

June 8, 2009

10 CFR 52.75

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

ALNRC 00033



Subject: AmerenUE, Callaway Plant Unit 2 (NRC Docket No. 52-037)  
Response to RAI No. 17 (eRAI 2683), Revision 0, SRP Section 5.3.3-  
Reactor Vessel Integrity

Reference:

- 1) Surinder Arora (NRC) to David E. Shafer (AmerenUE), "Final RAI No. 17 (eRAI 2683) - Public" email dated May 21, 2009
- 2) UN#09-156, UniStar Nuclear Energy, NRC Docket No. 52-016, Response to Request for Additional Information for the Calvert Cliffs Nuclear Power Plant, Unit 3, RAI No. 77, Reactor Vessel Integrity, dated March 27, 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 21, 2009 (Reference 1). This RAI addresses the Reactor Vessel Integrity as discussed in Section 5.3.3 of the Final Safety Analysis Report (FSAR), as submitted in Part 2 of the Callaway Plant Unit 2 Combined License Application (COLA).

The same RAI question was addressed to Calvert Cliffs Nuclear Power Plant Unit 3 which is the Reference COLA for the U.S. EPR Design Center. UniStar Nuclear Energy provided a response to this RAI question for Calvert Cliffs Nuclear Power Plant Unit 3 in Reference 2.

Callaway Plant Unit 2 accepts and endorses the same response provided in Reference 2 for Callaway Plant Unit 2. Enclosure 1 provides the proposed Callaway Plant Unit 2 COLA markups associated with the response to this RAI question. The Callaway Plant Unit 2 FSAR and COLA Part 10: Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC) and ITAAC Closure will be revised in a future COLA

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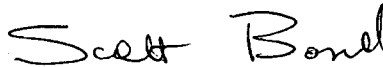
revision to formally incorporate the proposed changes identified in this RAI response.

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

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.

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

Executed on June 8, 2009



Scott M. Bond  
Manager, Nuclear Generation  
Development

SMB/AML/slk

Enclosure:

1. Callaway Plant Unit 2 FSAR and ITAAC Changes in Response to RAI No. 17 (eRAI 2683)

cc:

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Enclosure 1

**Enclosure 1**

**Callaway Plant Unit 2 FSAR and ITAAC Changes in Response to RAI No.  
17 (eRAI 2683)**

**Table 1.1-1—(Acronyms Used in this Document)**

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PMWP	Probable Maximum Winter Precipitation
PP	Pocket Penetrometer
PPA	Power Purchase Agreement
PPE	Plant Parameter Envelope
PPM	Parts per Million
PPRP	Power Plant Research Program
PPT	Part per Thousand
PRA	Probabilistic Risk Assessment
PRB	Powder River Basin
PSAR	Preliminary Safety Analysis Report
PSC	Public Service Commission
PSD	Prevention of Significant Deterioration
PSHA	Probabilistic Seismic Hazard Analysis
PSP	Physical Security Plan
PSS	Palustrine Scrub Shrub Wetlands
PSSE	Power System State Estimation
PST	Pre-Service Testing
PSWS	Potable and Sanitary Water System
PTC	Production Tax Credit
PTLR	Pressure and Temperature Limits Report
PTS	Pressurized Thermal Shock
PUB	Palustrine Unconsolidated Bottom
PV	Photovoltaic
PVC	Polyvinyl Chloride
PWR	Pressurized Water Reactor
PWSD	Public Water Supply District
QAPD	Quality Assurance Program Description
QC	Quality Control
QSL	Qualified Suppliers List
R	Radiation Exposure
RAP	Reliability Assurance Program
RAW	Risk Achievement Worth
RB	Reactor Building
RC	Release Consequence or Resonant Column
RCA	Radiologically Controlled Area
RCRA	Resource Conservation and Recovery Act
RCS	Reactor Coolant System
RCTS	Resonant Column Torsional Shear
RCx	Retro-Commissioning
RD	Rupture Disk Valve
REA	Rod Ejection Accident
REMP	Radiological Environmental Monitoring Program
RERP	Radiological Emergency Response Plan
RETS	Radiological Effluent Technical Specifications
RF	Reelfoot Fault
RFC	Requests for Clarification
RG	Regulatory Guide
RIMS	Regional Input-Output Modeling System
RLE	Review Level Earthquake
RMS	Records Management System

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A COL applicant that references the U.S. EPR design certification will identify the implementation milestones for the material surveillance program.

