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July 18, 2012

UN#12-070

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 357, Pressure-Temperature Limits, Upper-Shelf Energy, and Pressurized  
Thermal Shock

- References:
- 1) Surinder Arora (NRC) to Paul Infanger (UniStar Nuclear Energy), "CCNPP3 - Final RAI 357 CIB 6518," dated June 18, 2012
  - 2) UniStar Nuclear Energy Letter UN#09-469, from Greg Gibson to Document Control Desk, U.S. NRC, Response to Request for Additional Information for the Calvert Cliffs Nuclear Power Plant, Unit 3, RAI 186, Pressure-Temperature Limits, Upper-Shelf Energy, and Pressurized Thermal Shock, dated October 30, 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 Energy, dated June 18, 2012 (Reference 1). This RAI addresses Pressure-Temperature Limits, Upper-Shelf Energy, and Pressurized Thermal Shock, as discussed in Section 5.3.2 of the Final Safety Analysis Report (FSAR), as submitted in the Calvert Cliffs Nuclear Power Plant (CCNPP) Unit 3 Combined License Application (COLA), Revision 8.

Enclosure 1 provides our response to RAI No. 357, Question 05.03.02-3, and includes revised COLA content. Licensing Basis Document Change Requests have been initiated to incorporate these changes into a future revision of the COLA.

This response to RAI 357 Question 05.03.02-3 revises text in a paragraph of COLA FSAR Section 5.3.2.1, "Pressure-Temperature Limit Curves," COLA FSAR Section 5.3.4, "References," and COLA Part 10: Inspections, Tests, Analyses, and Acceptance Criteria

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(ITAAC), that was previously provided in the response to RAI 186 (Reference 2). This RAI 357 response supersedes the response to RAI 186 in its entirety.

Enclosure 2 provides a table of changes to the CCNPP Unit 3 COLA associated with the RAI 357 response.

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

If there are any questions regarding this transmittal, please contact me at (410) 369-1907 or Mr. Wayne A. Massie at (410) 369-1910.

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

Executed on July 18, 2012



Mark T. Finley

Enclosures: 1) Response to NRC Request for Additional Information RAI No. 357, Question 05.03.02-3, Pressure-Temperature Limits, Upper-Shelf Energy, and Pressurized Thermal Shock, Calvert Cliffs Nuclear Power Plant, Unit 3

2) Table of Changes to CCNPP Unit 3 COLA Associated with the Response to RAI No. 357, Calvert Cliffs Nuclear Power Plant, Unit 3

cc: Surinder Arora, NRC Project Manager, U.S. EPR Projects Branch  
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Getachew Tesfaye, NRC Project Manager, U.S. EPR DC Application, (w/o enclosures)  
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bcc: Jon Kirkwood, Bell Bend Licensing  
Sebastien Thomas, NI Engineering Manager, Regulatory Affairs & Engineering

**Enclosure 1**

**Response to NRC Request for Additional Information RAI No. 357,  
Question 05.03.02-3, Pressure-Temperature Limits, Upper-Shelf Energy,  
and Pressurized Thermal Shock,  
Calvert Cliffs Nuclear Power Plant, Unit 3**

**RAI No. 357**

**NRC Question 05.03.02-3**

In a letter dated April 13, 2012, AREVA submitted revised technical report, ANP-10283P, Revision 2, which contains the pressure and temperature (P-T) limit curves based on bounding material properties, and a generic pressure and temperature limits report (PTLR) following the guidelines of Generic Letter 96-03.

The staff requests that the COL applicant confirm the use of the methodology provided in the latest revision of the generic PTLR for the U.S. EPR design (provided by AREVA in technical report ANP-10283P, Rev.2) and revise the Calvert Cliffs Unit 3 R-COLA accordingly.

**Response**

UniStar Nuclear Energy confirms the use of the methodology provided in the latest revision of the generic pressure and temperature limits report (PTLR) for the U.S. EPR design provided in technical report ANP-10283P, Rev. 2<sup>1</sup>.

