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December 20, 2013

UN#13-159

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 402, Information Systems Important to Safety

- References:
- 1) Surinder Arora (NRC) to Paul Infanger (UniStar Nuclear Energy), "CCNPP3 - Final RAI 402 ICE1 7264," dated October 29, 2013
 - 2) UniStar Nuclear Energy Letter UN#13-148, from Paul Infanger to Document Control Desk, U.S. NRC, "Schedule Information for Response to Request for Additional Information for the Calvert Cliffs Nuclear Power Plant, Unit 3, RAI 402, Information Systems Important to Safety," dated November 27, 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 29, 2013 (Reference 1). This RAI addresses Information Systems Important to Safety, as discussed in Section 7.5 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 that a response to RAI 402 would be provided to the NRC by December 20, 2013. Enclosure 1 provides our response to RAI 402 Question 07.05-3, 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 RAI 402, Question 07.05-3.

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

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 December 20, 2013



Paul Infanger

Enclosures: 1) Response to NRC Request for Additional Information RAI 402, Question 07.05-3, Information Systems Important to Safety, Calvert Cliffs Nuclear Power Plant, Unit 3

2) Table of Changes to CCNPP Unit 3 COLA Associated with the Response to RAI 402, Question 07.05-3, 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)

UN#13-159

Enclosure 1

**Response to NRC Request for Additional Information
RAI 402, Question 07.05-3, Information Systems Important to Safety,
Calvert Cliffs Nuclear Power Plant, Unit 3**

RAI No. 402

07.05-3

This RAI is a follow-on to RAI 325, Question 07.05-1

Provide additional information that describes and explains how the safety-related instrumentation and control (I&C) systems for site-specific systems, such as the Ultimate Heat Sink (UHS), address NRC requirements. 10 CFR Part 50, Appendix A, General Design Criteria 13 requires, in part, that instrumentation be provided to monitor variables and systems over their anticipated ranges for normal operation, for anticipated operational occurrences, and for accident conditions. In RAI 325, Question 07.05-1, the staff noted that while the UHS is safety-related, the staff was not able to identify information in Chapter 7 of the Calvert Cliffs Nuclear Power Plant Unit 3 (CCNPP Unit 3) Final Safety Analysis report (FSAR) that describes the UHS I&C. From information located in the ITAAC, and Chapter 9 of the CCNPP Unit 3 FSAR, the staff identified the following site-specific systems, for which the related I&C design information was not found in Chapter 7 of the CCNPP Unit 3 FSAR. These systems include: UHS makeup water intake structure ventilation system (initiated automatically), UHS makeup water system (each division can be initiated manually), essential service water system (ESWS) normal makeup system, ESWS emergency makeup water system, ESWS makeup water bypass system, ESWS blowdown system, and ESWS alternate blowdown system.

UniStar's previous response to RAI 325, Question 07.05-1 was not adequate because the response did not include all the information on the I&C systems that control six of the seven above stated site specific systems. The only system for which adequate information was provided was the UHS makeup water system.

Subsequently, on April 30, 2013, the applicant provided a supplemental RAI response to RAI 325, Question 07.05-1. The staff found that the supplemental RAI response did not provide all of the information on the I&C Systems that control five of the seven above stated site specific systems. The one system for which adequate information was provided was the UHS makeup water intake structure ventilation system.

Additional information was not provided for the following four systems, as seen in the table provided in the applicant's "Feedback Comment 4 (I&C Issue 1):"

SYSTEM	Control
ESWS (UHS) Emergency Makeup Water system	No Site Specific Automatic Controls
ESWS (UHS) Makeup Water Bypass system	No Site Specific Automatic Controls
ESWS Blowdown system	No Site Specific Automatic Controls
ESWS Emergency Blowdown system	No Site Specific Automatic Controls

The staff requests that the applicant state the I&C system that provides control to each of the following systems: ESWS (UHS) Emergency Makeup Water system, ESWS (UHS) Makeup Water Bypass system, ESWS Blowdown system, and the ESWS Emergency Blowdown system. If an I&C system does not provide control, discuss how control is provided.

As seen in the applicant's "Feedback Comment 7 (I&C Issue 4)," "...different column headings exist on the two tables..." The headings in Table 7.4-1 and Table 7.4-2 do not seem to be consistent with the terminology in EPR FSAR. Tables 7.4-1 and table 7.4-2 have the following

headings; "Normal Shutdown," and "Safe/DBA Shutdown." This is different from the headings in the Calvert Cliffs Tables. Calvert Cliffs Nuclear Power Plant (CCNPP) Unit 3, FSAR, Table 7.4-1 and Table 7.4-2, use the following terminology in the table headings: "Normal Shutdown," and "Safe/DBA Shutdown." However, U.S. EPR FSAR Section 7.4 uses the following terminology: "safe shutdown," "cold shutdown," "hot shutdown,"

Provide clarification on CCNPP Unit 3 Table 7.4-1 and Table 7.4-2 headings, "Normal Shutdown," and "Safe/DBA Shutdown."

