ENTERGY

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JOHN R. McGAHA, JR.
Vice President
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November 15, 1996

U. S. Nuclear Regulatory Commission
Document Control Desk
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Washington, DC 20555

Subject: River Bend Station - Unit 1
Docket No. 50-458
License No. NPF-47
License Amendment Request (LAR) 96-42,
Change to Technical Specification 2.1.1.2,
"Reactor Core [Safety Limits]"

File Nos.: G9.5, G9.42

RBEXEC-96-170
RBF1-96-0401
RBG-43326

Gentlemen:

In accordance with 10CFR50.90, Entergy Operations, Inc. (EOI) hereby applies for amendment of Facility Operating License No. NPF-47, Appendix A - Technical Specifications, for River Bend Station (RBS). The proposed change to the Technical Specification Safety Limit 2.1.1.2, "Reactor Core [Safety Limits]," will increase the two recirculation loop Minimum Critical Power Ratio (MCPR) limit from 1.07 to 1.10 and the single recirculation loop MCPR limit from 1.08 to 1.12.

This change request is the result of a non-conservative calculation identified by General Electric. The history and immediate corrective actions taken by EOI are discussed in LER 50-458/96-10 (RBG-42945, dated May 29, 1996) and Supplement 1 (RBG-43270, dated October 4, 1996). With the changes necessary to implement this request being conservative in nature, RBS has accomplished the necessary revisions to plant programs.

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Based on the guidelines in 10 CFR 50.92, Entergy Operations has concluded that this proposed amendment involves no significant hazards considerations. Attachment 2 provides the basis for this determination in a detailed description of the proposed changes, a justification for the proposed changes and the No Significant Hazards Considerations. Attachment 3 is a copy of the marked-up TS pages.

This request has been discussed with the NRR project manager for RBS. It has also been reviewed and approved by the RBS Facility Review Committee and the Nuclear Review Board. If you have any questions regarding this request or require additional information, please contact Mr. T. W. Gates at (504) 381-4866.

Sincerely,

John R McGaha

JRM/RJK/BMB/mjr
attachments

cc: Mr. David L. Wigginton
U. S. Nuclear Regulatory Commission
M/S OWFN 13-H-15
Rockville, MD 20852

NRC Resident Inspector
P. O. Box 1050
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U. S. Nuclear Regulatory Commission
Region IV
611 Ryan Plaza Drive, Suite 400
Arlington, TX 70611

Department of Environmental Quality
Radiation Protection Division
P. O. Box 82135
Baton Rouge, LA 70884-2135
Attn: Administrator

BEFORE THE

UNITED STATES NUCLEAR REGULATORY COMMISSION

LICENSE NO. NPF-47

IN THE MATTER OF

ENTERGY GULF STATES, INC.

CAJUN ELECTRIC POWER COOPERATIVE AND

ENTERGY OPERATIONS, INC.

AFFIRMATION

I, John R. McGaha, state that I am Vice President-Operations of Entergy Operations, Inc., at River Bend Station; that on behalf of Entergy Operations, Inc., I am authorized by Entergy Operations, Inc., to sign and file with the Nuclear Regulatory Commission, this River Bend Station License Amendment Request (LAR) 96-42, Change to Technical Specification 2.1.1.2, "Reactor Core [Safety Limits];" that I signed this letter as Vice President-Operations at River Bend Station of Entergy Operations, Inc.; and that the statements made and the matters set forth therein are true and correct to the best of my knowledge, information, and belief.

John R. McGaha

STATE OF LOUISIANA
PARISH OF WEST FELICIANA

SUBSCRIBED AND SWORN TO before me, a Notary Public, commissioned in the Parish above named, this 15th day of November, 1996.

(SEAL)

Claudia F. Hurst
Notary Public

My Commission expires with life

ENTERGY OPERATIONS INCORPORATED
RIVER BEND STATION
DOCKET 50-458/LICENSE NO. NPF-47

"Reactor Core [Safety Limits]"
(LAR 96-42)

AFFECTED TECHNICAL SPECIFICATION(S):

Technical Specification 2.1.1.2, "Reactor Core [Safety Limits]"

BACKGROUND:

In 1995, Entergy entered into a nuclear fuel supply contract with General Electric (GE) for River Bend Station (RBS) and Grand Gulf Nuclear Station (GGNS). Entergy has the right under the new fuel supply contract to request GE to perform plant/cycle specific analyses in place of generic analyses. The staff at GGNS requested that a plant/cycle specific Safety Limit Minimum Critical Power Ratio (SLMCPR) be calculated for their upcoming cycle in the expectation of acquiring additional operating flexibility. Initial results from these calculations indicated that the SLMCPR was greater than the generic value of 1.07 applicable to BWR/6 plants not in their initial cycle. Because of the close relationship between the staffs charged with reload analysis activities at GGNS and RBS, RBS quickly became aware of the GGNS initial SLMCPR results. After prompting by Entergy, GE determined that a problem existed in their SLMCPR methodology and that the problem applies to all BWR plants using GE fuel. GE issued a 10 CFR Part 21 notification alerting the BWR owners and the NRC to this issue.

