

NRR-PMDAPEm Resource

From: Wang, Alan
Sent: Tuesday, January 20, 2015 11:27 AM
To: BURMEISTER, BARRY M; Joseph Clark (JCLARK@entergy.com)
Cc: Blechman, Paula
Subject: River Bend Station Unit 1 License Amendment Request for Change to Technical Specifications 3.8.1, "AC Sources - Operating" (MF4421)

By letter dated July 9, 2014 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML14212A396), Entergy Operations Inc. (Entergy, the licensee) submitted a license amendment request (LAR) for River Bend Station (RBS) Unit 1. Entergy submitted a license amendment request (LAR) to modify the Surveillance Requirements (SR) related to Technical Specification (TS) 3.8.1, "AC [Alternating Current] Sources – Operating. The proposed changes will lower the upper bound of the frequency SR Acceptance Criteria Tolerance Band (ATCB), lower the upper bound of the voltage SR ACTB for diesel generator (DG) 1A and DG 1B, and raise the lower bound of the test load SR ACTB. The US Nuclear Regulatory Commission (NRC) staff has reviewed the July 9, 2014, submittal and has determined that the following additional information is required to complete its review of the amendment request:

1. In the RBS LAR, Attachment 1, on pages 2, 3, 4, and 10 of 16, for DG 1C Entergy proposed a new minimum Test Load Steady State SR ACTB loading of 2525 kW, however, in the markups for the TS changes for the SRs in Attachment 2 on pages 3.8-6, 3.8-8, 3.8-11, and 3.8-12, the number is 2530 kW. Please clarify the discrepancy in the different values for DG 1C.
2. In RBS LAR, Attachment 3, the licensee provided the TSs Bases markups for TS 3.8.1, "AC Sources – Operating" Surveillance Requirements (SR) 3.8.1.2, 3.8.1.3, 3.8.1.7, and 3.8.1.14. The proposed changes affect TS 3.8.1, SR 3.8.1.2, SR 3.8.1.3, SR 3.8.1.7, SR 3.8.1.10, SR 3.8.1.11, SR 3.8.1.12, SR 3.8.1.14, SR 3.8.1.15, SR 3.8.1.19, and SR 3.8.1.20. While the NRC staff does not review TS bases, please explain why the submittal did not identify TS bases changes in all affected SRs.
3. In the RBS LAR, Section 2 states "Proposed Technical Specification pages are provided in Attachment 4." However, Attachment 4 includes a list of Regulatory Commitments. Please update the LAR and provide the proposed information.
4. In RBS LAR, Section 2.3 states that in the course of an NRC Component Design Basis Inspection (CDBI), it was found that the EDG electrical load calculations did not account for the EDG frequency variation and, therefore, did not provide for the maximum expected load conditions. Please confirm that the proposed minimum loading for DGs 1A, 1B (3050kW) and 1C (2525kW) envelop the maximum postulated loads on the respective DGs if they were operating at the proposed extremes of voltage and frequency during a design bases accident.
5. In RBS LAR, Section 2.1 states in part that "these changes will align the SR ACTBs with updated EDG electrical loading calculations." Please confirm if the updated EDG loading requirements will be included in the RBS USAR.
6. The NRC staff notes that the minimum voltage (3740 V) and frequency (58.8 Hz) requirements for DG 1C during the start are not being revisaed by the LAR. DG 1C is referred to as the high pressure core spray (HPCS) diesel generator in the USAR. The NRC staff also notes that Updated Safety Analysis Report (USAR) Table 1.8-1 documents an exception to Regulatory Guide 1.9, Position 4 Conformance. The USAR notes:

The design function of the HPCS diesel generator unit is considered to be a justifiable departure from strict conformance to Regulatory Guide 1.9, regarding voltage and frequency limits during the initial loading transient. The HPCS diesel generator loads consist of one large pump and motor combination (approximately 2,500 hp), one medium size pump (450 hp), and other miscellaneous loads;

consequently, limiting the momentary voltage drop to 25 percent and the momentary frequency drop to 5 percent would not significantly enhance the reliability of HPCS operation.

Assuming the bus voltage and frequency at the minimum allowable values, please confirm that the voltage and frequency transient observed during a large motor start, does not adversely impact any operating loads.

7. The RBS LAR section 3.2.1 states “The new frequency nominal setpoint and upper limit have been evaluated, and no adverse effects have been identified with respect to the performance of the EDGs, EDG loads, mission time, or affected equipment. The engineering evaluation demonstrated that a decrease in EDG nominal frequency of 0.3 Hz (from 60 Hz to 59.7 Hz) would not prevent the safety related equipment from performing their design functions. Additionally, safety related motor operated valves would not exceed their maximum allowed stroke times if the EDG nominal frequency was reduced by 0.3 Hz, because the allowed stroke times are based on the minimum SR ACTB, which remains unchanged at 58.8 Hz.” Please provide the following information as pertains to performance of safety related equipment required to respond at the onset of an accident:

- a. Please explain any impacts due to change in flow rates for critical pumps when the motors are operating at the lower frequency. Include the flow rates assumed in accident analyses.
- b. Please explain any impacts due to change in pressure for systems when the motors are operating at the higher allowable frequency.
- c. Change in stroke times for critical motor operated valves when the DGs are operating at the lower allowable frequency. Please include a summary of stroke times assumed in accident analyses and validated during the last surveillance test. Explain if the DG voltage and frequency variations observed during DG sequencing were considered in evaluating valve stroke times.
- d. The change in torque when the DGs are operating at the lower allowable voltage and frequency.

8. The NRC staff notes that SRs 3.8.1.2 and 3.8.1.7 have allowable values of 5400 V and 66.75 Hz for DG 1C when it starts. These values are greater than a +/- 10% allowable for most equipment to withstand. Please confirm that these allowable values do not have an adverse impact on safety related equipment.

This request was discussed with Mr. Barry Burmeister of your staff on January 20, 2015, and it was agreed that a response would be provided within 30 days from the issuance of this email. If circumstances result in the need to revise the requested response date, please contact me at (301) 415-1445 or via e-mail at Alan.Wang@nrc.gov.

Alan B. Wang

Project Manager (River Bend Station)

Nuclear Regulatory Commission

Division of Operating Reactor Licensing

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