The additional information provided by the applicant should also be incorporated into Chapter 7 of the FSAR and be sufficient to support the site-specific ITAAC for the UHS Makeup Water System located in Tables 2.4-20, 2.4-22, and 2.4-28 of the CCNPP Unit 3 COLA, Part 10, Inspections, Tests, Analyses Criteria (ITAAC) and ITAAC Closure, Revision 7.

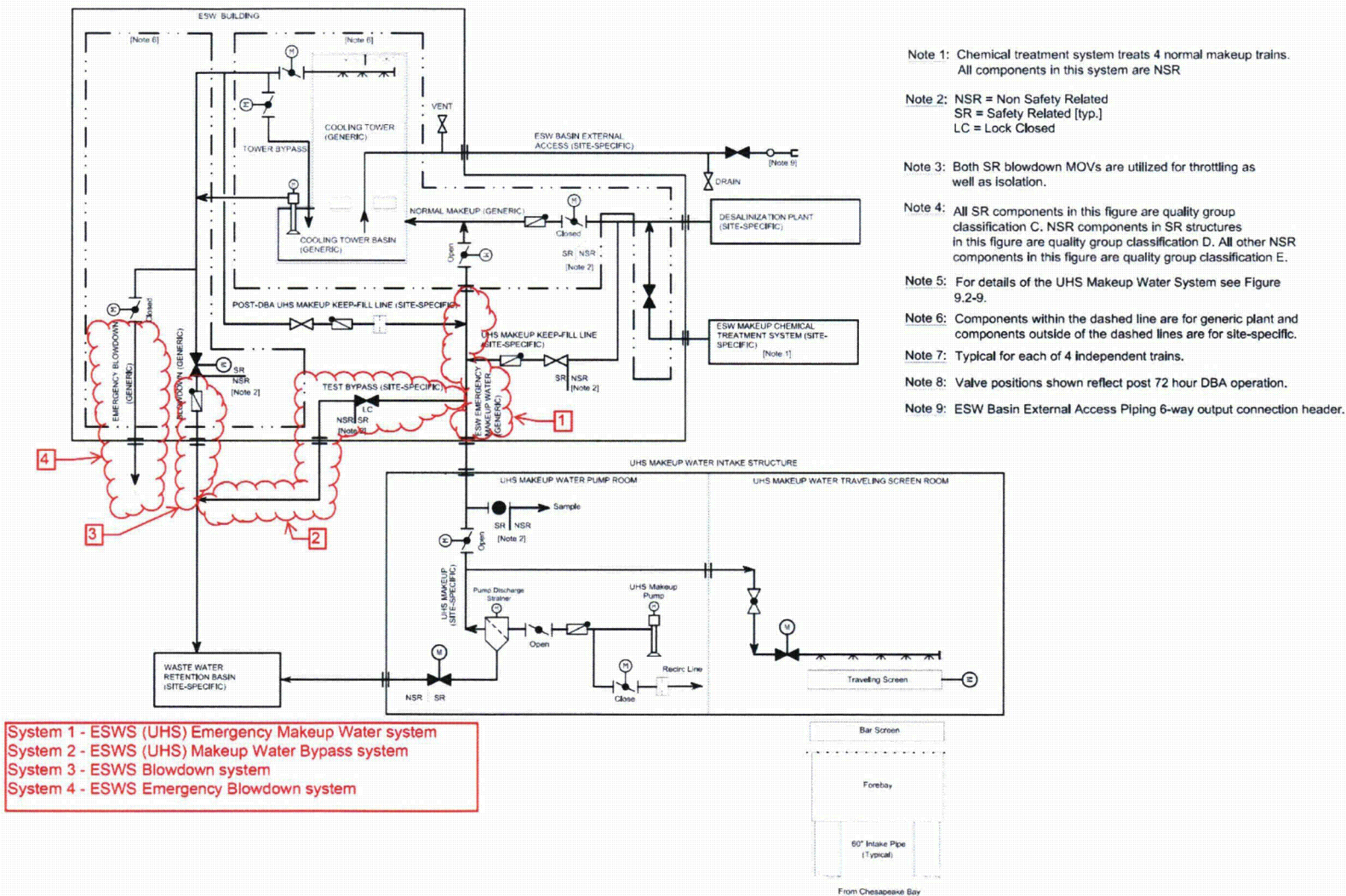
Response:

Refer to the attached Figure 1 (excerpt from Calvert Cliffs Nuclear Power Plant (CCNPP) Unit 3 FSAR Figure 9.2-3). The four systems that are described in Staff's question above, i.e., Essential Service Water System (ESWS) Ultimate Heat Sink (UHS) Emergency Makeup Water system, ESWS (UHS) Makeup Water Bypass system, ESWS Blowdown system, and the ESWS Emergency Blowdown system are indicated by the boundary labels 1, 2, 3 and 4, respectively. As shown, in Figure 1, these systems consist of only piping and manual isolation valves or check valves, which do not require any I&C control. Therefore, these subsystems are not controlled by an I&C system. Since these systems do not require I&C control or additional information, there is no impact to FSAR Chapter 7 and site-specific ITAAC Tables.

