

March 12, 2002

Mr. Paul D. Hinnenkamp
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 - LICENSE AMENDMENT REQUEST TO EXTEND THE
ALLOWED OUTAGE TIME FOR A DIVISION I OR DIVISION II EMERGENCY
DIESEL GENERATOR (TAC NO. MB3041)

Dear Mr. Hinnenkamp:

By letter dated September 24, 2001, Entergy Operations, Inc., requested an amendment to Facility Operating License NPF-47, for the River Bend Station, Unit 1 (RBS). The amendment proposes a change to Technical Specifications Section 3.8.1, "AC Sources - Operating," to extend the allowed outage time (AOT) for a Division I or Division II Emergency Diesel Generator (EDG). The Nuclear Regulatory Commission staff has reviewed your submittal and finds that additional information is needed in order to complete its evaluation.

Enclosed is a request for additional information regarding the RBS EDG AOT license amendment application. Based upon discussions with members of your staff, it is requested that your response be provided within 30 days from receipt of this letter.

Sincerely,

/RA/

David J. Wrona, Project Manager, Section 1
Project Directorate IV
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-458

Enclosure: Request for Additional Information

cc: See next page

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REQUEST FOR ADDITIONAL INFORMATION

Concerning the River Bend License Amendment Request (LAR) for a Permanent Technical Specifications (TS) Modification to Extend Completion Times (CT) of the Limiting Condition for Operation (LCO) 3.8.1

By letter dated September 24, 2001, the licensee proposed changes to River Bend Technical Specifications (TS) for extending the allowed outage time (AOT) up to 14 days for Division I and Division II emergency diesel generators (EDG) to perform preventive or corrective maintenance during plant operation. In order for the NRC staff to proceed with its review of the proposed change, the following information is requested:

1. Discuss and provide information on the reliability and availability of offsite power sources relating to the proposed change. The discussion should include duration, cause, date and time of each loss-of-offsite power (partial or complete) event.
2. It is the NRC staff's understanding that the purpose of the requested amendment is to allow an increased outage time during plant power operation for performing EDG inspection, maintenance, and overhaul, which would include disassembly of the EDG. EDG operability verification after a major maintenance or overhaul may require a full load rejection test. If a full load rejection test is performed at power, please address the following:
 - (a) What would be the typical and worse-case voltage transients on the 4160-V safety buses as a result of a full-load rejection?
 - (b) If a full-load rejection test is used to test the EDG governor after maintenance, what assurance would there be that an unsafe transient condition on the safety bus (i.e., load swing or voltage transient) due to improperly performed maintenance or repair of a governor would not occur?
 - (c) Using maintenance and testing experience on the EDG, identify possible transient conditions caused by improperly performed maintenance on the EDG governor and voltage regulator. Discuss the electrical system response to these transients.
 - (d) Provide the tests to be performed after the overhaul to declare the EDG operable and provide justification of performing those tests at power.
3. Do your Risk Management Procedures cover a comprehensive walk-down just prior to entering the period of reduced equipment availability (EDG extended maintenance on-line)?

ENCLOSURE

4. It is stated that Division III EDG can be cross-connected to either Division I or Division II AC buses to provide an alternate AC power in the event of a station blackout. In this regard provide the following information:
- (a) Is this a permanent cross-connection? How long would it take to accomplish this connection?
 - (b) Demonstrate that Division III EDG has enough capacity to power loads that are needed for a station blackout and loss of offsite power.
 - (c) Can this EDG be qualified as an alternate AC source according to the recommendation of Regulatory Guide 1.155, "Station Blackout."

The items below are related to the risk-informed aspect of the LAR and consists of two parts; introductory comments and specific requests. The former is to aid in preparing the response to the latter.

