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UniStar NUCLEAR ENERGY

10 CFR 50.4
10 CFR 52.79

November 27, 2012

UN#12-144

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 370, Other Seismic Category I Structures

References:
1) Surinder Arora (NRC) to Paul Infanger (UniStar Nuclear Energy), "FINAL RAI 370 SEB 6691," dated September 13, 2012

2) UniStar Nuclear Energy Letter UN#12-100, 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 370, Other Seismic Category I Structures, dated September 26, 2012

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 September 13, 2012 (Reference 1). This RAI addresses Other Seismic Category I Structures, as discussed in Section 3.8.4 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.

Reference 2 indicated that a response to RAI 370 would be provided to the NRC by November 30, 2012.

Enclosure 1 provides our response to RAI 370, Question 03.08.04-35, 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.

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Enclosure 2 provides a table of changes to the CCNPP Unit 3 COLA associated with this RAI 370 response. This response modifies previously submitted material in the CCNPP Unit 3 COLA Revision 7 and 8 submittals, and responses to RAIs 253, 301, 310, and 279.

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 November 27, 2012

FOR
Mark T. Finley

Enclosures:
1) Response to NRC Request for Additional Information RAI 370, Questions 03.08.04-35, Other Seismic Category I Structures, Calvert Cliffs Nuclear Power Plant, Unit 3
2) Table of Changes to CCNPP Unit 3 COLA associated with response to RAI No. 370

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 370, Questions 03.08.04-35, Other Seismic Category I Structures,
Calvert Cliffs Nuclear Power Plant, Unit 3

RAI No. 370

Question 03.08.04-35

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 333, Question 03.08.04-30, the staff requested that the applicant provide FSAR updates for all applicable FSAR 3.8 subsections related to the use of waterproofing and dampproofing systems.
The staff reviewed the RAI response provided in UniStar Letter UN#12-054, dated June 21, 2012 (ML12178A452) and found that additional FSAR updates are needed to reflect the use of waterproofing and dampproofing systems for portions of Seismic Category I structures below grade. For example:

(1) Since waterproofing and dampproofing systems will be used for the EPGBs, ESWBs and Seismic Category I Intake structures, in FSAR Section 3.8.5.5 and Table 3.8-1, "Static Frictional Parameters," the potential sliding interfaces under the EPGBs, ESWBs and/or CBIS need to be revised to include the interface between sand/soil/backfill and waterproofing/dampproofing systems.

(2) U.S. EPR FSAR Section 3.4.2 states that "... Portions of Seismic Category I structures located below grade elevation incorporate the use of waterstops and waterproofing to mitigate environmental deterioration of exposed surfaces and thereby minimize long term maintenance..." Since CCNPP Unit 3 Seismic Category I structures include the Seismic Category I buried utilities, waterproofing and dampproofing systems should be applied to all CCNPP Unit 3 Seismic Category I buried utilities, to comply with the U.S EPR guideline quoted above. However, based on CCNPP Unit 3 FSAR Section 3.8.4.6.1, it is not clear to the staff that waterproofing and dampproofing systems will be applied to all CCNPP Unit 3 Seismic Category I buried utilities. Therefore, provide updates for FSAR Section 3.8.4.6.1, or other appropriate FSAR section(s), to clearly indicate that waterproofing and dampproofing systems will be applied to all CCNPP Unit 3 Seismic Category I buried utilities, including duct banks and buried pipes.

(3) FSAR Section 3.8.4.6.1 only provides the description of the waterproofing system for the NI common basemat structure. A description needs to be provided in the FSAR of the waterproofing and dampproofing systems to be provided for portions of other Seismic Category I structures below grade, including foundation walls and basemat, as well as buried utilities.
In summary, the staff requests that the applicant review all FSAR sections and provide FSAR updates for all applicable 3.8 subsections to clearly reflect the use of waterproofing and dampproofing systems for portions of Seismic Category I structures below grade.

The staff needs the above information to determine whether FSAR Section 3.8 is consistent with SRP Acceptance Criteria 3.8.4.II.6 and 3.8.5.II.6.

