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UniStar NUCLEAR ENERGY

10 CFR 50.4
10 CFR 52.79

May 23, 2013

UN#13-069

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 389, Probable Maximum Flood (PMF) on Streams and Rivers

Reference: Surinder Arora (NRC) to Paul Infanger (UniStar Nuclear Energy), "CCNPP3 – Final RAI 389 RHMB 7075," dated April 25, 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 April 25, 2013 (Reference). This RAI addresses Probable Maximum Flood (PMF) on Streams and Rivers, as discussed in Section 2.4.3 of the Final Safety Analysis Report (FSAR), as submitted in the Calvert Cliffs Nuclear Power Plant (CCNPP) Unit 3 Combined License Application (COLA), Revision 9.

Enclosure 1 provides our response to RAI 389, Question 02.04.03-1, 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 389, Question 02.04.03-1 response.

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

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NRO

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 May 23, 2013

Mark T. Finley

Enclosures: 1) Response to NRC Request for Additional Information, RAI 389, Question 02.04.03-1, Probable Maximum Flood (PMF) on Streams and Rivers, Calvert Cliffs Nuclear Power Plant, Unit 3

2) Table of Changes to CCNPP Unit 3 COLA Associated with the Response to RAI 389, Question 02.04.03-1, 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
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)

Enclosure 1

**Response to NRC Request for Additional Information,
RAI 389, Question 02.04.03-1,
Probable Maximum Flood (PMF) on Streams and Rivers,
Calvert Cliffs Nuclear Power Plant, Unit 3**

RAI No 389

Question 02.04.03-1

To meet the requirements of 10 CFR 52.79(a)(1)(iii), estimates of the probable maximum flood (PMF) resulting from the probable maximum precipitation (PMP) are needed. The PMF in rivers and streams induced by a PMP in the drainage area should be estimated and presented in the COL FSAR. Upon review of FSAR Revision 8, the staff noted inconsistencies between COL FSAR Table 2.4-20 "PMF Flow Rates " and Figures 2.4-11 "Johns Creek Watershed" and 2.4-18 "HEC-RAS Cross Section Locations" which should clearly relate the cross-sections to the contributing sub-basins. The staff requests that the COL applicant update the COL FSAR to ensure that the representation of the watershed in FSAR Figures 2.4-11 and 2.4-18 is consistent with the PMF flow rates presented in FSAR Table 2.4-20.

Response

Revision 9 of the Calvert Cliffs Nuclear Power Plant (CCNPP) Unit 3 Combined License Application (COLA) was submitted to NRC in April 2013[1]. In COLA Revision 9, additional tables and figures were added which renumbered the tables and figures in COLA Revision 8 referenced in NRC Request for Additional Information (RAI) 389, Question 02.04.03-1. The table below compares the table/figure numbering in COLA Revision 8, FSAR Chapter 2.4 in NRC Question 02.04.03-1 with the corresponding renumbered table/figures in COLA Revision 9, FSAR Chapter 2.4.

Table of Comparison of COLA Revision 8 and Revision 9 FSAR Figure/Table Numbers

COLA Revision 8, FSAR Table/Figure Number	COLA Revision 9, FSAR Table/Figure Number	Table/Figure Title
Table 2.4-20	Table 2.4-24	PMF Flow Rates
Figure 2.4-11	Figure 2.4-18	Johns Creek Watershed
Figure 2.4-18	Figure 2.4-25	HEC-RAS Cross Section Locations

This RAI response addresses COLA Revision 9 table and figure numbers as discussed below.

To ensure that the representation of the Johns Creek watershed in FSAR Figure 2.4-18 and Figure 2.4-25 is consistent with the information presented in FSAR Table 2.4-24, the contributing sub-basin numbers for Cross Sections 17, 11, and 7 in Table 2.4-24 (PMF Flow Rates) are updated. The contributing sub-basin for Cross Section 17 is Sub-Basin 4. The updated contributing sub-basins for Cross Section 11 are Sub-Basins 3 and 4; and for Cross Section 7 are Sub-Basins 2, 3, and 4.