Comments:

- In evaluating the risk associated with changes to an LCO CT the NRC staff considers both the average risk of normal operation after the change compared to that before, and the risk of operation during the new CT outage (or allowed outage time, AOT) compared to average risk of normal operation. In the former, the impact of the change in CT is incorporated into the quantitative risk estimate through the change in unavailability of affected equipment. In the latter, which is more important to the evaluation, the impact is incorporated into the estimate by considering the plant risk configuration during the specific CT outage. The risk of operation during the CT outage is estimated by setting the unavailabilities of all equipment out of service (EOOS) to one. The NRC staff is also interested in, and considers when available, the risk of shutting down the plant to complete maintenance compared to the normal risk of shutting down the plant.
- Maintenance associated with LCO CT outages falls essentially into two categories, preventative or planned maintenance and corrective or unplanned maintenance. AOTs (or CTs) for LCOs were initially set to reasonably accommodate corrective maintenance of inoperable equipment important to plant safety, and entering LCOs for preventative maintenance at power was discouraged. The development of comprehensive risk assessment techniques have changed matters by allowing licensees to identify specific conditions under which preventative maintenance would be done, analyze the risk associated with these conditions before hand and, if the risk is small for the planned CT, to voluntarily enter an LCO with confidence of safe operation. However, corrective maintenance on the same equipment, which by definition is unplanned, is another matter. Assuming preventative maintenance is planned for - and performed with - the plant in the minimum risk configuration, the corrective maintenance will have a risk equal to or greater than that for preventative maintenance; how much greater depends on the unavailability of other risk significant equipment when the LCO is entered. A licensee cannot specify the risk configuration of a plant for corrective maintenance before hand since there is no way to anticipate when specific equipment will become inoperable, consequently, no way to predict the risk for an associated CT. Hence, the

difficulty with using risk assessment, quantitative or qualitative, to justify or extend AOTs of LCOs ahead of time.

Requests:

5. The various attachments make little mention of corrective maintenance and provide no discussion of associated risks. For corrective maintenance:
 - (a) Discuss the risks associated with the proposed CTs - and in order to get some estimate of a bounding condition -
 - (b) For each DG out of service for maintenance, prepare a table showing the estimated risk importances of remaining risk significant equipment;
 - (c) From the list of equipment that could cause the change in risk associated with the change in CT to significantly exceed what the NRC staff considers small for a single TS AOT change, select the most important (from those permitted to be inoperable by LCO CT for, say, more than a day) which plant experience (e.g., as observed in the plant log) shows to have some out of service frequency (attempt to make the choice realistic and bounding), and with it and the DG out of service, re-estimate the risk for the CT; and
 - (d) Provide assurances that the risks associated with the LCO CT for corrective maintenance will be kept comparable with that which the NRC staff considers small for a single TS AOT for preventative maintenance.
6. Attachment 2 makes reference to a Configuration Risk Management Program in connection with the controlling and minimizing risk during CT outages.
 - (a) Provide us copies of administrative procedure ADM-0096, "Risk Management Program Implementation and On-line Maintenance Risk Assessment," and operational support procedure OSP-0037, "Shutdown Operations Protection Plan;"
 - (b) If not dealt with in the procedures, discuss the controls that limit at power preventative maintenance outage times and frequencies;
 - (c) If not dealt with in the procedures, discuss application of the programs, or similar procedures, to corrective maintenance and emergent EOOS [unless already discuss in response to 5(d)] - it is noted that the reassuring contingency measures discussed in the attachment and the proposed TS Bases, and limitations on voluntary entry, are not applicable to corrective maintenance;
 - (d) If the procedures do not contain quantitative criteria used by River Bend in making decisions on when a risk is small, and what level of risk (not color codes) triggers specific operational actions (not managerial levels of approval) together with the action associated with each level (e.g., discuss the point at which River Bend would voluntarily reduce the maintenance time to less than the LCO CT or shut down the plant), provide the information, and include discussion of qualitative considerations used by River Bend; and

- (e) Since significant increases in LCO CTs, such as those proposed, significantly increase the window during which other risk significant equipment can become inoperable, discuss the potential risk from overlapping equipment outages based on the plant log and current CTs and planned or proposed CT extensions.
- 7. Attachment 3 contains comments on the River Bend Probabilistic Safety Analysis Peer Review.
 - (a) Provide a summary of this review;
 - (b) If not provided in the report, describe the criteria for element grades (e.g., what constitutes a Grade 3 element); and
 - (c) Attachment 4 states "The Peer Review comments addressed as part of model revision 2D were those with a high potential to impact the calculated model results ...". If any of these model changes, or those made to revision 3, would affect which items are included in Table 2 of Attachment 3 or their risk impact characterization, describe the item and discuss the EDG AOT impact (or was the table prepared using revision 3).

River Bend Station

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