Response

Calvert Cliffs Nuclear Power Plant (CCNPP) Unit 3 Combined License Application (COLA), updates have been incorporated to reflect the use of waterproofing and dampproofing systems for portions of Seismic Category I structures below grade.

(1) The response to NRC RAI 333, Question 03.08.04-30 identified that CCNPP Unit 3 COLA FSAR Section 3.8 would be updated for the effects of waterproofing and dampproofing systems consistent with the requirements in U.S. EPR Final Safety Analysis Report (FSAR) Revision 3. The affected COLA Part 2 (FSAR) Sections 1.8.2, 3.8.4.6.1, 3.8.4.7, 3.8.5.5, 3.8.5.6.1, Tables 2.0-1 & 3.8-1; and Figure 3.8-7, COLA Part 7 (Departures) Sections 1.1 and 1.1.5, and COLA Part 10 (ITAAC) Appendix B Table 2.4-34, have been revised.
(2) Waterproofing will be provided for CCNPP Unit 3 Seismic Category I buried utilities, including duct banks and buried pipes located below the post-development groundwater level. Waterproofing may be liquid-applied coatings or geo-membrane for protection. Dampproofing is not required for buried duct banks or piping. The FSAR has been updated to indicate that waterproofing is required for Seismic Category I duct banks and buried pipes locate below the post-development groundwater table.
(3) FSAR 3.8 has been revised to describe dampproofing and waterproofing systems to be provided for portions of Seismic Category 1 structures below grade, including foundation walls and basemats. The response to (2) above identifies the FSAR updates being provided for dampproofing and waterproofing systems for buried utilities.

COLA Impact

The CCNPP Unit 3 COLA Part 2, FSAR, has been revised as follows. For Section 3.8.5.5, the revisions are shown incorporating the response to RAI 333[1].

1.8.2 Departures

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{The list of departures from the U.S. EPR FSAR is as follows:

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Shear Wave Velocity	FSAR 2.5.4.2.5.8, FSAR Table 2.0-1, and COLA Part 10, ITAAC Table 2.4-1
~~Coefficient of Static Friction~~	~~FSAR 3.8.5.5~~
Generic Technical Specifications and Bases - Setpoint Control Program	FSAR 16 (COLA Part 4)
Test Bypass line (piping and valve) - UHS Makeup Water system	FSAR 9.2.5

[1] UniStar Nuclear Energy Letter UN#12-054, 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 No. 333, Other Seismic Category I Structures, dated June 21, 2012

2.0 SITE CHARACTERISTICS

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Table 2.0-1— {U.S. EPR Site Design Envelope Comparison}

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Minimum Coefficient of Static Friction for Category I Structures (representative of all interfaces between basemat and soil)	0.5 (note b)	~~0.45 – Chesapeake Cemented Sand (note b)~~ ~~0.40 – Backfill (note b)~~ ~~(See Section 2.5.4, Table 2.5-58)~~ (See Section 3.8.5.5, Table 3.8-1)

...

NAB Coefficients of Friction	0.5 ≤ u ≥ 0.7 (note b)	~~TBD~~ (See Section 3.8.5.5, Table 3.8-1)

Notes:
a. Note not used
b. ~~Value is a departure from a design parameter and is listed in Part 7 of the COL Application. Justification is provided in Section 3.8.5.5.~~ The U.S. EPR FSAR equates a minimum friction angle of 26.6 degrees with a friction coefficient greater than or equal to 0.5 (see U.S. EPR FSAR Tier 2 Section 2.5.4.2).

3.8.4.6.1 Materials

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As stated in Section 2.4.12.5, the post-development groundwater elevation in the powerblock area is at about 30 ft (9.1 m) below the finished site grade level of 85 ft (25.9 m). The NI common basemat structures are embedded approximately 40 ft (12.2 m) below the finished grade. Therefore, the lower portions of the NI common basemat structures are submerged in the low-pH groundwater from the Surficial aquifer. In addition, Seismic Category I ESWBs are founded below the post-development groundwater elevation. Other Seismic Category I structures in the powerblock area, i.e., the EPGBs ~~and ESWBs~~, are located above the post-development groundwater level and are not affected by the low-pH groundwater.

