BellBendEnveRAIPEm Resource

From: Quinn-Willingham, Laura
Sent: Wednesday, October 03, 2012 5:15 PM
To: Sgarro, Rocco R
Cc: ARMARCHESE@aol.com; Rishel, Jeremy P; Palmrose, Donald; Hart, Michelle; 'Tom Grant'; Hsia, Anthony; Burton, William; Mcdowell, Bruce K; Leigh, Kimberly D; Terry, Tomeka
Attachments: ENV-18 RAI_6817_DBA.pdf

Rocky,
Please find attached draft RAI Env-18 for the Bell Bend COL application. The ENV-18 RAI is a new RAI that is related to design basis accidents and was not in the draft RAI table that was provided to you on August 13, 2012. Please notify me if you would like a clarification discussion of this draft RAI. This RAI will be issued as final 10-days (business days) from today's date if there are changes to the RAI per any clarification calls. If there are no changes to the draft RAI, then this email is considered to be the transmittal of the final RAI.

The NRC assumes technically correct and complete responses within 30 calendar days of receipt of final RAIs. For any RAIs that cannot be responded to within 30 calendar days, it is expected that a date for receipt of this information will be provided to the staff within the 30-day period so that the staff can assess how this information might impact the schedule. The 30-day period will begin with the issuance of the final RAI 10-days (business days) from now. If no changes are needed then this transmittal will serve as the final RAI and the 30-day period will start 10-days (business days) from today's date. Please contact me if you have any questions.

Thanks,

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Request for Additional Information ENV-18

Issue Date: 10/3/2012
Application Title: Bell Bend Environmental Review Docket Number 52-039
Operating Company: PPL Bell Bend LLC.
Docket No. 52-039
Review Section: EIS 5.11 - Environmental Impacts of Postulated Accidents
Application Section: Part 3 - Environmental Report

QUESTION

EIS 5.11-17

Provide in the Bell Bend Nuclear Power Plant (BBNPP) COL revised Environmental Report (ER) a resolution of the following:

a) Inconsistencies between the release time periods listed in ER Tables 7.1-19 and 7.1-25 and U.S. EPR FSAR Tables 15.0-36 through 38 and 15.0-40 through 44 regarding the release time periods used in the source terms for the locked rotor accident (LRA) and rod ejection accident (REA) analyses.

b) Inconsistencies between the "totals" row for each release interval period from ER Table 7.1-25, which provides the source term for the REA, and the corresponding "totals" row presented in the documents reviewed at the supplemental environmental site audit in May 2012.

c) In ER Section 7.1 provide a discussion of the site-specific source term and dose results for the REA analysis case assuming a primary containment leakage pathway and add a table with the source term for the REA containment leakage pathway. This is in addition to the source term and dose results for the secondary-side leakage pathway, which are already included in BBNPP ER Section 7.1, including ER Table 7.1-13 (Summary of the DBA Radiological Consequences at Offsite Receptors from BBNPP) and Table 7.1-25 (Radionuclide Releases to Atmosphere for Rod Ejection Accident (REA) with Accident-Induced 26% Clad Failure).

Supporting Information:

ESRP Section 7.1 directs the staff to review the applicant's calculated dose consequences as presented in the ER. Four (4) design basis accident (DBA) departures have been taken between the BBNPP FSAR/ER and the AREVA U.S. EPR Design Certification (DC) due to the change in the exclusion area boundary (EAB) distance from 0.43 mile to 0.33 mile. NRC safety review personnel have this information as part of Rev. 3 of the COLA, which was submitted in March 2012. It is noted that no departures are supposed to exist between the BBNPP FSAR and ER. However, for two of the BBNPP DBA Departures: LRA, and REA, the NRC staff finds that the following inconsistencies exist between the BBNPP ER and FSAR (including documents reviewed at the supplemental environmental site audit in May 2012 and in the reading room that support the ER and FSAR) and require resolution, since they provide important input for the determination of time-dependent low population zone (LPZ) doses:

a) ER Tables 7.1-19 and 7.1-25, regarding source terms for the LRA and REA, respectively, show radionuclide activity released to the environment for the 8 to 24 hour period, whereas the BBNPP FSAR (and supporting documents reviewed at the supplemental environmental site audit in May 2012 and in the reading room) shows no such release for that period of time. It appears that the last two columns for the "8 to 24" hour interval may be incorrectly labeled and should be "totals" for the "0 to 2" and "2 to 8" hour intervals.

b) For ER Table 7.1-25, regarding source term for the REA, the totals for each release interval period do not equate to the corresponding totals in the BBNPP FSAR (and supporting documents reviewed at the supplemental environmental site audit in May 2012 and in the reading room).

c) For ER Table 7.1-25 for the REA, it is indicated in the table title that this accident scenario is for a “Secondary-Side Release Without Steam Generator Uncovery.” The U.S. EPR FSAR, Chapter 15.0.3.9 analysis of the REA includes two release pathways by modeling the release from the primary containment separately from modeling release through the secondary side, in accordance with RG 1.183. In both release scenarios, the U.S. EPR FSAR analyses back-calculated the maximum allowable fuel damage (through cladding failure with or without overheating) that would result in a dose at the EAB and/or LPZ to be approximately 90 percent of the regulatory limit. See Tables 15.0-40 through 15.0-44 in the U.S. EPR FSAR. The U.S. EPR FSAR analyses indicate that the REA primary containment leakage pathway case results in the more limiting allowable fuel damage, if only fuel cladding failure is assumed. Performing only the site-specific REA dose calculation for the secondary-side pathway, with the fuel damage departure assumptions , may not be bounding.

Therefore, provide BBNPP site-specific REA source terms and dose results at the EAB and LPZ for both the primary containment leakage and secondary-side release pathways.

This is a new RAI and was not assigned an Information Need number in the draft RAI table.

Acceptance Criteria: ESRP Section 7.1; 10 CFR Parts 51.45, 51.50(c) and 100.