[1]UniStar Nuclear Energy Letter UN#13-033, from Mark T. Finley to Document Control Desk, U.S. NRC, Submittal of Corrected Revision 9 to the Combined License Application for the Calvert Cliffs Nuclear Power Plant, Unit 3, and Application for Withholding of Documents, dated April 9, 2013

In addition, a typographical error was corrected at the end of the first paragraph of Section 2.4.3.1, changing Figure 2.4-18 to 2.4-19.

COLA Impact

FSAR Section 2.4.3.1 has been updated as follows:

2.4.3.1 Probable Maximum Precipitation

The PMP was developed according to procedures outlined in the Hydro Meteorological Report (HMR) Numbers 51, 52, and 53 (NOAA, 1978) (NOAA, 1980) (NOAA, 1982). The values are presented in Table 2.4-22. They have been estimated based on the size and shape of the Johns Creek watershed drainage area in accordance with the procedures outlined in HMR Number 52 (NOAA, 1982). The 2.3 mi^2~~2~~ (5.9 km^2~~2~~) Johns Creek watershed drainage area, upstream of the Maryland State Highway MD 2/4 culvert crossing, is shown on Figure 2.4-18. The drainage area is divided into four sub-basins. The topography for each sub-basin is variable with elevations ranging from about 10 ft (3.0 m) to about 120 ft (37 m). There are few level areas in the drainage area. Ground cover for all four sub-basins primarily consists of dense woods with a few open space areas. The drainage area for each sub-basin is listed in Table 2.4-23. A schematic of the watershed sub-basins is shown in Figure 2.4-~~18~~19.

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FSAR Table 2.4-24 has been updated as follows:

Table 2.4-24 - {PMS Flow Rates}

Cross Section	River Station	Contributing Sub-Basins	PMP Discharges ft^3/sec (m^3/sec)					
			Profile 1 (0:50)	Profile 2 (0:55)	Profile 3 (1:00)	Profile 4 (1:05)	Profile 5 (1:10)	Profile 6 (1:15)
17	8552	~~1~~ 4	7236.4 (204.91)	7111.0 (201.36)	6405.1 (181.37)	5320.2 (150.65)	4301.9 (121.82)	3358.5 (95.102)
11	5952	~~1~~ 3 and ~~2~~ 4	9891.4 (280.09)	9126.3 (258.43)	7995.8 (226.41)	6557.5 (185.68)	5182.1 (146.74)	3947.1 (111.77)
7	3922	~~1,~~ 2, 3, and ~~3~~ 4	19969.3 (565.468)	20469.1 (579.620)	19737.8 (558.912)	17919.2 (507.415)	15582.9 (441.258)	12947.2 (366.624)
3	894	1, 2, 3, & 4*	11121.9 (314.937)	14761.3 (417.993)	18043.7 (510.941)	20421.8 (578.281)	21650.2 (613.065)	21790.4 (617.035)

Note:
*Measured at culvert outlet. Includes storage effects.

Enclosure 2

Table of Changes to CCNPP Unit 3 COLA
Associated with the Response to RAI 389, Question 02.04.03-1,
Calvert Cliffs Nuclear Power Plant, Unit 3

Table of Changes to CCNPP Unit 3 COLA

Associated with the Response to RAI No. 389

Change ID #	Subsection	Type of Change	Description of Change
Part 2 – FSAR			
CC3-13-0096	2.4.3.1	Incorporate COLA markups associated with the response to RAI 389, Question 02.04.03-1 (this response).	The last sentence in the first paragraph of Section 2.4.3.1 has been revised to refer to the correct Figure (Figure 2.4-19) as part of the RAI 389, Question 02.04.03-1 response (this response).
CC3-13-0096	Table 2.4-24	Incorporate COLA markups associated with the response to RAI 389, Question 02.04.03-1 (this response).	The contributing sub-basin information has been revised for Cross Sections 17, 11, and 7 of FSAR Table 2.4-24 as part of the RAI 389, Question 02.04.03-1 response (this response).