The headings for Tables 7.4-1 and Table 7.4-2 are revised and notes added to clarify the intention of the tables and headings. The heading "Normal Shutdown" is used to illustrate a shutdown (hot & cold), where there is not an emergency condition (i.e., loss of offsite power, Safety Injection (SI) signal), and the shutdown would be performed utilizing the nonsafety-related systems, including Essential Service Water System Normal Makeup system. The heading "Emergency Shutdown" is used to illustrate a shutdown (hot & cold), where there is an emergency condition (i.e., loss of offsite power, SI signal), and the shutdown would be performed utilizing the safety-related systems, including UHS Makeup Water System.

See the COLA Impact section of this response for the table revisions and clarifying notes.

FIGURE 1



COLA Impact

COLA Part 2 FSAR has been revised as follows:

Table 7.4-1— Site-Specific Component Controls for Shutdown

Components	Normal Shutdown ¹	Safe/DBA Emergency Shutdown ²	FSAR Section Reference
Makeup Water Pump	No	Yes	9.2.5
Pump Discharge Isolation	No	Yes	9.2.5
Pump Minimum Flow Valve	No	Yes	9.2.5
Pump Discharge Strainer Blowdown	No	Yes	9.2.5
Traveling Screen	No	Yes	9.2.5
Traveling Screen Wash Isolation	No	Yes	9.4.15
Pump/Electrical Room Air	No	Yes	9.4.15
Pump/Electrical Room Air Cooled	No	Yes	9.4.15
Pump/Electrical Room Exhaust	No	No	9.4.15
Personnel Access to Electrical /Pump	No	No	9.4.15
Personnel Access to Electrical /Pump	No	No	9.4.15
Traveling Screen Room Exhaust	No	Yes	9.4.15
Traveling Screen Room Unit	No	Yes	9.4.15
Traveling Screen Room Air Inlet Isolation	No	Yes	9.4.15

- 1) A Normal Shutdown is any plant shutdown that does not require use of the Emergency UHS Makeup Water System to maintain UHS basin level.
- 2) An Emergency Shutdown is any plant shutdown that does require use of the Emergency UHS Makeup Water System to maintain UHS basin level.

Table 7.4-2— Site-Specific Indication for Shutdown

Componen ts	Normal Shutdown ¹	Safe/DBA Emergency Shutdown ²	FSAR Section Reference
Pump Discharge Pressure	No	Yes	9.2.5
Pump Discharge Flow	No	Yes	9.2.5
Pump Discharge Strainer Differential	No	Yes	9.2.5
Traveling Screen Differential	No	Yes	9.2.5
Screen Wash Supply	No	Yes	9.2.5
Pump Forebay Level	No	Yes	9.2.5

- 1) A Normal Shutdown is any plant shutdown that does not require use of the Emergency UHS Makeup Water System to maintain UHS basin level.
- 2) An Emergency Shutdown is any plant shutdown that does require use of the Emergency UHS Makeup Water System to maintain UHS basin level.

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Enclosure 2

**Table of Changes to CCNPP Unit 3 COLA
Associated with the Response to
RAI 402, Question 7.05-3,
Calvert Cliffs Nuclear Power Plant, Unit 3**

Table of Changes to CCNPP Unit 3 COLA
Associated with the Response to RAI No. 402

Change ID #	Subsection	Type of Change	Description of Change
Part 2 – FSAR			
12-0238	1.8.2, 7.4, 7.4.1.2, 7.4.1.2.12, 7.4.1.2.14, 7.6, 9.2.5.3.2, 9.2.5.4.2, 9.2.5.5, 9.2.5.7, 9.2.5.7.3, 9.2.5.7.3.1, 9.2.5.7.3.2, 9.4.15.5 and Tables 7.4-1 and 7.4-2	Incorporate COLA markups associated with the response to RAI 325 Question 07.05-1 ¹ .	The response to RAI 325 Question 07.05-1 adds a departure and makes multiple changes associated with the UHS Makeup Water System.
13-0083	Table 7.1-1, 9.2.5.3.2, and 9.2.5.7.3.2	Incorporate COLA markups associated with the supplemental response to RAI 325 Question 07.05-1 ² .	The Supplemental response to RAI 325 Question 07.05-1 adds a line item to Table 7.1-1, adds valve numbers to Section 9.2.5.3.2 and deletes information from Section 9.2.5.7.3.2.
13-0146	Tables 7.4-1 and 7.4-2	Incorporate COLA markups associated with the response to RAI 402 Question 07.05-3.	Revise table heading and added notes explaining heading intent (this response).

¹ UniStar Nuclear Energy Letter UN#12-151, 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 325, Information Systems Important to Safety, dated December 20, 2012

² UniStar Nuclear Energy Letter UN#13-060, from Mark T. Finley to Document Control Desk, U.S. NRC, Supplemental Response to Request for Additional Information for the Calvert Cliffs Nuclear Power Plant, Unit 3, RAI 325, Information Systems Important to Safety, dated April 30, 2013