~~A waterproofing system is~~ Waterproofing systems are provided to protect the Seismic Category I reinforced concrete NI common basemat structures from the corrosive effects of low-pH groundwater. Due to close proximity with the NI common basemat structures, the Nuclear Auxiliary Building (NAB) and Access Building (AB) will also be protected by waterproofing systems. As illustrated in Figure 3.8-6, the waterproofing system consists of a primary geomembrane envelope located under the foundation ~~NI common basemat~~ and mud mat between two sand layers and attached to the below-grade walls, extending up to Elevation 57'-0" (17.4 m) NGVD 29, or about 2 ft (0.6 m) above the highest projected post-development groundwater level. Secondary waterproofing starts at the bottom of the below-grade walls, continues above the groundwater level and terminates at about 1 ft (0.3 m) above the finished grade level. A groundwater monitoring system (consisting of risers and drain sumps) is provided inside the geomembrane envelope within the sand layer to monitor and pump out any water that may leak through the primary geomembrane. A vertical drainage layer is placed between the primary and secondary waterproofing membranes to facilitate the flow of any leaked groundwater down to the sumps.

Seismic Category I EPGBs are located above the post-development groundwater level and are not in constant contact with the low-pH groundwater. As illustrated in Figure 3.8-7, the dampproofing system for the EPGBs consists of an HDPE geomembrane located between the mudmat and underlying structural fill. Dampproofing for below-grade walls consists of liquid applied membrane or HDPE geomembrane placed directly against concrete.

A majority of the buried electrical duct banks are located above the post-development groundwater level in the powerblock area and are not affected by the low-pH groundwater. For the duct banks in the utility corridor and buried Seismic Category I duct banks and pipes that may be exposed to the low-pH groundwater, liquid-applied or geomembrane waterproofing is applied for protection against prolonged exposure to the groundwater. Protective measures for buried pipe include protective wrapping and/or coatings that are acid-resistant. Dampproofing is not required for buried duct bank and pipe.

As the Seismic Category I Forebay and UHS Makeup Water Intake Structure contact water both inside and outside, these structures will not be waterproofed or dampproofed.

As noted in Table 3.8-5, the maximum observed sulfate concentration in the groundwater is 365 ppm. According to ACI 349-01 (ACI, 2001a) Table 4.3.1, this concentration is considered a moderate exposure (also identified as "Class 1 Exposure" in ACI 201.2R-01 (ACI, 2001b)) and

requires the use of ASTM C150 (ASTM, 2009) Type II or equivalent cement, a maximum water-cementitious materials ratio of 0.5, and a minimum concrete compressive strength of 4000 psi.

3.8.4.7 Testing and Inservice Inspection Requirements

...

For the structures in the powerblock area where waterproofing systems are provided to protect the reinforced concrete ~~NI common basemat structures~~, in-service inspection utilizes a groundwater monitoring system consisting of risers and drain sumps. The risers and sumps will be subject to periodic monitoring to confirm that groundwater leaking through the geomembrane envelope is being effectively removed and is not ponded against the concrete structure. Such monitoring will:

3.8.5.5 Structural Acceptance Criteria

...

{For the Nuclear Island (NI) common basemat structures, Emergency Power Generating Buildings (EPGBs), and Essential Service Water Building (ESWBs), U.S. EPR FSAR Section 2.5.4.2 specifies a minimum coefficient of friction of 0.5 for interfaces between the foundation basemat and soil, or for cohesive soil cases the soil will have an undrained strength equivalent to or exceeding a drained strength of 26.6 degrees yielding a friction coefficient greater than or equal to 0.5. ~~0.7 beneath their basemats.~~ As identified in Table 3.8-1 ~~2.5-58~~, the ~~geotechnical site investigation for CCNPP Unit 3 indicates a~~ coefficient of friction ~~between 0.35 and 0.45~~ for underlying interfaces is typically greater than 0.5. In those instances where the coefficient of friction is less than 0.5, there is an adhesion component providing additional resistance to movement (see Table 3.8-1). As identified in Table 2.5-54, the drained strength or drained friction angle (f') is greater than 26.6 degrees. ~~soil layers. This represents a departure from the friction coefficient of 0.7 specified in the U.S. EPR FSAR.~~

