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10 CFR 50.4
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December 12, 2012

UN#12-158

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 381, Vibratory Ground Motion

Reference: Surinder Arora (NRC) to Paul Infanger (UniStar Nuclear Energy), "CCNPP3 -
Final RAI 381 RGS1 6291," email dated November 13, 2012.

The purpose of this letter is to respond to the request for additional information (RAI) 381 identified in the NRC e-mail correspondence to UniStar Nuclear Energy, dated November 13, 2012 (Reference). RAI 381 addresses Vibratory Ground Motion as discussed in Section 2.5.2 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 8.

Enclosure 1 provides our response to RAI 381, Question 02.05.02-25. Revision to the COLA FSAR is not required as a result of this response.

Enclosure 2 provides the site response model used in site amplification calculations, including shear wave velocities, densities, and damping and shear modulus reduction curves, and the seismic hazard curves for individual seismic sources used to estimate the total site hazard at the seven ground motion frequencies.

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

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NRD

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 December 12, 2012



Mark T. Finley

- Enclosures:
- 1) Response to NRC Request for Additional Information No. 381, Question 02.05.02-25, Vibratory Ground Motion, Calvert Cliffs Nuclear Power Plant, Unit 3
 - 2) Shear wave velocity model digital data file in text format and Hazard Contribution per source zone digital data file in MSEXcel format, One DVD

cc: Surinder Arora, NRC Project Manager, U.S. EPR Projects Branch
Laura Quinn-Willingham, NRC Environmental Project Manager, U.S. EPR COL Application, (w/o enclosures)
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, (w/o enclosures)
David Lew, Deputy Regional Administrator, NRC Region I (w/o enclosures)

UN#12-158

Enclosure 1

**Response to NRC Request for Additional Information No. 381,
Question 02.05.02-25, Vibratory Ground Motion,
Calvert Cliffs Nuclear Power Plant, Unit 3**

RAI No. 381

Question 02.05.02-25

In compliance with 10 CFR 100.23 and in conformance to NUREG-0800, Standard Review Plan, Section 2.5.2, "Vibratory Ground Motion," and Regulatory Guide (RG) 1.208, "A Performance-Based Approach to Define the Site-Specific Earthquake Ground Motion," please provide the following digital data sets discussed in a recent response to RAIs 284, 322, and 345 (ML122760541) in order for the staff to be able to use them efficiently in its own confirmatory analyses:

1. The site response model used in site amplification function calculations:
 - Shear wave velocities
 - Densities
 - Damping and shear modulus reduction curves
2. Seismic hazard curves for all individual seismic sources used to estimate the total site hazard at the seven ground motion frequencies

This RAI is a potential Open Item.

Response

The site response model used in site amplification calculations, including shear wave velocities, densities, and damping and shear modulus reduction curves, and the seismic hazard curves for individual seismic sources used to estimate the total site hazard at the seven ground motion frequencies are provided in digital format in Enclosure 2.

COLA Impact

Revision to the COLA FSAR is not required as a result of this response.

UN#12-158

Enclosure 2

**Shear wave velocity model digital data file in text format and
Hazard Contribution per source zone digital data file in MSEXcel format,**

One DVD