Calvert Cliffs Nuclear Power Plant (CCNPP) Unit 3 Combined License Application (COLA) Part 2 FSAR Sections 5.3.2.1, 5.3.4, and CCNPP Unit 3 COLA Part 10: Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC) are being revised to refer to technical report ANP-10283P, Rev. 2.

**COLA Impact**

CCNPP Unit 3 FSAR Chapter 5 will be updated as follows in a future COLA revision:

**5.3.2.1 Pressure-Temperature Limit Curves**

The U.S. EPR FSAR includes the following COL 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 Item is addressed as follows:

A plant-specific PTLR will be provided in accordance with {CCNPP Unit 3} 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, Revision 42 (AREVA, 2009~~12~~), prior to initial fuel load.

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<sup>1</sup> AREVA NP Inc. letter NRC:12:021 (ADAMS Document No. ML12187A027) from Pedro Salas to Document Control Desk (NRC), ANP-10283P, "U.S. EPR Pressure-Temperature Limits Methodology for RCS Heatup and Cooldown," Revision 2, dated April 13, 2012

#### **5.3.4 References**

~~{AREVA, 200912. U.S. EPR Pressure-Temperature Limits Methodology for RCS Heatup and CooldownReactor Coolant System (RCS) Pressure and Temperature Limits Report (PTLR), ANP-10283P, Revision 42, AREVA NP, 200912.}~~

CCNPP Unit 3 COLA Part 10 (ITAAC) Appendix A, COL Items, (COL Item 5.3-2) will be updated as follows in a future COLA revision:

##### COL Item 5.3-2 in Section 5.3.2.1

A plant-specific Pressure and Temperature Limits Report shall be provided in accordance with {CCNPP Unit 3} Technical Specification 5.6.4, "Reactor Coolant System (RCS) PRESSURE AND TEMPERATURE LIMITS REPORT (PTLR)," and shall be based on the methodology provided in ANP-10283P, Revision 42, prior to initial fuel load.

**Enclosure 2**

**Table of Changes to CCNPP Unit 3 COLA Associated with Response to RAI No. 357,  
Calvert Cliffs Nuclear Power Plant, Unit 3**

**Table of Changes to CCNPP Unit 3 COLA Associated with Response to RAI No. 357**

<b>Change ID #</b>	<b>Subsection</b>	<b>Type of Change</b>	<b>Description of Change</b>
<b>Part 2 – FSAR</b>			
GN-09-0366	5.3.2.1, 5.3.4	Incorporate COLA changes for DCD Rev. 2 and RAI 186.	Revised COLA sections to reference Revision 1 of ANP-10283P.
GN-12-0138	5.3.2.1, 5.3.4	Incorporate COLA markups associated with the response to RAI 357.	<p>The response to RAI 357 included a change to the revision number of technical report ANP-10283P. Revision 2 of the technical report is reflected in FSAR Sections 5.3.2.1 and 5.3.4.</p> <p>The response to RAI 357 Question 05.03.02-3 revises text in COLA FSAR Section 5.3.2.1 and 5.3.4, which was previously provided in the response to RAI 186 (transmitted by UniStar Nuclear Energy letter UN#09-469, dated October 30, 2009).</p>
<b>Part 10 – ITAAC</b>			
GN-09-0366	Appendix A, COL Items	Incorporate COLA changes for DCD Rev. 2 and RAI 186.	Revised COLA sections to reference Revision 1 of ANP-10283P.
GN-12-0138	Appendix A, COL Items	Incorporate COLA markups associated with the response to RAI 357.	<p>The response to RAI 357 included a change to the revision number of technical report ANP-10283P. Revision 2 of the technical report is reflected in COLA Part 10, Appendix A, COL Items (COL Item 5.3-2).</p> <p>The response to RAI 357 Question 05.03.02-3 revises text in COLA Part 10, Appendix A, COL Items (COL Item 5.3-2), that was previously provided in the response to RAI 186 (transmitted by UniStar Nuclear Energy letter UN#09-469, dated October 30, 2009).</p>