

BellBenderRAIPEm Resource

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Sent: Thursday, December 20, 2012 1:36 PM
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Cc: BellBendCOL Resource; Segala, John; Goldin, Laura; Andersen, James; Kang, Peter
Subject: Bell Bend COLA - Draft Request for Information No. 123 (RAI No. 123) - NRR/EEEB 6830, 6767, 6768, 6769
Attachments: Draft RAI Leter 123 - NRR-EEEB 6830, 6767, 6768, 6769.doc

Attached is DRAFT RAI No. [123](#) for the Bell Bend COL Application. Please contact me at your earliest convenience to identify whether you need a clarifying conference call prior to issuance of this RAI.

During a call, a schedule for response submittal will also need to be established.

If you have any questions, please contact me.

Michael A. Canova

Project Manager - Bell Bend COL Application
Docket 52-039
EPR Project Branch
Division of New Reactor Licensing
Office of New Reactors
301-415-0737

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Request for Additional Information 123

DRAFT

Issue Date: 12/20/2012
Application Title: Bell Bend Docket Number 52-039
Operating Company: PPL Bell Bend LLC.
Docket No. 52-039
Review Section: 08.01 - Electric Power - Introduction
Review Section: 08.02 - Offsite Power System
Review Section: 08.03.01 - AC Power Systems (Onsite)
Application Section:

QUESTIONS

08.01-2 (e-RAI6767)

Correct the references (i.e., Tables 8.3-13 through 8.3-16) of US EPR FSAR (Rev. 3) cited in BBNPP FSAR Section 8.1.3 (Page 8-2), as those references have been changed from Rev. 2 of US EPR FSAR to Rev. 3.

In Figure 8.1-1 (page 8-8) and 8.2-1 (page 8-30), correct the number of circuits (i.e., five) from BBNPP 500 kV switchyard to BBNPP power block according to the latest US EPR FSAR (Rev. 3).

08.02-11 (e-RAI 6830)

On July 27, 2012, the NRC issued Bulletin 2012-01, "Design Vulnerability in Electric Power System," (Agencywide Documents Access and Management System (ADAMS) Accession Number ML12074A115) to all holders of operating licenses and combined licenses for nuclear power reactors requesting information about the facilities' electric power system designs, in light of the recent operating experience that involved the loss of one of the three phases of the offsite power circuit (single-phase open circuit condition) at Byron Station, Unit 2 to verify compliance with applicable regulations and to determine if further regulatory action is warranted.

In order to verify the applicants of new reactors have addressed the design vulnerability identified at Byron in accordance with the requirements specified in General Design Criterion (GDC) 17, "Electric Power Systems," in Appendix A, "General Design Criteria for Nuclear Power Plants," and the design criteria for protection systems under 10 CFR 50.55a(h)(3), please provide the following information:

- Describe the protection scheme design for important to safety buses (31-34BDA) to detect and automatically respond to a single-phase open circuit condition or high impedance ground fault condition on credited offsite power circuits.
- If the important to safety buses are not powered by offsite power sources during at power condition, explain how the surveillance tests (e.g., SR 3.8.1.1) are performed to verify that a single-phase open circuit condition or high impedance ground fault condition on an off-site power circuit is detected.
- Describe the plant operating procedures including off-normal operating procedures, specifically call for verification of the voltages on all three phases of the ESF buses?

08.02-12 (e-RAI 6768)

1. In Figure 8.2-2 (Page 8-28), update the drawing to reflect the latest US EPR Rev. 3 which does not have the third normal auxiliary transformer (NAT) 30BBT03. If the NAT (30BBT03) exists no longer, update Section 8.2.1.2 (Station Switchyard) as appropriate (including revising the number of bays and removing circuit breakers 5 and 6).

2. In 8.2.2.4 (Compliance with GDC 17), COL Information Item 8.2-4 requires the applicant to provide a site-specific grid stability analysis. The applicant cited two relevant PJM studies performed for BBNPP: System Impact Study (SIS) and Stability Study (PSS), which were performed in 2008. Justify the conclusion from studies performed in 2008 still remains valid, and provide any updated information that supports the above studies.

3. In Section 8.2.2.4 addressing GDC 17 compliance, a failure mode and effects analysis (FMEA) was performed for the possibility of simultaneous failure of the 500 kV switchyard components such as line towers, conductors, switchyard, circuit breakers, and disconnect switches. In addition to GDC 17 compliance, GDC 4 requires that structures, systems, and components (SSCs) of the offsite power system be protected against dynamic effects, including the effects of missile that may result from equipment failures. The NRC noted that the FMEA did not include the gas insulated switchyard (GIS) equipment. Since the GIS equipment maintains high pressure, sudden release of pressure could result in missile effects and damage to the GIS equipment. Provide the FMEA, and a site-specific ITAAC for GIS equipment, or explain why it is not necessary.

08.03.01-7 (e-RAI 6769)

Staff requests following information:

1. In Figure 8.3-2 (Pages 8-45 through 8-48), update all four pages of Figure 8.3-2 as necessary based on the latest U.S EPR Rev. 3 that include site-specific equipment (essential service water emergency makeup system-ESWEMS).

2. Section 8.3.1.1.1 (Emergency Power Supply System-EPSS) describes site-specific EPSS distribution equipment due to ESWEMS change from mechanical draft cooling towers to natural draft cooling towers. Provide design details such as ESWEMS equipment (Class 1E), power supply configuration, routing, and connection (i.e., overhead or underground).

3. For Section 8.3.1.1.2 (Normal Power Supply System-NPSS), update Figure 8.3-2 (pages 45-48) according to the latest US EPR FSAR Rev. 3, and revise Section 8.3.1.1.2 that discusses the circulating water supply system for the cooling towers. Identify information that is incorporated by reference (IBR), supplements, or departs from the US EPR FSAR, provide site-specific and conceptual design NPSS portions of the distribution system and electrical loads (number of motors for fan and its size etc), including information on cooling water makeup and raw water supply pumps located in the BBNPP intake structure.

4. For Section 8.3.1.1.7 (Electrical Equipment Layout), provide electrical equipment layout drawings for the electrical components that distribute power to safety-related (Section 8.3.1.1.1- Emergency Power Supply System) and non-safety-related loads (Section 8.3.1.1.2-Normal Power Supply System) and its physical locations with respect to Safeguard buildings, Essential Service Water pump, ESWEMS pump house, EDG, and intake structures.

5. COL information item 8.3-2 requires developing inspection, testing, and monitoring programs to detect the degradation of inaccessible or underground power cables that support EDGs, offsite power, ESW, and other systems that are within the scope of 10 CFR 50.65. In BBNPP Section 8.3.1.1.8, it indicated that "the installation of site-specific and underground power cables (described in the US EPR FSAR that is within the scope of 10 CFR 50.65) will be tested as a part of routine maintenance. If the test finds any negative trends, the tested cables are identified and track in the corrective action process." Explain why this is not a departure (i.e., developing programs vs. testing as a part of maintenance rule) from US EPR FSAR.