

April 20, 2009

10 CFR 52.75

U.S. Nuclear Regulatory Commission
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ALNRC 00017



Subject: AmerenUE, Callaway Plant Unit 2 (NRC Docket No. 52-037)
Response to RAI No. 3 (eRAI 2305), Revision 0,
Section 19.1, Probabilistic Risk Assessment and Severe Accident
Evaluation

Reference: Surinder Arora (NRC) to David E. Shafer (AmerenUE), "RAI No. 3
(e-RAI No. 2305) - Public" email dated 3/24/09.

The purpose of this letter is to respond to the request for additional information (RAI) identified in the NRC e-mail correspondence to AmerenUE, dated 3/24/09 (reference). This RAI addresses the Probabilistic Risk Assessment and Severe Accident Evaluation as discussed in Section 19.1.4 of the Final Safety Analysis Report (FSAR), as submitted in Part 2 of the Callaway Plant Unit 2 Combined License Application (COLA).

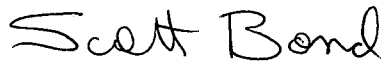
The response to NRC RAI No. 3, (eRAI No. 2305), Revision 0, question 19-8 is provided in Enclosure 1. This response does not include any new regulatory commitments. There are no COLA impacts associated with the response to this RAI question.

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If there are any questions regarding this transmittal, please contact Scott Bond at (573) 676-8519, SBond2@ameren.com or Dave Shafer at (573) 676-4722 DShafer@ameren.com.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on April 20, 2009



Scott M. Bond
Manager
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Enclosure: Response to NRC Request for Additional Information,
RAI No. 3, (eRAI No. 2305) – Public, Revision 0;
SRP Section 19 – Probabilistic Risk Assessment and Severe Accident
Evaluation Application Section: 19.1.4

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File code: A160.5761

Enclosure 1

**Response to NRC Request for Additional Information
RAI No. 3 (eRAI No. 2305) – Public, Revision 0**

-SRP Section: 19 – Probabilistic Risk Assessment and Severe Accident Evaluation
Application Section: 19.1.4

Question 19-8

(Follow-up to Question 19-2) The response to Question 19-2 provides additional information on the derivation of the failure frequency and probability for the circulating water system (CWS) and normal heat sink (NHS), represented by the undeveloped event "SUP UHS NS." The undeveloped event has a failure frequency of $1E-2$ per year (/yr) and a failure probability of $2.8E-5$ over a 24-hour mission time. However, it is unclear that these values bound all failure modes of the CWS and NHS. For example, the staff observes that the CWS has four 25-percent trains, and NUREG/CR-6928 indicates that the probability of a motor-driven pump failing to run over a 24-hour mission time may be as high as $1E-4$. Provide additional information (e.g., system design, success criteria for both initiating events and mitigating functions, failure probabilities) to demonstrate that the plant-specific CWS and NHS are bounded by the undeveloped event "SUP UHS NS."

Response:

As described in the response to RAI Set 1839, Question 19-2, the undeveloped event "SUP UHS NS" failure frequency of $1E-02$ per year is based on generic industry data from NUREG/CR-6928 and NUREG/CR-5750. This data provides the contribution of "problems related to the circulating water system: Loss of Non-safety-Related Cooling Water" to the Total Loss of Condenser Heat Sink initiating event.

The motor-driven pump failure to run probability stated in the question is not inconsistent with the failure probability for "SUP UHS NS" used in the Callaway Plant Unit 2 PRA. This is because a loss of one Circulating Water System (CWS) pump does not necessarily result in an initiating event, and a loss of one CWS pump does not prevent the CWS from being able to remove post-trip heat loads.

In addition, the CWS pumps are significantly different from any of the motor-driven pump types included in NUREG/CR-6928, Table A.2.27-8. FSAR Section 10.4.5 states that each CWS pump is approximately 201,700 gpm, and driven by a motor rated at approximately 9,600 horsepower.

The bounding nature of the data will be verified for the as-built as-to-be-operated plant. This verification is ensured by COL Item 19.0-1, which states that,

"The COL applicant that references the U.S. EPR design certification will either confirm that the PRA in the design certification bounds the site-specific design

information and any design changes or departures, or update the PRA to reflect the site-specific design information and any design changes or departures.”

The generic failure probability used for “SUP UHS NS” is therefore assumed to be applicable to Callaway Plant Unit 2.

As stated in the response to RAI Set 1839, Question 19-2, the Fussell-Vesely importance measure of the “SUP UHS NS” undeveloped event is $1.6E-05$. This shows that, even if the basic event “SUP UHS NS” failure probability during 24 hour mission time is to be increased 10 times, the total increase in the CDF will be smaller than 0.1%.

COL Impact

The Callaway Plant Unit 2 COLA will not be changed as a result of this question.