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10 CFR 50.4  
10 CFR 52.79

November 20, 2013

UN#13-143

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

Subject: UniStar Nuclear Energy, NRC Docket No. 52-016  
Updated Response to Request for Additional Information for the  
Calvert Cliffs Nuclear Power Plant, Unit 3,  
RAI 380, Offsite Power System

- References:
- 1) Surinder Arora (NRC) to Paul Infanger (UniStar Nuclear Energy), "CCNPP3 - Final RAI 380 EEB 6829," dated October 31, 2012
  - 2) UniStar Nuclear Energy Letter UN#13-089, from Mark T. Finley to Document Control Desk, U.S. NRC, Response to Request for Additional Information for the Calvert Cliffs Nuclear Power Plant, Unit 3, RAI 380, Offsite Power System, dated July 26, 2013

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 October 31, 2012 (Reference 1). This RAI addresses the Offsite Power System, as discussed in Section 8.2 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 9.

Reference 2 indicated provided a response to RAI 380, Question 08.02-11. Enclosure 1 provides our updated response to RAI 380, Question 08.02-11, which supersedes the response provided by Reference 2 in its entirety, and includes revised COLA content. A Licensing Basis Document Change Request has been initiated to incorporate these changes into a future revision of the COLA.

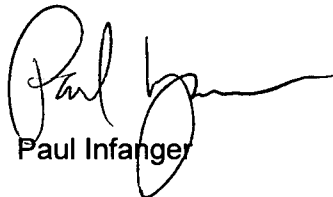
Enclosure 2 provides a table of changes to the CCNPP Unit 3 COLA associated with the RAI 380, Question 08.02-11. As identified in the Enclosure 2, Table of Changes, this response modifies a previously submitted RAI response.

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NRD

If there are any questions regarding this transmittal, please contact me at (410) 369-1987 or Mr. Mark Finley at (410) 369-1907.

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

Executed on November 20, 2013



Paul Infanger

- Enclosures:
- 1) Updated Response to NRC Request for Additional Information RAI 380, Question 08.02-11, Offsite Power System, Calvert Cliffs Nuclear Power Plant, Unit 3
  - 2) Table of Changes to CCNPP Unit 3 COLA Associated with the Updated Response to RAI 380, Question 08.02-11, Calvert Cliffs Nuclear Power Plant, Unit 3

cc: Surinder Arora, NRC Project Manager, U.S. EPR Projects Branch  
Tomeka Terry, NRC Environmental Project Manager, U.S. EPR COL Application  
Laura Quinn-Willingham, NRC Environmental Project Manager, U.S. EPR COL Application  
Amy Snyder, NRC Project Manager, U.S. EPR DC Application, (w/o enclosures)  
Patricia Holahan, Acting Deputy Regional Administrator, NRC Region II, (w/o enclosures)  
Silas Kennedy, U.S. NRC Resident Inspector, CCNPP, Units 1 and 2  
David Lew, Deputy Regional Administrator, NRC Region I (w/o enclosures)

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**Enclosure 1**

**Updated Response to NRC Request for Additional Information  
RAI 380, Question 08.02-11,  
Offsite Power System,  
Calvert Cliffs Nuclear Power Plant, Unit 3**

**RAI No. 380**

**Question 08.02-11**

On July 27, 2012, the NRC issued Bulletin 2012-01, "Design Vulnerability in Electric Power System," (Agencywide Documents Access and Management System (ADAMS) Accession Number ML12074A115) to all holders of operating licenses and combined licenses for nuclear power reactors requesting information about the facilities' electric power system designs, in light of the recent operating experience that involved the loss of one of the three phases of the offsite power circuit (single-phase open circuit condition) at Byron Station, Unit 2 to verify compliance with applicable regulations and to determine if further regulatory action is warranted.

