

CCNPP3COLA PEmails

From: John Rycyna
Sent: Thursday, October 02, 2008 8:31 AM
To: Wrobel, George
Cc: CCNPP3COL Resource; Joseph Colaccino; Lynn Mrowca; Theresa Clark
Subject: RAI No 17 SPLA 1084.doc
Attachments: RAI No 17 SPLA 1084.doc

George,

Attached please find the subject request for additional information (RAI). A draft of the RAI was provided to you on September 18, 2008. No conference call was requested to discuss this RAI. The schedule we have established for review of your application assumes technically correct and complete responses within 30 days of receipt of RAIs. For any RAIs that cannot be answered within 30 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 will impact the published schedule.

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From: John Rycyna

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Request for Additional Information No. 17, Revision 2
10/2/2008

Calvert Cliffs Unit 3

UniStar

Docket No. 52-016

SRP Section: 19 - Probabilistic Risk Assessment and Severe Accident Evaluation

Application Section: 19.1.4.1

QUESTIONS

19-1

The probabilistic risk assessment (PRA) guidance (Chapter 19) in section C.III of Regulatory Guide (RG) 1.206 states that “[i]n cases where it can be shown that assumptions in the certified design PRA (1) bound certain site-specific and plant-specific parameters, and (2) do not have a significant impact on the PRA results and insights, no change to the design certification PRA is necessary.” The discussion of losses of offsite power (LOOP) on page 19-7 of the Calvert Cliffs Nuclear Power Plant (CCNPP) Unit 3 Final Safety Analysis Report (FSAR) addresses only the at-power LOOP frequency. Please revise the FSAR to provide similar discussion on the validity of assumptions and impact on risk insights for:

- a. at-power LOOP recovery.
- b. shutdown LOOP frequency.
- c. shutdown LOOP recovery.
- d. consequential LOOP.

19-2

The discussion of the circulating water system (CWS) on page 19-8 of the CCNPP Unit 3 FSAR is not detailed enough for the staff to conclude that the U.S. EPR PRA bounds the plant-specific system design. Revise the FSAR to include a quantitative discussion of how the failure probability of the plant-specific normal heat sink (NHS) is bounded by the NHS undeveloped event modeled in the U.S. EPR PRA, as well as how assumptions related to the NHS model have been confirmed for the CCNPP Unit 3 site.

19-3

Page 19-8 of the CCNPP Unit 3 FSAR states that failures of CWS are included in the determination of loss-of-balance-of-plant (LBOP) frequencies, which “are based on industry experience.” However, Table 19.1-4 of the U.S. EPR FSAR indicates that the LBOP initiating event frequency is based on a “Lognormal fit to Design-specific fault-tree analysis.” Confirm how the LBOP initiating event frequency is quantified for the CCNPP Unit 3 PRA, and revise the FSAR accordingly. Revise the FSAR to include a quantitative discussion of how plant-specific features that could cause a LBOP event are bounded by the assumptions in the U.S. EPR PRA.

19-4

Table 19.1-4 of the U.S. EPR FSAR indicates that the loss of main condenser (LOC) and loss of main feedwater (LOMFw) initiating events are based on generic data from NUREG/CR-6928. Revise the FSAR to include a quantitative discussion of how plant-specific features that could cause a LOC or LOMFW event are bounded by the generic data used in the U.S. EPR PRA.

19-5

Discuss whether any plant-specific changes other than the NHS design have been made to the PRA models of the closed cooling water system (CLCWS) or auxiliary cooling water system (ACWS), as described in the AREVA NP response to Question 19-07 on the U.S. EPR design certification application.

19-6

Discuss how the plant-specific ultimate heat sink (UHS) support systems described in section 9.2.5.2 of the CCNPP Unit 3 FSAR are modeled in the CCNPP Unit 3 PRA. If the support systems are not modeled, demonstrate that the assumptions in the U.S. EPR PRA bound the plant-specific parameters and that there is no significant impact on the PRA results and insights.

19-7

Describe how the UHS makeup water intake structure ventilation system and UHS electrical building ventilation system are modeled in the CCNPP Unit 3 PRA. If failures of ventilation components are not modeled provide a quantitative justification for exclusion of these ventilation failures, with reference to failure probabilities, room heat-up assumptions, and operator actions that are possible. (Note that the AREVA NP responses to Questions 19-62 and 19-169 on the U.S. EPR design certification application address design-specific ventilation dependencies.)