



10 CFR 50.4
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June 21, 2012

UN#12-054

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 333, Other Seismic Category I Structures

- References:
- 1) Surinder Arora (NRC) to Paul Infanger (UniStar Nuclear Energy), "FINAL RAI 333 SEB2 6214, dated January 20, 2012
 - 2) UniStar Nuclear Energy Letter UN#12-044, from Mark T. Finley to Document Control Desk, U.S. NRC, Response to Requests for Additional Information for the Calvert Cliffs Nuclear Power Plant, Unit 3: RAI 325, Information Systems Important to Safety, RAI 328, Flooding Protection Requirements, RAIs 287, 330, RAI 331, RAI 332, RAI 336, Ultimate Heat Sink, RAIs 333, 339, Other Seismic Category I Structures, RAI 337, Initial Plant Test Program – Design Certification and New License Applicants, and RAI 340, Functional Design Qualification and Inservice Testing Programs for Pumps, Valves, and Dynamic Restraints, dated May 18, 2012
 - 3) UniStar Nuclear Energy Letter UN#10-193, from Greg Gibson to Document Control Desk, U.S. NRC, Response to Requests for Additional Information for the Calvert Cliffs Nuclear Power Plant, Unit 3, RAI 144, Other Seismic Category I Structures, and RAI No. 145, Foundations, dated July 23, 2010
 - 4) UniStar Nuclear Energy Letter UN#11-258, 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 301, Other Seismic Category I Structures, dated September 22, 2011

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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 January 20, 2012 (Reference 1). This RAI addresses Other Seismic Category I Structures, as discussed in Section 3.8 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.

Reference 2 indicated that a response to RAI 333, Question 03.08.04-30, would be provided to the NRC by June 22, 2012. Enclosure 1 provides our response to RAI No. 333, Question 03.08.04-30, 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.

This response to RAI 333 Question 03.08.04-30 revises text in a paragraph of COLA FSAR Section 3.8.5.5, "Structural Acceptance Criteria" relative to other Category I Structures waterproofing and dampproofing, that was previously provided in the response to RAIs 144 and 145 (Reference 3). This revised text is also consistent with the information provided in the response to RAI 301 (Reference 4), which similarly addressed other Category I Structures waterproofing and dampproofing.

Enclosure 2 provides a table of changes to the CCNPP Unit 3 COLA associated with the RAI 333 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 June 21, 2012



Mark T. Finley

Enclosures: 1) Response to NRC Request for Additional Information RAI No. 333, Question 03.08.04-30, Other Seismic Category I Structures, Calvert Cliffs Nuclear Power Plant, Unit 3

2) Table of Changes to CCNPP Unit 3 COLA Associated with the Response to RAI No. 333, Calvert Cliffs Nuclear Power Plant, Unit 3

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

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Enclosure 1

**Response to NRC Request for Additional Information RAI No. 333,
Question 03.08.04-30, Other Seismic Category I Structures,
Calvert Cliffs Nuclear Power Plant, Unit 3**

RAI No. 333

NRC Question 03.08.04-30

Supplemental RAI for RAI 301, Question 03.08.04-22 (eRAI 5556)

SRP Sections 3.8.4.I.6 and SRP 3.8.5.I.6 discuss information on the materials used in the construction of Seismic Category I structures and their foundations. In RAI 301, Question 03.08.04-22, the staff requested that the applicant explain the inconsistency between CCNPP Unit 3 FSAR Revision 7 and AREVA's RAI response/EPR FSAR Revision 3 interim on the use of the waterproofing system for Seismic Category I foundations below grade.

The staff reviewed the RAI response provided in UniStar Letter UN#11-258, dated September 22, 2011 (ML11269A046). The RAI response addresses most of the staff's concern. However, the staff's review of the proposed FSAR markups determined that not all FSAR sections related to the use of the waterproofing system are covered, e.g., a markup to Section 3.8.5.5 is not provided. Therefore, the staff requests that the applicant provide FSAR updates for all applicable 3.8 subsections related to the use of waterproofing and dampproofing systems.

The staff needs the above information to determine whether FSAR Sections 3.8.4.6.1 and 3.8.5.6.1 are consistent with SRP Acceptance Criteria 3.8.4.II.6 and 3.8.5.II.6.

Response

CCNPP Unit 3 COLA FSAR Section 3.8.5.5, "Structural Acceptance Criteria," is being revised to be consistent with the guidelines for the use of waterproofing and dampproofing systems for Seismic Category 1 structures.

COLA Impact

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

3.8.5.5 Structural Acceptance Criteria

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A site-specific sliding evaluation for SSE loads is performed to confirm the sliding stability of NI common basemat structures, EPGBs, and ESWBs. These structures are located in the powerblock area, which will be excavated and backfilled. Mud mats are used under the basemat of each structure to facilitate construction. As described in Section 3.8.4.6.1, a waterproofing system is used to protect the NI common basemat structures from the low-pH groundwater, as illustrated in Figure 3.8-6. The potential sliding interfaces down to the natural soils under the NI common basemat structures are:

- ◆ Basemat - mud mat
- ◆ Mud mat – sand

- ◆ Sand - waterproofing membrane
- ◆ Sand - structural fill
- ◆ Structural fill - soil stratum IIb

EPGBs and ESWBs are not exposed to low-pH groundwater and, therefore, do not require protective waterproofing and dampproofing systems. However, as a good construction practice and for defense in depth, waterproofing and dampproofing systems are applied to these structures in accordance with Sections 1805.2 and 1805.3 of the IBC 2009 (IBC, 2009). The~~waterproofing is used for the EPGBs and ESWBs because they are located above the post-development groundwater table. Therefore, the potential sliding interfaces under the EPGBs and ESWBs are:~~

- ◆ Basemat-mud mat
- ◆ Mud mat-structural fill
- ◆ Structural fill - soil stratum IIb

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Enclosure 2

**Table of Changes to CCNPP Unit 3 COLA Associated with Response to RAI No. 333,
Calvert Cliffs Nuclear Power Plant, Unit 3**

Table of Changes to CCNPP Unit 3 COLA Associated with Response to RAI No. 333

Change ID #	Subsection	Type of Change	Description of Change
Part 2 – FSAR			
CC3-10-0279	3.8.5.5	Incorporate COLA markups associated with the response to RAIs 144 and 145.	The response to RAIs 144 and 145 provided a complete rewrite of FSAR Section 3.8.5.5 in COLA Rev. 7. No changes were made to this FSAR section in COLA Rev. 8.
CC3-12-0127	3.8.5.5	Incorporate COLA markups associated with the RAI 333 Question 03.08.04-30 response.	CCNPP Unit 3 COLA FSAR Section 3.8.5.5, "Structural Acceptance Criteria," is being revised to be consistent with the guidelines for the use of waterproofing and dampproofing systems for Seismic Category I structures provided in UniStar response to RAI 301, letter UN#11-258. This change modifies the text of one paragraph provided in the response to RAIs 144 and 145.