February 3, 2000

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

SUBJECT: RIVER BEND STATION, UNIT 1 - REQUEST FOR ADDITIONAL INFORMATION - POWER UPRATE AMENDMENT (TAC NO. MA6185)

Dear Mr. Edington:

By letter dated July 30, 1999, Entergy Operation, Inc., the licensee, requested an amendment to Facility Operating Licenses NPF-47, for River Bend Station (RBS). The amendment proposes an increase of the authorized operating core power level from 2894 megawatts to 3039 megawatts (thermal power).

The technical staff has reviewed your submittal pertaining to several aspects of the request. On the basis of this review, the Mechanical & Civil Engineering Branch and the Electrical & Instrumentation and Controls Branch find that additional information is needed in order to complete its evaluation. This information will be essential in preparing the staff's Safety Evaluation.

Attached is a request for additional information regarding the RBS power uprate license amendment application. Based upon discussions with Mr. Barry Burmeister of your staff, it is requested that your response be provided within 45 days from receipt of this letter.

Sincerely,

/RA/

Robert J. Fretz, Project Manager, Section 1
Project Directorate IV & Decommissioning
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-458

Enclosure: Request for Additional Information

cc w/encl: See next page

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REQUEST FOR ADDITIONAL INFORMATION
PROPOSED AMENDMENT FOR POWER UPRATE
RIVER BEND STATION

Mechanical & Civil Engineering Branch

1. On page 2-4 of Reference 1, you stated that the maximum control rod drive (CRD) internal pressure, which results in the maximum stress in CRD mechanism indicator tube, was caused by an abnormal operating condition. Please briefly describe the abnormal condition and discuss how this abnormal condition will be affected under the proposed uprate condition.

2. In Section 3.1.1 on page 3-1 of the reference, you stated that the power uprate evaluations are performed using the existing safety relief valve (SRV) setpoint (tolerance) analytical limits as the basis. In item 9(b) of Enclosure 2 of Reference 1, you proposed a change of the present -2/+0 % tolerance on the SRV safety function lift setpoint to +/-3%. Please clarify which tolerance on the SRV safety lift setpoint has been used for the safety analysis for power uprate.

3. In Section 3.3.2.1, page 3-4, you stated that the reactor internal component loading is determined by load combinations that include reactor internal pressure difference (RIPD), loss of coolant accident (LOCA), SRV, seismic, and fuel loads. You also stated that power uprate was shown to not increase previously calculated fuel lift loads, and therefore, for operation with power uprate, the reactor internals are evaluated only for the effects of the increased RIPD, seismic and SRV loads. Explain why the seismic and SRV loads increase with power uprate and why the effect of LOCA loads such as reactor cavity asymmetric pressurization loads/jet thrust forces was not considered for the power uprate.

4. In reference to Section 3.5, provide a quantitative evaluation for the reactor coolant pressure boundary piping systems and pipe supports with regard to the stresses and fatigue usage factor at the most critical lines and locations that are affected by the increased pressure, temperature and fluid transients for the power uprate. In light of Table 3-7, the maximum increase in pipe stress and support loads can be as much as 21 percent.

5. In Section 3.5, discuss the methodology and assumptions used for evaluating pipe supports, nozzles, penetrations, guides, valves, pumps, heat exchangers and anchors. Were the analytical computer codes used in the evaluation different from those used in the original design-basis analysis? If so, identify the new codes and provide justification for using the new codes and state how the codes were qualified for such applications.

6. In reference to Section 3.11, list the balance-of-plant piping systems that were evaluated for the power uprate. Provide, for the most critical piping systems evaluated, the calculated maximum stresses and fatigue usage factor, and code allowable limits. In reference to foot notes of Table 3-7, specify what is meant by American Society of Mechanical Engineers Code “Class 4" piping systems evaluated for the power uprate, and how were they evaluated?