This COL Item is addressed as follows:

The implementation milestones for the Reactor Vessel material surveillance program are provided in Table 13.4-1.

#### 5.3.1.7 Reactor Vessel Fasteners

No departures or supplements.

### 5.3.2 PRESSURE-TEMPERATURE LIMITS, PRESSURIZED THERMAL SHOCK, AND CHARPY UPPER-SHELF ENERGY DATA AND ANALYSES

No departures or supplements.

#### 5.3.2.1 Pressure-Temperature Limit Curves

The U.S. EPR FSAR includes the following COL Holder Item in Section 5.3.2.1:

A COL applicant that references the U.S. EPR design certification will provide a plant-specific pressure and temperature limits report (PTLR), consistent with an approved methodology.

This COL Holder Item is addressed as follows:

A plant-specific PTLR will be provided in accordance with {Callaway Plant Unit 2} Technical Specification 5.6.4, "Reactor Coolant System (RCS) PRESSURE AND TEMPERATURE LIMITS REPORT (PTLR)," and will be based on the methodology provided in ANP-10283P (AREVA, 2007).

#### 5.3.2.2 Operating Procedures

No departures or supplements.

#### 5.3.2.3 Pressurized Thermal Shock

No departures or supplements.

#### 5.3.2.4 Upper-Shelf Energy

No departures or supplements.

### 5.3.3 REACTOR VESSEL INTEGRITY

No departures or supplements. The information in this subsection is incorporated by reference with no departures and the following supplement:

The plant-specific pressurized thermal shock (PTS) evaluation will be submitted to the NRC within one year of acceptance of the reactor vessel by the licensee.

### 5.3.4 REFERENCES

{AREVA, 2007. Reactor Coolant System (RCS) Pressure and Temperature Limits Report (PTLR), ANP-10283P, AREVA NP, 2007.}

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- d. indicate the corrective action taken to preclude repetition of the event and to prevent similar occurrences involving similar site preparation and preliminary construction activities, and
- e. indicate the agencies notified and their preliminary responses.

For events reportable under this subsection that also require reports to other Federal, State or local agencies, the licensee shall report in accordance with those reporting requirements in lieu of the requirements of this subsection. The licensee shall provide the NRC with a copy of such report at the same time it submits it to the other agency.

**10. PLANT SPECIFIC TECHNICAL SPECIFICATIONS**

The Generic Technical Specifications provided Limiting Trip Setpoints that cannot be determined until after the COL is issued.

**PROPOSED LICENSE CONDITION:**

TS 3.3.1 {Callaway Plant Unit 2} shall submit a license amendment following completion of a plant-specific setpoint study following selection of the plant-specific instrumentation. This amendment shall update Table 3.3.1-2 and the associated Bases to provide plant-specific setpoint information.

**11. REACTOR VESSEL INTEGRITY**

COL application FSAR Section 5.3.3 requires submittal of the plant-specific pressurized thermal shock (PTS) evaluation to the NRC within one year of acceptance of the reactor vessel by the licensee.

PROPOSED LICENSE CONDITION:

The plant - specific PTS evaluation will be submitted to the NRC within one year of acceptance of the reactor vessel by the licensee.

LBDCR09-0111

Greg Gibson  
Vice President, Regulatory Affairs

250 West Pratt Street, Suite 2000  
Baltimore, Maryland 21201



10 CFR 50.4  
10 CFR 52.79

March 27, 2009

UN#09-156

A handwritten signature in black ink, appearing to read "Greg Gibson", is written over the right side of the page.

