

August 24, 1993

Docket No. 50-458

Gulf States Utilities
ATTN: Mr. Philip D. Graham
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Dear Mr. Graham:

SUBJECT: RIVER BEND STATION, UNIT 1 - AMENDMENT NO. 67 TO FACILITY OPERATING LICENSE NO. NPF-47 (TAC NO. M86954)

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 67 to Facility Operating License No. NPF-47 for the River Bend Station, Unit 1. The amendment consists of adding a footnote to Technical Specification (TS) 6.9.3.2 in response to your application dated July 2, 1993 (RBG-30705).

The amendment allows a one-time deviation from the requirement in TS 6.9.3.2 that the operating limit minimum critical power ratio (OLMCP) be calculated in accordance with the latest approved version of NEDE-24011-P-A, "General Electric Standard Application for Reactor Fuel." The deviation consists of a footnote added to TS 6.9.3.2 that states that the .04 minimum critical power ratio (MCP) penalty for misoriented fuel bundles does not apply to the remainder of Cycle 5 fuel load. This amendment permits River Bend to be operated for the remainder of Cycle 5 with an OLMCP of 1.18 rather than 1.22.

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

Sincerely,

Original Signed By
Edward T. Baker, Senior Project Manager
Project Directorate IV-2
Division of Reactor Projects III/IV/V
Office of Nuclear Reactor Regulation

Enclosures:

- 1. Amendment No. 67 to NPF-47
- 2. Safety Evaluation

cc w/enclosures:

See next page

OFFICE	PDIV-2/LA	PDIV-2/PM	RXSB	PDIV-2/D	OGC
NAME	EPeyton	EBaker:ye	RJones	SBlack	CPW
DATE	8/3/93	8/3/93	8/4/93	8/13/93	8/11/93
COPY	Yes/No	Yes/No	Yes/No	Yes/No	Yes/No

Document Name: M86954.AMD

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Mr. Philip D. Graham

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August 24, 1993

cc w/enclosures:

Winston & Strawn

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

GULF STATES UTILITIES COMPANY

DOCKET NO. 50-458

RIVER BEND STATION, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 67
License No. NPF-47

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Gulf States Utilities Company (the licensee) dated July 2, 1993, 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.

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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. 67 and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the license. GSU 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



Suzanne C. Black, Director
Project Directorate IV-2
Division of Reactor Projects III/IV/V
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: August 24, 1993

ATTACHMENT TO LICENSE AMENDMENT NO. 67

FACILITY OPERATING LICENSE NO. NPF-47

DOCKET NO. 50-458

Replace the following page of the Appendix "A" Technical Specifications with the enclosed page. The revised page is identified by Amendment number and contains a vertical line indicating the area of change. The overleaf page is provided to maintain document completeness.

REMOVE

6-19a

INSERT

6-19a

ADMINISTRATIVE CONTROLS

SEMIANNUAL EFFLUENT RELEASE REPORT (Continued)

to MEMBERS OF THE PUBLIC due to their activities inside the SITE BOUNDARY (Figure 5.1.3) during the report period. All assumptions used in making these assessments (i.e., specific activity, exposure time and location) shall be included in these reports. The assessment of radiation doses shall be performed in accordance with the methodology and parameters of the OFFSITE DOSE CALCULATION MANUAL (ODCM).

The Semiannual Radioactive Effluent Release Report to be submitted 60 days after January 1 of each year shall also include an assessment of radiation doses to the likely most-exposed MEMBER OF THE PUBLIC from reactor releases and other nearby uranium fuel cycle sources (including doses from primary effluent pathways and direct radiation) for the previous calendar year to show conformance with 40 CFR Part 190, Environmental Radiation Protection Standards for Nuclear Power Operation. Acceptable methods for calculating the dose contribution from liquid and gaseous effluents are given in Regulatory Guide 1.109, Rev. 1, October 1977.

The Semiannual Radioactive Effluent Release Reports shall include a list and description of unplanned releases from the site to UNRESTRICTED AREAS of radioactive materials in gaseous and liquid effluents made during the reporting period.