A site-specific sliding evaluation for SSE loads is performed to confirm the sliding stability of NI common basemat structures, EPGBs, ~~and~~ ESWBs, NAB, AB, and Turbine Island (TI). 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, ESWBs, NAB, and AB 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, ESWBs, NAB, and AB are:

- Basemat - mud mat
- Mud mat - sand
- Sand - waterproofing membrane
- Sand - structural fill
- Structural fill - soil stratum IIb

EPGBs and ~~ESWBs~~ TI 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). ~~No~~

~~waterproofing is used for the EPGBs and ESWBs because they are located above the post-development groundwater table.~~ As described in Section 3.8.4.6.1, a dampproofing system is used for the EPGBs (and will also be used for the TI), as illustrated in Figure 3.8-7. ~~Therefore, the~~ The potential sliding interfaces under the EPGBs and TI ~~ESWBs~~ are:

- Basemat-mud mat
- Mud mat- dampproofing membrane ~~structural fill~~
- Dampproofing membrane - sand
- Sand - structural fill
- Structural fill - soil stratum IIb

Frictional parameters at the various sliding interfaces are presented in Table 3.8-1. Based on these frictional parameters, factors of safety against sliding and overturning associated with the site-specific SSE loads are presented in Table 3.8-4 for the NI common basemat structures, EPGBs, and ESWBs. The minimum required factor of safety of 1.1 is achieved for all the buildings. Note that passive soil pressure is not utilized for the sliding evaluation.}

3.8.5.6.1 Materials

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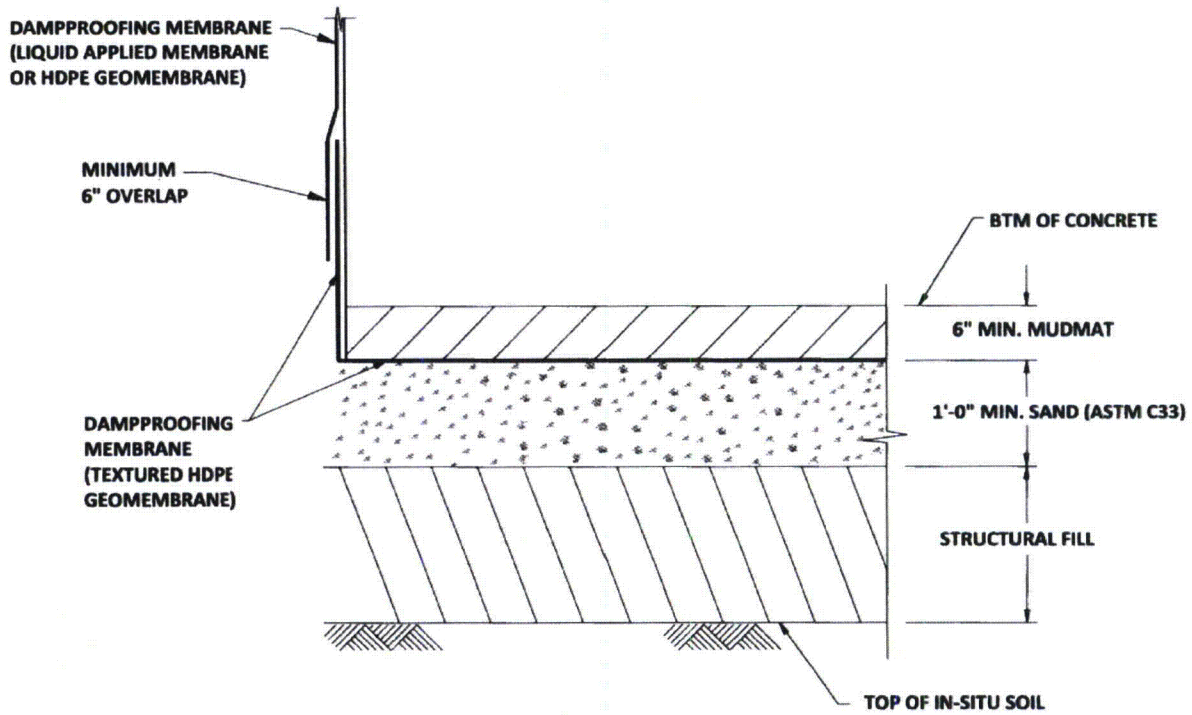
{As described in Section 3.8.4.6.1, Seismic Category I structures other than NI common basemat structures and the ESWBs are not exposed to low-pH groundwater and, therefore, do not require protection to perform their safety function. However, in line with good construction practices and to fulfill defense in depth requirements, waterproofing and dampproofing systems are applied in accordance with Sections 1805.2 and 1805.3 of the IBC 2009 (IBC, 2009) to Seismic Category I foundations. For NI common basemat structures and the ESWBs, a waterproofing membrane is used to eliminate the prolonged exposure of below grade concrete from the low pH groundwater of Surficial aquifer, as described in Section 3.8.4.6.1. Since groundwater in the intake area is considered non-aggressive, and as the Seismic Category I Forebay and UHS Makeup Water Intake Structure contact water both inside and outside, these structures will not be waterproofed or dampproofed. Discussion of concrete mix design for improved resistance to sulfate attack and chloride ion penetration is also presented in Section 3.8.4.6.1. Epoxy coated rebar is not used.}