Enclosure

7. In Section 4.1.4 on page 4-7, you stated that a number of the motor-operated-valves within the Generic Letter (GL) 89-10 program require calculation revisions, actuator adjustments and/or physical changes to ensure their satisfactory performance. Provide a list of affected valves including pressure, differential pressure, temperature, flow rate for both the original and the uprate conditions, their systems, and briefly discuss the proposed adjustments and changes mentioned above.

8. Discuss the functionality of safety-related mechanical components (including air-operated valves, SRVs, pumps and other safety-related valves not covered within GL 89-10) affected by the power uprate to ensure that the performance specifications and technical specification requirements (e.g., flow rate, close and open times) will be met for the proposed power uprate. Confirm all safety-related valves will be capable of performing their intended function(s) following the power uprate including such affected parameters as fluid flow, temperature, pressure and differential pressure, and ambient temperature conditions. Identify mechanical components for which operability at the uprated power level could not be confirmed, and provide proposed physical modifications or reanalyses, if necessary.

9. In Section 4.1.1.3 on page 4-5, you stated that the maximum drywell pressure values with power uprate are higher than the RBS Updated Safety Analysis Report calculated values but are bounded by the structural design pressure. However, Table 4-1 shows "NA" for the design structural limit of the peak drywell pressure. Provide the drywell structural design pressure.

10. On page 4-6, you stated that the SRV discharge line (SRVDL) piping loads are discussed in Section 3.11. However, there appears to be no discussion for the SRVDL loads in Section 3.11 under the power uprate condition. Please provide this discussion and results of the evaluation of the effects of increased SRV setpoint pressure on the SRVDL piping and SRVs.

11. Provide an evaluation of the potential for flow induced vibration in the main steam and feedwater piping systems, and in the heat exchangers of the condensate and feedwater systems as a result of the proposed power uprate.

12. Do you plan to modify piping or equipment supports in conjunction with the proposed power uprate? If there are plans to perform modifications, please provide examples of pipe supports requiring modification and discuss the nature of these changes.

Electrical & Instrumentation and Controls Branch

13. It is noted in Section 6.1 of your submittal that an offsite power grid stability analysis review determined that there is no significant effect on grid stability or reliability as a result of an increase in electrical output. Please provide a description of what this grid stability power uprate review consisted of. Also, include in this description the major assumptions made for this review and resulting review findings and conclusions.

14. Please provide a discussion that addresses how the current capability to provide electric power from the transmission network to the RBS will continue to be in full conformance with General Design Criterion 17, “Electric Power Systems,” as a result of the power uprate.

15. Provide a discussion that addresses the impact of the power uprates on the load, voltage, and short circuit current values for all levels of the station auxiliary electrical distribution system (including ac and dc).

16. In Section 10.3.1.1 of the RBS power uprate submittal, it is stated that the current accident and normal plant conditions for temperature, pressure, and humidity inside the primary containment are “nearly unchanged” for the power uprate conditions. Please provide a detailed discussion to clearly explain how the current accident and normal temperature, pressure, and humidity profiles for inside the primary containment do not change for the power uprate conditions and why these changes have no impact on the environment qualification of electrical equipment. In addition, please provide a similar discussion for the temperature, pressure, and humidity profiles for high energy line break areas outside of the primary containment.

17. In Sections 10.3.1.1 and 10.3.1.2 of the submittal, it is noted that the environmental qualification radiation levels under accident conditions are conservatively evaluated to increase 3% to 8% inside and outside the primary containment. It is also noted that reevaluation of the equipment qualifications for the uprated power conditions identified some equipment located inside and outside the containment which is affected by the higher accident radiation level. Please identify this equipment and discuss how this equipment will be requalified for the new radiation values. Also, provide the current, the revised, and the bounding radiation level conditions and provide numerical values for these radiation level conditions.

Reference

1. Entergy Operations, Inc., letter to the NRC, "River Bend Station - Docket Nos. 50-458, License Amendment Request (LAR) 99-15, Changes to Technical Specifications for Power Uprate Operation," dated July 30, 1999. - Enclosure 7: GE Nuclear Energy, NEDC-32778P, “Power Uprate Safety Analysis Report for the River Bend Station,” dated July 1999 (Proprietary)

cc:

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