ATTN: Document Control Desk  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

Subject: UniStar Nuclear Energy, NRC Docket No. 52-016  
Response to Request for Additional Information for the  
Calvert Cliffs Nuclear Power Plant, Unit 3,  
RAI No. 77, Reactor Vessel Integrity

References: 1) John Rycyna (NRC) to Robert Poche (UniStar), "RAI No 77 CIB1 1541.doc  
(PUBLIC)", email dated March 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 UniStar Nuclear, dated March 12, 2009 (Reference 1). This RAI addresses Reactor Vessel Integrity, as discussed in Section 5.3.3 of the Final Safety Analysis Report (FSAR), as submitted in Part 2 of the Calvert Cliffs Nuclear Power Plant (CCNPP) Unit 3 Combined License Application (COLA), Revision 4.

The enclosure provides our response to RAI No 77, Question 05.03.03-1, which includes revised COLA content. A Licensing Basis Document Change Request has been initiated to incorporate this change in a future revision of the COLA. Our response to Question 05.03.03-1 adds a new COL Item to FSAR Section 5.3.3; otherwise, there are no new regulatory commitments.

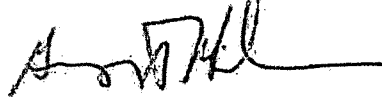
If there are any questions regarding this transmittal, please contact me at (410) 470-4205, or Mr. Michael J. Yox at (410) 495-2436.



UN#09-156  
March 27, 2009  
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*I declare under penalty of perjury that the foregoing is true and correct.*

Executed on March 27, 2009



Greg Gibson

Enclosure: Response to NRC Request for Additional Information, RAI No. 77, Reactor Vessel Integrity, Calvert Cliffs Nuclear Power Plant Unit 3

cc: John Rycyna, NRC Project Manager, U.S. EPR COL Application  
Getachew Tesfaye, NRC Project Manager, U.S. EPR DC Application (w/o enclosure)  
Thomas Fredrichs, NRC Environmental Project Manager, U.S. EPR COL Application  
Loren Plisco, Deputy Regional Administrator, NRC Region II (w/o enclosure)  
Silas Kennedy, U.S. NRC Resident Inspector, CCNPP, Units 1 and 2  
U.S. NRC Region I Office

**Enclosure**

**Response to NRC Request for Additional Information,  
RAI No. 77, Reactor Vessel Integrity,  
Calvert Cliffs Nuclear Power Plant Unit 3**

**RAI No. 77**

**Question 05.03.03-1**

The as-procured reactor vessel material properties will be available to the COL holder after the acceptance of the reactor vessel. In order to provide sufficient time for NRC review of the RTPTS evaluation using the as-procured reactor vessel material properties, the staff requests that a more specific and timely milestone for submitting the PTS evaluation to the NRC be established. Therefore, the staff requests that a license condition be added in Section 5.3.3 to state that within a reasonable period of time following acceptance of the reactor vessel (e.g., 1 year after the acceptance of the reactor vessel), the COL holder shall submit to the NRC staff its plant-specific PTS evaluation.

**Response**

The CCNPP Unit 3 COLA will be updated to include a license condition requiring submittal of the plant-specific Pressurized Thermal Shock (PTS) evaluation to NRC staff within one year of acceptance of the reactor vessel by the licensee.

**COLA Impact**

COLA Part 2 (FSAR) Section 5.3.3 will be revised to include the following supplement:

**5.3.3 REACTOR VESSEL INTEGRITY**

~~No departures or supplements.~~ The information in this subsection is incorporated by reference with no departures and the following supplement:

The plant-specific pressurized thermal shock (PTS) evaluation will be submitted to the NRC within one year of acceptance of the reactor vessel by the licensee.

COLA Part 10 (ITAAC) will add the following item to the end of Appendix A (Proposed Combined License Conditions):

**11. REACTOR VESSEL INTEGRITY**

COL application FSAR Section 5.3.3 requires submittal of the plant-specific pressurized thermal shock (PTS) evaluation to the NRC within one year of acceptance of the reactor vessel by the licensee.

**PROPOSED LICENSE CONDITION**

The plant-specific PTS evaluation will be submitted to the NRC within one year of acceptance of the reactor vessel by the licensee.