Table 3.8-1— {Static Frictional Parameters}

Interface Friction	Coefficient	Adhesion (ksf)
	NI Common Basemat Structures, ESWBs, NAB, and AB	
…	…	…
	EPGBs and TI ~~ESWBs~~	
Basemat - Mudmat	0.60	-
Mudmat - Dampproofing (See Note) ~~Structural Fill~~	≥0.52	-
Dampproofing - Sand	0.52	-
Sand - Structural Fill	0.58	-
Structural Fill - Stratum IIb	0.47	1.0

Note: the Mudmat - Dampproofing interface must be made by pouring the mudmat directly onto the textured surface of the HDPE used for dampproofing. Therefore, the Mudmat - Dampproofing interface resistance will be the full shear strength of the HDPE material, and the weaker interface will be the Dampproofing - Sand interface.

Figure 3.8-7 – {Conceptual Configuration of Dampproofing Membrane}



The CCNPP Unit 3 COLA Part 7, Departures, has been revised as follows:

1.1 DEPARTURES

...

4. Shear Wave Velocity
5. Not Used ~~Coefficient of Static Friction~~
6. Soil Column Beneath the Nuclear Island, ESWB and EPGB

...

1.1.5 Not Used ~~**Coefficient of Static Friction**~~

~~Affected U.S. EPR FSAR Sections: Tier 2 Table 2.1-1, Tier 2 Sections 2.5.4.2, 3.8.5.4.2, and 3.8.5.6.1~~

~~**Summary of Departure:**~~

~~The U.S. EPR FSAR identifies a minimum coefficient of static friction of 0.7 at the soil basemat interface. The geotechnical site investigation for CCNPP Unit 3 indicates coefficients of static friction between 0.35 and 0.45 for the underlying soil layers including structural fill, as discussed in FSAR Section 2.5.4. Static friction coefficients for various sliding interfaces under the Nuclear Island common basemat, the Emergency Power Generating Building foundations, and the Essential Service Water Building foundations are reported in FSAR Section 3.8.5. All the aforementioned coefficients of static friction are less than the U.S. EPR FSAR value of 0.7.~~