In order to verify that the applicants of new reactors have addressed the design vulnerability identified at Byron in accordance with the requirements specified in General Design Criterion (GDC) 17, "Electric Power Systems," in Appendix A, "General Design Criteria for Nuclear Power Plants," and the design criteria for protection systems under 10 CFR 50.55a(h)(3), please provide the following information:

- Describe the protection scheme design for important to safety buses (31-34BDA) to detect and automatically respond to a single-phase open circuit condition or high impedance ground fault condition on credited offsite power circuits.
- If the important to safety buses are not powered by offsite power sources during at power condition, explain how the surveillance tests (e.g., SR 3.8.1.1) are performed to verify that a single-phase open circuit condition or high impedance ground fault condition on an off-site power circuit is detected.
- Describe the plant operating procedures including off-normal operating procedures, specifically call for verification of the voltages on all three phases of the ESF buses?

**Response:**

**First Bullet:**

The protection scheme design for the buses is addressed in AREVA's response<sup>1</sup> to U.S. EPR request for additional information (RAI) 564. Calvert Cliffs Nuclear Power Plant (CCNPP) Unit 3 Combined License Application (COLA) incorporates the AREVA response by reference.

**Second Bullet:**

The four 6.9kV Emergency Power Supply System (EPSS) buses are always powered by the Emergency Auxiliary Transformers (EATs) via at least two offsite circuits, as stated in the AREVA response<sup>1</sup>.

**Third Bullet:**

This bullet is addressed by the CCNPP Unit 3 COLA revision, as shown in the COLA Impact section of this response, which addresses the addition of COL Item 8.2-9 as discussed in AREVA's response<sup>1</sup> to U.S. EPR RAI 564.

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<sup>1</sup> Nathan Hottle (AREVA) to Michael Miernicki (NRC), "Response to U.S. EPR Design Certification Application RAI No. 564 (6901), FSAR Ch. 8, Supplement 4", email dated October 25, 2013

## COLA Impact

CCNPP Unit 3 COLA Part 2, FSAR, Section 8.2.2.4 has been updated as follows:

8.2.2.4 Compliance with GDC 17

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### FMEA Conclusion

The finding of this FMEA analysis is that there are no single failures which would cause the simultaneous failure of both preferred sources of offsite power.}

The U.S. EPR FSAR includes the following COL Item in Section 8.2.2.4:

A COL applicant that references the U.S. EPR design certification will describe essential elements of a program for the operation, setpoint determination, and surveillance testing of the Phase Monitoring System for the GDC 17 off-site power feeds to address NRC Bulletin 2012-01.

This COL Item is addressed as follows:

The essential elements of the program for the operation, setpoint determination, and surveillance testing of the Phase Monitoring System are:

- Procedures addressing the operation and maintenance of the Phase Monitoring System, including:
  - o Normal operation
  - o Abnormal operation
  - o Alarm response
  - o Calibration/setpoint
  - o Diagnostic/trouble-shooting
- The setpoints of the Phase Monitoring Systems are determined as part of the analysis performed to meet the U.S. EPR Tier 1, ITAAC Table 2.5.5-1, Item 4.1
- Control room operator and maintenance technician training programs, which address the operation and maintenance of the Phase Monitoring System.

**Enclosure 2**

**Table of Changes to CCNPP Unit 3 COLA  
Associated with the Updated Response to  
RAI 380, Question 08.02-11,  
Calvert Cliffs Nuclear Power Plant, Unit 3**

**Table of Changes to CCNPP Unit 3 COLA  
 Associated with the Response to RAI No. 380**

<b>Change ID #</b>	<b>Subsection</b>	<b>Type of Change</b>	<b>Description of Change</b>
<b>Part 2 – FSAR</b>			
GN-13-0119	8.2.2.4	Incorporated COLA markups associated with the response to RAI 380, Question 08.02-11 <sup>2</sup> .	A COL Item and response, was added to address the Phase Monitoring System as part of the RAI 380, Question 08.02-11 <sup>2</sup> response.
GN-13-0139	8.2.2.4	Incorporated COLA markups associated with the updated response to RAI 380, Question 08.02-11 (this response).	A revised COL Item and updated response, was added to address the Phase Monitoring System as part of the RAI 380, Question 08.02-11. This response supersedes the previous response in footnote 2 below in its entirety.

<sup>2</sup> UniStar Nuclear Energy Letter UN#13-089, from Mark T. Finley to Document Control Desk, U.S. NRC, Response to Request for Additional Information for the Calvert Cliffs Nuclear Power Plant, Unit 3, RAI 380, Offsite Power System, dated July 26, 2013