1
5.0-19

INSERT

2.0-1
5.0-19

2.0 SAFETY LIMITS (SLs)

2.1 SLs

2.1.1 Reactor Core SLs

2.1.1.1 With the reactor steam dome pressure < 785 psig or core flow < 10% rated core flow:

THERMAL POWER shall be \leq 25% RTP.

2.1.1.2 With the reactor steam dome pressure \geq 785 psig and core flow \geq 10% rated core flow:

*MCPR shall be \geq 1.13 for two recirculation loop operation or \geq 1.14 for single recirculation loop operation.

2.1.1.3 Reactor vessel water level shall be greater than the top of active irradiated fuel.

2.1.2 Reactor Coolant System Pressure SL

Reactor steam dome pressure shall be \leq 1325 psig.

2.2 SL Violations

With any SL violation, the following actions shall be completed:

2.2.1 Within 1 hour, notify the NRC Operations Center, in accordance with 10 CFR 50.72.

2.2.2 Within 2 hours:

2.2.2.1 Restore compliance with all SLs; and

2.2.2.2 Insert all insertable control rods.

2.2.3 Within 24 hours, notify the plant manager and the corporate executive responsible for overall plant nuclear safety.

(continued)

*Values applicable to Cycle 8 operation only.

5.6 Reporting Requirements

5.6.5 CORE OPERATING LIMITS REPORT (COLR) (continued)

- 1) NEDE-24011-P-A, "General Electric Standard Application for Reactor Fuel" (latest approved version);*
 - c. The core operating limits shall be determined such that all applicable limits (e.g., fuel thermal mechanical limits, core thermal hydraulic limits, Emergency Core Cooling Systems (ECCS) limits, nuclear limits such as SDM, transient analysis limits, and accident analysis limits) of the safety analysis are met.
 - d. The COLR, including any midcycle revisions or supplements, shall be provided upon issuance for each reload cycle to the NRC.
-

*For Cycle 8, specific documents were approved in the Safety Evaluation dated October 6, 1997, to support License Amendment No. 99.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 99 TO FACILITY OPERATING LICENSE NO. NPF-47

ENTERGY OPERATIONS, INC.

RIVER BEND STATION, UNIT 1

DOCKET NO. 50-458

1.0 INTRODUCTION

By letter dated August 5, 1997, Entergy Operations, Inc. (EOI), (the licensee) proposed changes to the Technical Specifications (TSs) (Appendix A to Facility Operating License No. NPF-47) for the River Bend Station (RBS), Unit 1. The proposed changes include the Minimum Critical Power Ratio (MCPR) safety limits based on the cycle-specific analysis for the Cycle 8 mixed core of (General Electric) GE11/GE8B fuel parameters. By letter dated August 15, 1997, the licensee provided additional clarification information. This additional information did not change the initial no significant hazards consideration determination.

2.0 EVALUATION

The licensee requested a change to the RBS, Unit 1 Cycle 8 (RBS1C8) TSs in accordance with 10 CFR 50.90. The proposed revision of TS 2.1.1.2 is described below.

The Safety Limit MCPR (SLMCPR) in TS 2.1.1.2 is proposed to change to ≥ 1.13 for two recirculation loop operation and ≥ 1.14 for single recirculation loop operation when the reactor steam dome pressure is ≥ 785 psig and core flow $\geq 10\%$ rated core flow. The cycle-specific parameters were used including the actual core loading, the actual bundle parameters, and the full-cycle exposure range.

The staff has reviewed the proposed TS changes which are based on the analyses performed using RBS1C8 cycle-specific inputs and approved methodologies, including GESTAR II (NEDE-24011-P-A-13, Sections 1.1.5 and 1.2.5) and its reference, NEDO-10985-A, January 1977, and found them acceptable. A revised R-factor methodology described in NEDC-32505P, "R-Factor Calculation Method for GE11, GE12 and GE13 Fuel," November 1995, and referenced in NEDE-24011-P-A-13 was used for this analysis. The revised R-factor calculation method uses the same Nuclear Regulatory Commission (NRC) approved equation stated in GESTAR (NEDE-24011-P-A) except adding the correction factors and substituting rod-integrated powers for the lattice peaking factors to account for the effects of the part-length-rod design. The staff has reviewed the R-factor calculation method for GE11, and the relevant information provided in the

proposed Amendment 25 to GESTAR II, NEDE-24011 (which is under the staff review), and found that use of the R-factor calculation method in conjunction with the approved methodology listed in TS 5.6.5 is acceptable for this application and will ensure that 99.9% fuel rods in the core will not experience the boiling transition. The staff has found that the justification for analyzing and determining the SLMCPR of 1.13 for two recirculation loop operation and 1.14 for single loop operation for the RBS1C8 is acceptable, since (1) the RBS1C8 is not an equilibrium core; (2) RBS1C8 has a much flatter radial power distribution and flatter pin-by-pin R-factor distribution than that was used to perform the GE11 generic SLMCPR evaluation; and (3) RBS1C8 is loaded with a higher batch fraction and a higher average batch weight percent enrichment.

Based on our review, we conclude that the changes to the TSs 2.1.1.2 are acceptable for the RBS1C8 application since the changes are analyzed based on the NRC-approved method and conservative cycle-specific parameters for SLMCPR analysis are used. A footnote to the specification has been added to indicate that the SLMCPRs are applicable only for Cycle 8 operation.

By letter dated August 15, 1997, the licensee agreed to the additions to the Safety Limit MCPR (TS 2.1.1.2) and to the Core Operating Limits Report (TS 5.6.5) that adds a footnote to each section to define the Cycle 8 applicability and the approved use of the R-factor methodology, as stated in this Safety Evaluation, for calculating MCPRs applicable to Cycle 8. The addition of this method will ensure that values for cycle specific parameters are determined such that all applicable limits of the safety analysis (e.g., nuclear limits, transient analysis limits and accident analysis limits) are met. Therefore, this change is acceptable.

3.0 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.

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. 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 (62 FR 45456). The amendment also changes record keeping or reporting requirements. Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9) and (c)(10). 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 Contributors: T. Huang
D. Wigginton

Date: October 8, 1997