~~**Scope/Extent of Departure:**~~

~~This Departure is identified in Part 2 FSAR, Section 3.8.5.5.~~

~~**Departure Justification:**~~

~~As described in FSAR Section 3.8.5.5, site-specific sliding stability evaluations are performed for the Nuclear Island Common Basemat Structures, the Emergency Power Generating Buildings (EPGBs), and the Essential Service Water Buildings (ESWBs) under site SSE loading. The governing factors of safety against sliding exceed the minimum allowable value of 1.1, as specified by NUREG 0800, Standard Review Plan 3.8.5, Structural Acceptance Criteria II.5. The factors of safety are reported in FSAR Section 3.8.5. Passive soil pressure is not utilized in these evaluations.~~

~~Therefore, the Nuclear Island Common Basemat Structures, the Emergency Power Generating Buildings, and the Essential Service Water Buildings are stable, despite the lower coefficients of static friction.~~

~~**Departure Evaluation:**~~

~~This Departure, associated with static coefficient of friction used for the Nuclear Island Common Basemat Structures foundations, the Emergency Power Generating Building foundations, and the Essential Service Water Building foundations, has been evaluated and determined to not affect the safety function of these structures. Accordingly, this Departuredoes not:~~

1. ~~Result in more than a minimal increase in the frequency of occurrence of an accident previously evaluated in the plant-specific FSAR;~~
2. ~~Result in more than a minimal increase in the likelihood of occurrence of malfunction of a structure, system, or component (SSC) important to safety and previously evaluated in the plant-specific FSAR;~~
3. ~~Result in more than a minimal increase in the consequences of an accident previously evaluated in the plant-specific FSAR.~~
4. ~~Result in more than a minimal increase in the consequences of a malfunction of an SSC important to safety previously evaluated in the plant-specific FSAR;~~
5. ~~Create a possibility for an accident of a different type than any evaluated previously in the plant-specific FSAR;~~
6. ~~Create a possibility for a malfunction of an SSC important to safety with a different result than any evaluated previously in the plant specific FSAR;~~
7. ~~Result in a design basis limit for a fission product barrier as described in the plant-specific FSAR being exceeded or altered; or~~
8. ~~Result in a departure from a method of evaluation described in the plant-specific FSAR used in establishing the design bases or in the safety analyses.~~

~~This Departure does not affect resolution of a severe accident issue identified in the plant-specific FSAR.~~

~~Therefore, this Departure has no safety significance.~~

The CCNPP Unit 3 COLA Part 10, ITAAC, Appendix B, has been revised as follows:

Table 2.4-34— {Waterproofing or Dampproofing Geomembrane Under Nuclear Island Common Basemat Structures and Other Buildings Inspections, Tests, Analyses, and Acceptance Criteria}

Enclosure 2

Table of Changes to CCNPP Unit 3 COLA Associated with Response to RAI No. 370

Table of Changes to CCNPP Unit 3 COLA Associated with Response to RAIs No. 370

Change ID #	Ref	Section	Type of Change	Description of Change
GN-10-0191	UN#10-300[2]	Part 2 3.8.5.6.1	Incorporate COLA markups associated with development of Revision 7.	The COLA Revision 7 submittal replaced the 3.8.5.6.1 COL Item and the description of how it will be addressed.
CC3-10-0289	UN#10-300[2]	Part 2 3.8.5.5 3.8.5.5.1 3.8.5.6.1 Table 3.8.1	Incorporate COLA markups associated with development of Revision 7.	The COLA Revision 7 submittal replaced how the 3.8.5.5 and 3.8.5.6.1 COL Items will be addressed.
CC3-10-0302	UN#10-285[3]	Part 2 3.8.4.6.1	Incorporate COLA markups associated with the response to RAI 253 Questions 03.07.02-42, 43, 44, 47, 48, 52, and 53.	The response to RAI 253 deleted references to the UHS Electrical Building.
CC3-11-0151	UN#11-253[4]	Part 2 3.8.4.6.1	Incorporate COLA markups associated with the response to RAI 310 Questions 03.08.04-25 and 28.	The response to RAI 301 Question 03.08.04-23 replaced a description in 3.8.4.6.1 regarding the cementitious materials to be used in areas that would be subjected to brackish water.
CC3-10-0154	UN#10-300[2]	Part 2 Table 1.8.2 3.8.4.6.1 3.8.4.7 Part 7 1.1 Part 10	Incorporate COLA markups associated with development of Revision 7.	The COLA Revision 7 submittal replaced 3.8.4.6.1 and 3.8.4.7, added a departure for Coefficient of Static Friction, and added an Inspections, tests, Analyses, and Acceptance Criteria for Waterproofing Geomembrane Under Nuclear Island Common Basemat Structures and Other Buildings.
CC3-11-0159	UN#11-258[5]	3.8.4.6.1 3.8.5.6.1	Incorporate COLA markups associated with the response to RAI 301 Question 03.08.04-22.	The COLA Revision 8 submittal deleted a reference in 4.8.4.6.1 to not needing waterproofing where groundwater is non-aggressive for the protection of concrete structures or duct banks, and added a section to how the 3.8.5.6.1 COL Item is addressed.

