Callaway2COLPEm Resource

From: Surinder Arora
Sent: Wednesday, February 04, 2009 4:37 PM
To: Shafer, David E
Cc: Callaway2COL Resource; Joseph Colaccino; Meena Khanna; Ann Hodgdon; Theresa Clark; Lynn Mrowca; NPUnit2-EPR@ameren.com; John Rycyna
Subject: RAI No. 1(eRAI No. 1839) - Public
Attachments: RAI 1839.doc

Dave,

Attached please find the subject request for additional information (RAI). A draft of this RAI was provided to you on January 21, 2009. 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 schedule date for submitting your technically correct and complete response will be provided to the staff within the 30 day period so that the staff can assess how this information will impact the review schedule.

Thanks.

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1/21/2009

Callaway Unit 2
AmerenUE
Docket No. 52-037
SRP Section: 19 - Probabilistic Risk Assessment and Severe Accident Evaluation
Application Section: 19.1

QUESTIONS for PRA Licensing, Operations Support and Maintenance Branch 1 (AP1000/EPR Projects) (SPLA)

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 19-8 of the Callaway Plant Unit 2 Final Safety Analysis Report (FSAR) states that “[t]he U.S. EPR PRA Loss of Offsite Power recovery probabilities bound Callaway Plant Unit 2 site-specific values.” However, the site-specific values were not provided. Revise the FSAR to include these site-specific values (both at power and during shutdown) and their source.

19-2

The discussion of the circulating water system (CWS) on page 19-8 of the 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 CWS and 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 Callaway Plant Unit 2 site.

19-3

Discuss whether additional plant-specific changes (other than the ability to use CWS pumps to cool turbine building equipment, as stated in the FSAR) 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.

19-4

Discuss how the plant-specific UHS support systems described in section 9.2.5.2 of the Callaway Plant Unit 2 FSAR are modeled in the Callaway Plant Unit 2 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.

19-5

Describe how the essential service water emergency makeup system (ESWEMS) pumphouse ventilation system is modeled in the Callaway Plant Unit 2 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.)

19-6

The response to Question 19-166 on the U.S. EPR FSAR includes a draft version of Table 19.1-109, which lists assumptions from the PRA. Footnote 2 to the table states that these assumptions will be reevaluated as part of the PRA maintenance and upgrade process and that combined license (COL) item 19.1-9 is provided to confirm that assumptions used in the PRA remain valid for the as-to-be-operated plant. Neither the proposed license condition related to COL item 19.1-9 nor the description of the maintenance and upgrade process in Section 19.1.2.4.1 of the Callaway Plant Unit 2 FSAR refers to this table in the U.S. EPR FSAR. Discuss how this table will be used to ensure that the Callaway Plant Unit 2 PRA reflects the as-to-be-built, as-to-be-operated plant. Revise the FSAR and license condition as appropriate.

19-7

Clarify whether the risk metrics resulting from the quantitative screening of external events described in Section 19.1.5 of the Callaway Plant Unit 2 FSAR are outputs of the at-power PRA or the PRA considering all modes of operation. If the at-power PRA was used, provide a similar discussion for external events that occur during shutdown so that the staff can conclude that the impact of external events on total core damage frequency (CDF) and large release frequency (LRF) is not significant.