The Semiannual Radioactive Effluent Release Reports shall include any changes made during the reporting period to the PROCESS CONTROL PROGRAM (PCP) and to the ODCM, as well as a listing of new locations for dose calculations and/or environmental monitoring identified by the land use census pursuant to Specification 3.12.2

SPECIAL REPORTS

6.9.2 Special reports shall be submitted in the following manner:

- a. Special reports shall be submitted to the U.S. Nuclear Regulatory Commission, Document Control Desk, Washington, DC 20555, with a copy to the Regional Office of the NRC and a copy to the NRC Resident Inspector, within the time period specified for each report.
- b. Special reports in regard to Corbicula will be submitted to the NRC within 30 days of identification of infestation. In accordance with the settlement agreement dated October 10, 1984, these reports shall describe the level of infestation, affected systems and measures taken to prevent further infestation.

CORE OPERATING LIMITS REPORT

6.9.3.1 Core operating limits shall be established prior to startup from each reload cycle, or prior to any remaining portion of a reload cycle, for the following:

- a. The AVERAGE PLANAR LINEAR HEAT GENERATION RATES (APLHGR) for Specification 3.2.1.

ADMINISTRATIVE CONTROLS

CORE OPERATING LIMITS REPORT (Continued)

- b. The MINIMUM CRITICAL POWER RATIO (MCPR) for Specification 3.2.3.
- c. The LINEAR HEAT GENERATION RATE (LHGR) of Specification 3.2.4.
- d. The REACTOR PROTECTION SYSTEM (RPS) response time for APRM thermal time constant for Specification 3.3.1.

and shall be documented in the CORE OPERATING LIMITS REPORT (COLR).

6.9.3.2 The analytical methods used to determine the core operating limits shall be those previously reviewed and approved by the NRC, specifically those described in the NEDE-24011-P-A, "General Electric Standard Application for Reactor Fuel" (the approved version at the time the reload analyses are performed).*

6.9.3.3 The core operating limits shall be determined such that all applicable limits (e.g., fuel thermal-mechanical limits, core thermal-hydraulic limits, ECCS limits and nuclear limits such as shutdown margins, and transient and accident analysis limits) of the safety analysis are met.

6.9.3.4 The CORE OPERATING LIMITS REPORT, including any mid-cycle revision or supplements shall be provided, upon issuance for each reload cycle, to the NRC Document Control Desk with copies to the Regional Administrator and Resident Inspector.

6.10 RECORD RETENTION

6.10.1 In addition to the applicable record retention requirements of Title 10, Code of Federal Regulations, the following records shall be retained for at least the minimum period indicated.

6.10.2 The following records shall be retained for at least 5 years:

- a. Records and logs of unit operation covering time interval at each power level.
- b. Records and logs of principal maintenance activities, inspections, repair, and replacement of principal items of equipment related to nuclear safety.

*For Cycle 5 only, the result of misoriented fuel bundle analysis need not be considered in determining the OLMCPR due to the extensive verifications performed of fuel bundle placement and orientation for Reload 4.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 67 TO FACILITY OPERATING LICENSE NO. NPF-47
GULF STATES UTILITIES COMPANY
RIVER BEND STATION, UNIT 1
DOCKET NO. 50-458

1.0 INTRODUCTION

By letter dated July 2, 1993, Gulf States Utilities Company (GSU) (the licensee) requested an amendment to Facility Operating License No. NPF-47 for the River Bend Station, Unit 1. The proposed amendment would revise Technical Specification (TS) 6.9.3.2 to incorporate a footnote that permits the licensee to disregard a .04 minimum critical power ratio (MCPR) penalty for misoriented fuel bundles for the remainder of the Cycle 5 fuel load.

TS 6.9.3.2 requires that the core operating limits be determined using methods described in the latest version of NEDE-24011-P-A, "General Electric Standard Application for Reactor Fuel," (GESTAR) approved by the NRC. GESTAR presents generic information relative to the fuel designs and analyses of General Electric boiling water reactor plants for which GE provides the fuel. The generic information is supplemented by plant cycle-unique information and analytical results. GE documents and supplies this information to the licensee in the supplemental reload licensing report, including a listing of the fuel to be loaded in the core and the results of the safety analyses.

GE performed a cycle specific analysis to calculate the operating limit minimum critical power ratio (OLMCPR) for River Bend for the Cycle 5 reload. That analysis concluded that the misoriented fuel bundle event is the limiting event for determining the OLMCPR for Cycle 5 operation. The OLMCPR reported in the supplemental reload licensing report was 1.22.

