

June 8, 2009

10 CFR 52.75

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



ALNRC 00034

Subject: AmerenUE, Callaway Plant Unit 2 (NRC Docket No. 52-037)
Response to RAI No. 8 (eRAI 2478), Revision 0, SRP Section:
03.06.03 - Leak-Before-Break Evaluation Procedures

Reference:

- 1) Surinder Arora (NRC) to David E. Shafer (AmerenUE), "Final RAI No. 8 (eRAI 2478) - Public" email dated May 12, 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 12, 2009 (Reference 1). This RAI is associated with the Leak-Before-Break Evaluation discussion provided in Final Safety Analysis Report (FSAR) Section 3.6.3 of the Callaway Plant Unit 2 Combined License Application (COLA).

Enclosure 1 provides our response to RAI No. 8 (eRAI 2478), 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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KRD

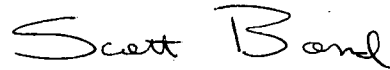
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I declare under penalty of perjury that the foregoing is true and correct.

Executed on June 8, 2009

A handwritten signature in black ink that reads "Scott Bond". The signature is written in a cursive style with a large, prominent "B".

Scott M. Bond
Manager, Nuclear Generation
Development

SMB/RCW/slk

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Enclosure 1

Enclosure 1

Response to RAI No. 8 (eRAI 2478), Revision 0

Response to RAI No. 8 (eRAI 2478) – Public, Revision 0

Question 03.06.03-1

Chapter 3.6.3 of the applicant's FSAR states that "{Ameren UE} shall confirm that the design Leak-Before-Break (LBB) analysis remains bounding for each piping system." Please provide as-designed LBB analyses for each LBB piping system prior to COL issuance or provide justification for concluding that the as-designed LBB analyses remain bounding for each piping system.

Response:

In accordance with the COL applicant item action from FSAR Chapter 3.6.3, AmerenUE confirms that the design Leak-Before-Break analysis remains bounding for each piping system. The justification for reaching the conclusion that the as-designed LBB analysis remains bounding for each piping system is given below and is based on analysis performed by AREVA for AmerenUE.

The Callaway Plant Unit 2 site-specific application of LBB to the main coolant loop, surge line and main steam line is evaluated by comparing the loads resulting from the Callaway Plant Unit 2 site-specific Ground Motion Response Spectra/Foundation Input Response Spectra (GMRS/FIRS) and site-specific soil profiles combined with normal operating loads with the U.S. EPR LBB allowable range of loadings.

The main coolant loop loads are compared at the Reactor Pressure Vessel (RPV) inlet nozzle, RPV outlet nozzle, steam generator inlet nozzle, steam generator outlet nozzle, reactor coolant pump outlet nozzle, reactor coolant pump inlet nozzle, hot leg piping, cold leg piping, and crossover leg piping. The most highly loaded locations are the RPV outlet nozzle region and steam generator inlet nozzle region. The Callaway Plant Unit 2 site-specific main coolant loop loads are confirmed to lie within the U.S. EPR design certification allowable load limit LBB curves.

The main steam line loads are compared at the steam generator outlet nozzle and main steam line piping. The most highly loaded location is in the main steam line piping. The Callaway Plant Unit 2 site-specific main steam line loads are confirmed to lie within the U.S. EPR design certification allowable load limit LBB curves.

The surge line loads are compared at the pressurizer nozzle, hot leg nozzle, and surge line piping. The pressurizer nozzle, hot leg nozzle, and certain sections of the surge line piping are the most highly loaded locations in the surge line. The Callaway Plant

Unit 2 site specific surge line loads are confirmed to lie within the U.S. EPR design certification allowable load limit LBB curves.

The Callaway Plant Unit 2 site-specific application of LBB to the main coolant loop, surge line, and main steam line is confirmed because the site-specific main coolant loop, surge line, and main steam line loads are confirmed to lie within the U.S. EPR design certification allowable load limit LBB curves.

COLA Impact

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

Question 03.06.03-2

The EPR LBB generic design has had difficulty meeting the staff's safety factor of 2 on dynamic loadings and AREVA was proposing to use a safety factor of 1.7. In recent developments for the EPR generic design to envelope all current sites' seismic loadings, AREVA is proposing to revise its generic seismic design response spectra. This could cause an increase in seismic loadings, thereby impacting the LBB design and possibly causing a further decrease in the LBB dynamic loading safety factor.

Please provide an analysis or evaluation that demonstrates that the main steam piping inside containment meets the safety factor of 2 using site specific seismic response spectra.

Response:

The evaluation discussed in the above response to question 03.06.03-1 describes why Callaway Plant Unit 2 site-specific main steam line loads associated with the main steam line piping inside containment lie within the U.S. EPR design certification allowable load limit LBB curves. Based on the conclusion that the Callaway Plant Unit 2 loads lie within the U.S. EPR design certification allowable loads, Callaway Plant Unit 2 site specific application of LBB to the main steam line piping inside containment is confirmed.

The Callaway Plant Unit 2 site-specific analysis is discussed in Callaway Plant Unit 2 FSAR Section 2.5.2.6.6 to demonstrate that the main steam piping inside containment meets the criteria and safety factor for LBB as described in the U.S. EPR DCD. AREVA has also verified that a minimum safety factor of 2.0 is met by

the Callaway Plant Unit 2 site specific analysis for the main steam line piping inside containment.

The RAI question also acknowledges plans within the U.S. EPR design center to update the generic seismic design response spectra such that the current U.S. EPR COL applicants will be bounded within the U.S. EPR DCD seismic analysis.

On 6/2/09, during a meeting of the U.S. EPR Design Centered Working Group (DCWG), AREVA updated the NRC Staff on the DCWG plans to bound the current U.S. EPR COL Applicant GMRS within the U.S. EPR design certification. The schedule for completing this analysis and providing an update to the U.S. EPR FSAR is targeted for October, 2009.

At this meeting, AmerenUE committed to describe to the Staff by June 30, 2009, which Callaway Plant Unit 2 FSAR sections would be impacted by this proposed change to the U.S. EPR FSAR. Providing this information will clarify which Callaway Plant Unit 2 FSAR sections will be affected by the change. AmerenUE also committed to provide supplemental information for the Callaway SCOLA soon after the AREVA update targeted for October, 2009.

COLA Impact

The Callaway Plant Unit 2 COLA does not require revision as a result of the response to this RAI question. It is noted that the Callaway Plant Unit 2 FSAR will be revised after the Callaway Plant Unit 2 ground motion response spectra is bounded by the updated U.S. EPR design certification.