PROPOSED CHANGE(S):

For Technical Specification 2.1.1.2 the changes to be made are:

	Old Value	New Value
Two recirculation loop operation	1.07	1.10
One recirculation loop operation	1.08	1.12

A mark-up of the applicable pages is included in Attachment 3.

DISCUSSION OF REQUEST:

The proposed change is required because the existing Technical Specification SLMCPR values are non-conservative. The methodology that GE used to establish the generic SLMCPR values has not be revised for nearly twenty years. In that time, fuel and core designs and reactor operations have become more aggressive, eventually surpassing the conservatisms built into the generic methodology.

The MCPR Safety Limit is set high enough to ensure that greater than 99.9% of all fuel rods in the core are expected to avoid transition boiling if the limit is not violated. The MCPR Safety Limit incorporates margin for uncertainty in the core operating state and for uncertainties which are dependent on fuel type, including fuel bundle nuclear characteristics, critical power correlation and manufacturing tolerances.

The method used to determine the SLMCPR for RBS is in agreement with commitments made by GE to the NRC (letter from M. A. Smith to the Document Control Desk, 10 CFR Part 21, Reportable Condition, Safety Limit MCPR Evaluation, May 24, 1996). A cycle-specific Safety Limit MCPR calculation was performed and has been included in both the Safety Limit MCPR and Operating Limit MCPR as identified in the reference. These calculations are identical to the method used to determine the generic SLMCPR value, except for the following:

1) The actual core loading was used, rather than that of a large BWR/4.

2) The actual bundle parameters (e.g. local peaking) were used, rather than generic values.

3) The full cycle exposure range was analyzed (beginning of cycle, point of peak hot excess reactivity, and end of cycle), rather than the end of an equilibrium cycle.

NO SIGNIFICANT HAZARDS CONSIDERATION:

The request does not involve a significant increase in the probability or consequences of an accident previously evaluated.

The revised Safety Limit MCPR and the cycle-specific thermal limits that are based on the revised SLMCPR have been calculated using the methods identified in the "Supplemental Reload Licensing Report For River Bend Station Reload 6 Cycle 7" (Reference 1). These methods are within the existing design and licensing basis and cannot increase the probability or severity of an accident. The basis of the MCPR Safety Limit calculation is to ensure that greater that 99.9% of all fuel rods in the core avoid transition boiling and fuel damage in the event of a postulated accident.

The SLMCPR is used to establish the Operating Limit Minimum Critical Power Ratio (OLMCPR). Neither the SLMCPR nor the OLMCPR can initiate an event, therefore a change to the SLMCPR does not increase the probability of a accident previously evaluated. Maintaining the Minimum Critical Power Ratio (MCPR) at or above the OLMCPR during normal operations precludes fuel failure due to overheating of the fuel clad during an anticipated operational occurrence (AOO), thus limiting the consequences of an AOO. The proposed change will increase the SLMCPR, which will require the OLMCPR to be increased, which in turn will ensure that the requirements of 10 CFR 100 are met for an AOO. Therefore, there is no increase in the consequences of an accident previously analyzed.

The request does not create the possibility of occurrence of a new or different kind of accident from any accident previously evaluated.

The MCPR Safety Limit is a Technical Specification numerical value designed to ensure that fuel damage from transition boiling does not occur as a result of the limiting postulated accident. It cannot create the possibility of any new type of accident.

Neither the SLMCPR or the OLMCPR can initiate an event, therefore a change to the SLMCPR does not create the possibility of occurrence of a new or different kind of accident from any accident previously evaluated.

The request does not involve a significant reduction in the margin of safety.

The MCPR Safety Limit is a Technical Specification numerical value designed to ensure that fuel damage from transition boiling does not occur as a result of the limiting postulated accident. This new Safety Limit MCPR is calculated using the methods identified in the reference. These methods are within the existing design and licensing basis and based on RBS specific inputs.

The margin of safety resides between the SLMCPR and the point at which fuel fails. The proposed change to SLMCPR (and the OLMCPR) will in fact restore the margin of safety associated with GE's SLMCPR methodology.

ENVIRONMENTAL IMPACT CONSIDERATION:

This request has been reviewed against the criteria of 10 CFR 51.22 for environmental consideration. The request does not affect any system discharging radwaste to the environment or monitoring any such discharge. Also, the request does not adversely affect any system designed to monitor or isolate gaseous radioactive effluents to the environment. Therefore, the request does not involve a significant hazards consideration, does not significantly increase the types or quantity of effluent that may be released offsite, and does not significantly increase individual or cumulative occupational radiation exposures. Therefore, the proposed change meets the criteria given in 10CFR51.22(c)(9) for a categorical exclusion from the requirement for an Environmental Impact Statement.

REFERENCE

1. General Electric Report: 24A5188, "Supplemental Reload Licensing Report For River Bend Station Reload 6 Cycle 7", Revision 2, June 1996