In preparing the Core Operating Limits Report (COLR) required by TS 6.9.3.1, the licensee performed a 10 CFR 50.59 evaluation to justify disregarding the .04 MCPR penalty for a misoriented fuel bundle and listed the OLMCPR for Cycle 5 operations in the COLR as 1.18. The licensee based disregarding the penalty for a misoriented fuel bundle on the extensive verification of fuel bundle orientation that was performed during and after loading the core. The verification included independent review of video tapes of the fuel bundles in the core.

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However, disregarding the penalty for a misoriented fuel bundle resulted in the OLMCPR being calculated by a method not previously reviewed and approved by the NRC and therefore required a change to TS 6.9.3.2 prior to implementation.

In addition to the requested change, the staff is making an editorial clarification to TS 6.9.3.2. The current version of TS 6.9.3.2 requires that the licensee use the analytical methods in the latest version of GESTAR approved by the NRC in determining the core operating limits. The intent of the requirement was that the licensee would use the revision that was approved at the time the reload analysis was performed. With this clarification, the change removes the possibility that the technical specification could be interpreted to require that the methods for determining the core operating limits be revised each time a new revision of GESTAR is approved.

2.0 EVALUATION

The required OLMCPR at steady state operating conditions specified in the COLR is derived from the established fuel cladding integrity safety limit MCPR of 1.08 and 1.07 with either one or two recirculation loop(s) in operation, respectively, and an analysis of abnormal operational occurrences. For any abnormal operating occurrence analysis, with the initial condition of the reactor being at the steady state operating limit, it is required that the resulting MCPR does not decrease below the safety limit MCPR at any time during the occurrence assuming instrument trip settings are correct.

To assure that the fuel cladding integrity safety limit is not exceeded during any anticipated abnormal operating occurrence, the most limiting events are analyzed to determine which result in the largest reduction in critical power ratio. The limiting event yields the largest delta MCPR. When added to the safety limit MCPR, the required minimum OLMCPR is obtained. In addition to abnormal operating occurrences, the effect of a misoriented fuel bundle on OLMCPR is also analyzed in determining the limiting event.

The Cycle 5 reload core design was based on an OLMCPR of 1.18. Subsequent to manufacturing and delivering the fuel for the reload core, but prior to restart, GE discovered an error in the treatment of misoriented fuel bundles in the analysis for the reload. GE subsequently performed a cycle specific analysis to calculate the OLMCPR for River Bend for the Cycle 5 reload. That analysis concluded that the misoriented fuel bundle event is the limiting event for determining the OLMCPR for Cycle 5 operation. The OLMCPR reported by GE in the Cycle 5 supplemental reload licensing report is 1.22.

Prior to startup out of the refueling outage, the licensee and GE met with the NRC to discuss a GE proposal to reclassify the misoriented fuel bundle from an abnormal operating occurrence (AOO) to an accident. The licensee was informed that misoriented fuel bundles must be treated as an AOO until the NRC's review of the GE proposal was completed. Because the core reload was designed for an OLMCPR of 1.18 and operating at an OLMCPR of 1.22 will result in reduced operating flexibility and possible derate of the facility, the licensee was

told that if they chose to submit a TS amendment request, the NRC would consider a one-time deviation from the OLMCPR penalty if the licensee could provide adequate justification.

The licensee performed a calculation to estimate the probability of operation with a misoriented fuel bundle given the extensive verification of fuel bundle orientation and location in the core that occurred following the last reload of the core. This calculation estimated the probability of a misoriented fuel bundle to be $7.36E-07$ per cycle. In addition, a subsequent independent verification of fuel bundle orientation in the core was performed by GE through the review of video tapes of the core. To provide additional assurance that the core was properly loaded, the NRC's Resident Inspector reviewed the video tapes of the core.

The editorial change revises the parenthetical language at the end of TS 6.9.3.2 from "latest approved revision" to "the approved revision at the time the reload analyses are performed." This change removes the possibility that the technical specification could be interpreted to require that the methods for determining the core operating limits be revised each time a new revision of GESTAR is approved. The licensee has agreed to the editorial change.

The staff has reviewed the licensee's submittal and has concluded that the probability of the existence of a misoriented fuel bundle is very low and that operating the plant with an OLMCPR of 1.18 will satisfy the licensing requirements for safe operation. Based on our review, including the Resident Inspector's inspection of the core loading, we conclude that the proposed 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 (58 FR 39257). 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.

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 Contributor: Edward T. Baker, PDIV-2/NRR

Date: August 24, 1993