[2] UniStar Nuclear Energy Letter UN#10-300, from Greg Gibson to Document Control Desk, U.S. NRC, Submittal of Revision 7 to the Combined License Application for the Calvert Cliffs Nuclear Power Plant, Unit 3, and Application for Withholding of Documents, dated December 20, 2010

[3] UniStar Nuclear Energy Letter UN#10-285, 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 253, Seismic System Analysis, dated November 16, 2010

[4] UniStar Nuclear Energy Letter UN#11-253, 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 No. 310, Other Seismic Category I Structures, dated September 23, 2011

Change ID #	Ref	Section	Type of Change	Description of Change
CC3-11-0168	UN#12-026[5]	Table 2.0-1	Incorporate COLA markups associated with development of Revision 8.	The COLA Revision 8 submittal replaced the Table 2.0-1 Minimum Coefficient of Static Friction entry, and added the NAB Coefficients of Friction entry.
CC3-11-0169 and GN-11-0164	UN#12-026[5]	3.8.5.6.1	Incorporate COLA markups associated with development of Revision 8.	The COLA Revision 8 submittal added dampproofing to the COL Item for 3.8.5.6.1.
CC3-11-0023	UN#12-026[5]	Table 2.0-1	Incorporate COLA markups associated with development of Revision 8.	The COLA Revision 8 submittal added the Table 2.0-1 Minimum Coefficient of Friction entry and Note b.
CC3-12-0127	UN#12-054[6]	3.8.5.5	Incorporate COLA markups associated with the response to RAI 279 Questions 09.02.05-4, 11, 16 and 17.	The response to RAI 279 Questions 09.02.05-4, 11, 16 and 17 replaced a description of required waterproofing and added a dampproofing discussion in 3.8.5.5.
CC3-12-0217	UN#12-144	Part 2 1.8.2 Table 2.0-1 3.8.4.6.1 3.8.4.7 3.8.5.5 3.8.5.6.1 Table 3.8-1 Figure 3.8-7 Part 7 1.1 1.1.5 Part 10 Table 2.4-34	Incorporate COLA markups associated with the response to RAI 370 Question 03.08.04-35	The response to RAI 370 Question 03.08.04-35 deleted the departure concerning the Coefficient of Static Friction, enhanced discussion of dampproofing, and provide other enhancements in FSAR 3.8.4 and 3.8.5. This response supersedes or modifies previously submitted material in the CCNPP Unit 3 COLA Revision 7 and 8 submittals, and responses to RAIs 253, 301, 310, and 279. The relevant affected sections are listed to left.

[5] UniStar Nuclear Energy Letter UN#12-026, from Mark T. Finley to Document Control Desk, U.S. NRC, Submittal of Revision 8 to the Combined License Application for the Calvert Cliffs Nuclear Power Plant, Unit 3, and Application for Withholding of Documents, dated March 27, 2012

[6] UniStar Nuclear Energy Letter UN#12-054, 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 No. 333, Other Seismic Category I Structures, dated June 21, 2012