

May 29, 2009

10 CFR 52.75

U.S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
11555 Rockville Pike  
Rockville, MD. 20852



ALNRC 00030

Subject: AmerenUE, Callaway Plant Unit 2 (NRC Docket No. 52-037)  
Response to RAI No. 6 (eRAI 2381), Revision 0,  
SRP Section 03.04.02 – Analysis Procedures

Reference: Surinder Arora (NRC) to David E. Shafer (AmerenUE), "Final RAI  
No. 6 (eRAI 2381) - Public" email dated May 4, 2009.

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 May 4, 2009 (reference). This RAI is associated with the Ultimate Heat Sink Makeup Water Intake Structure Flooding Analysis as discussed in Section 3.4.3.10 of the Final Safety Analysis Report (FSAR), as submitted in Part 2 of the Callaway Plant Unit 2 Combined License Application (COLA).

Enclosure 1 provides our response to RAI No. 6 (eRAI 2381), Revision 0.

This response does not include any new regulatory commitments or contain proprietary information.

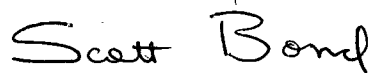
If there are any questions regarding this transmittal, please contact me at (573) 676-8519, SBond2@ameren.com or Dave Shafer at (573) 676-4722, DShafer@ameren.com.

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

Executed on May 29, 2009



Scott Bond  
Manager  
Nuclear Generation Development



SMB/RCW/slk

Enclosure:

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cc:

Mr. Elmo E. Collins, Jr.  
Regional Administrator  
U.S. Nuclear Regulatory Commission  
Region IV  
612 E. Lamar Blvd., Suite 400  
Arlington, TX 76011-4125

Senior Resident Inspector  
Callaway Resident Office  
U.S. Nuclear Regulatory Commission  
8201 NRC Road  
Steedman, MO 65077

Bruce Olson, P.E.  
Environmental Project Manager  
U.S. EPR Projects Branch  
Division of New Reactor Licensing  
Office of New Reactors  
Bruce.Olson@nrc.gov

Surinder Arora, P.E.  
Project Manager  
U.S. EPR Projects Branch  
Division of New Reactor Licensing  
Office of New Reactors  
Surinder.Arora@nrc.gov

Joseph Colaccino, Chief  
U.S. EPR Projects Branch  
Division of New Reactor Licensing  
Office of New Reactors  
Joseph.Colaccino@nrc.gov

Michael Miernicki  
Senior Project Manager  
U.S. EPR Projects Branch  
Division of New Reactor Licensing  
Office of New Reactors  
Michael.Miernicki@nrc.gov

Project Team/Others Distribution List

RACC Members Distribution List

File code: A160.5761

**Enclosure 1**

**Response to RAI No. 6 (eRAI 2381), Revision 0**

**03.04.02-1**

The ESWEMS Pumphouse is a Seismic Category I structure. Given the short gap between the Probable Maximum Precipitation (PMP) water level and the final grade level, it is important to understand the extent of the localized effects mentioned by the applicant in FSAR 3.4.3.10. Provide additional information regarding the localized effects of the PMP water level over the ESWEMS Pond, the Pumphouse, and each of the Seismic Category I structures. Explain the extent of the localized effects of the PMP with supportive technical basis, other than the information already included in FSAR 2.4.

Also, provide verification that the values of "Entrance Elevation (ft)" in FSAR Table 2.4-15 will prevent water from entering the safety related structures during all flood events.

In order for the staff to determine that the PMP water level will not compromise the ESWEMS Pumphouse safety functions, additional information is requested to demonstrate compliance with GDC-2 in 10 CFR 50, Appendix A.

**Response**

Results of a detailed site specific analysis provide peak water elevation values for localized flooding effects as shown in Callaway Plant Unit 2 FSAR Table 2.4-15. The values provide verification that water will not overtop the Nuclear Island, ESW Cooling Tower Structure and Emergency Power Generator Building access slab elevations of 846 ft or the ESWEMS Building access slab elevation of 840.50 ft. These peak water elevation values relate to the Probable Maximum Precipitation (PMP) event as discussed in Callaway Plant Unit 2 FSAR 2.4.2.3 rather than the Probable Maximum Flood (PMF) event.

The maximum flood level discussed in U.S. EPR FSAR 3.4.2, Table 2.1-1 and Callaway Plant Unit 2 FSAR Table 2.0-1 (one foot below grade) relate to Probable Maximum Flood (PMF) consistent with NUREG-0800, SRP 2.0 Appendix A. As discussed in Callaway Plant Unit 2 FSAR 2.4.2.2, the plant is located more than 133 ft (40.5 m) above the PMF peak water level for the Auxvasse, Mud, and Logan Creeks, and extreme floods on these tributary creeks would not affect the site.

Per confirmation with AREVA, flooding from external sources can occur from three possible sources: Probable Maximum Flood (PMF), Probable Maximum Precipitation (PMP), and flooding from large tanks. The US EPR standard plant outside yard grade is set at -1.0 ft from the access slab elevation with positive drainage sloping away from the site. The PMF design envelope elevation is set at -1.0 ft below yard grade (U.S. EPR FSAR 3.4.2 & Table 2.1-1) and the maximum groundwater level is set at -3.3 ft below yard grade. Converting these yard grade elevations would yield the PMF elevation at -2.0 ft and groundwater elevation at -4.3 ft, both below top of access slab elevation.

The groundwater elevation is the depth to groundwater and reflects what would be present with or without an event (flood or precipitation). The U.S. EPR site design envelope associated with a PMF is -1.0 ft in elevation. PMF peak values for Callaway Plant Unit 2 are well below this elevation as documented in FSAR Table 2.0-1.

The PMP event is rain that falls and is draining from the site. This PMP flood elevation is temporary and is postulated as being short enough in duration not to cause a sustained flood event that raises the effective groundwater level to the design flood elevation. In this circumstance, as long as precipitation does not enter the perimeter access slab locations for safety-related facilities then there is no flooding event.

In conclusion and as stated in Callaway Plant Unit 2 FSAR 2.4.2.3, the worst case PMP water elevations for the US EPR power block area, ESWEMS retention pond and the ESWEMS Pumphouse are 844.8 ft, 838.26 ft and 839.66 ft respectively, remain below the access slab elevations and will not compromise Seismic Category 1 structures or their safety functions.

### **COLA Impact**

The Callaway Plant Unit 2 FSAR does not require revision as a result of the response to this RAI question.