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10 CFR 50.4
10 CFR 52.79

May 14, 2013

UN#13-064

ATTN: Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Subject: UniStar Nuclear Energy, NRC Docket No. 52-016
Supplemental Response to Request for Additional Information for the
Calvert Cliffs Nuclear Power Plant, Unit 3,
RAI 330, Ultimate Heat Sink

- References:
- 1) Surinder Arora (NRC) to Paul Infanger (UniStar Nuclear Energy), "Final RAI 330 SBPA 6212," email dated January 11, 2012
 - 2) UniStar Nuclear Energy Letter UN#12-153, 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 330, Ultimate Heat Sink, dated December 20, 2012

The purpose of this letter is to provide a supplemental response to the request for additional information (RAI) identified in the NRC e-mail correspondence to UniStar Nuclear Energy (UNE), dated January 11, 2012 (Reference 1). This RAI addresses the Ultimate Heat Sink, as discussed in Section 9.2.5 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, dated December 20, 2012, provided our original response to RAI 330, Question 09.02.05-20. The Reference 2 response provided the design approach for the CCNPP Unit 3 Ultimate Heat Sink (UHS) Makeup Water System.

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This supplement is motivated by feedback on the Reference 2 response provided at a public meeting on March 18, 2013. The feedback consisted of two typographical errors in the Reference 2 response and nine comments on the Reference 2 COLA markups.

Enclosure 1 provides our response to the feedback items and includes revised COLA content. Enclosure 2 provides the COLA figure impact of the supplemental response to RAI 330, Question 09.02.05-20. A Licensing Basis Document Change Request has been initiated to incorporate these changes into a future revision of the COLA.

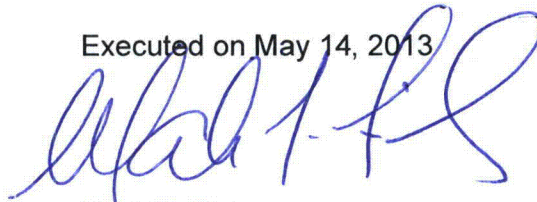
Enclosure 3 provides an updated table of changes to the CCNPP Unit 3 COLA associated with the RAI 330, Question 09.02.05-20 supplemental response.

This supplementary 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 May 14, 2013



Mark T. Finley

- Enclosures:
- 1) Supplemental Response to NRC Request for Additional Information, RAI 330, Question 09.02.05-20, Ultimate Heat Sink, Calvert Cliffs Nuclear Power Plant, Unit 3
 - 2) Figure Changes to CCNPP Unit 3 COLA Associated with the Supplemental Response to RAI No. 330, Question 09.02.05-20, Calvert Cliffs Nuclear Power Plant, Unit 3
 - 3) Table of Changes to CCNPP Unit 3 COLA Associated with the Supplemental Response to RAI 330, Question 09.02.05-20, 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

**Supplemental Response to
NRC Request for Additional Information,
RAI 330, Question 09.02.05-20,
Ultimate Heat Sink,
Calvert Cliffs Nuclear Power Plant, Unit 3**

NRC Feedback on UNE's Response to RAI 330, Question 09.02.05-20

UniStar Nuclear Energy (UNE) submitted the response to RAI 330, Question 09.02.05-20 in UNE letter UN#12-153¹. The NRC provided feedback on this response at a public meeting on March 18, 2013, requesting the supplemental information denoted below.

NRC Feedback Comments on Initial Response

- **Page 8/13** – typo 3.i should be 3.l.
- **Page 8/13** – typo 9.4.9 should be 2.4.9

FSAR Markup

- **Pages 60/137 and 61/137** – typo AA0007 should be A005.
- **Page 62, 63, 64, 65/137** – straining has 2 MOVs.
- **Page 74/137** – “valve opens” – consider changing to “auto” opens. Describe the signal to close the screen wash valve.
- **Page 85/137** – consider adding the forebay water level instruments that will be used to verify TS to Table 9.2-2. This table only has delta level instruments. Is there a low water level alarm for the UHS makeup pump basin?
- **Page 96/137** – what is the material for pump expansion joint
- **Page 96/137** – check valve missing #
- **Page 96/137** – dP missing #
- **Page 106/137 (Chapter 14)** – Item L. consider adding “automatically” to rotated and washed. Editor note, typo – 14.02-58? Not 14.02-28. Need corrected.
- **Page 136/137** – Table design area “3” – consider deleting since area 3 is not on the drawing.

Response to Feedback Comments on the RAI 330, Question 09.02.05-20 Reponse:

The response to RAI 330, Question 09.02.05-20 in UNE letter UN#12-153¹, contained a typographical error (typo 3.i should be 3.l.) in Enclosure 1, Part 2. The Enclosure 1, Part 2 wording of UN#12-153 should have been worded as indicated in the red-line strikeout below:

2. **Specifically describe the method of manual operations in the preoperational testing reference FSAR 14.2.14.2, items 3.I and 5.M program. Include the number of operators needed to be successful, with respect to designed differential pressures expected.**

With the Safety-Related and Seismic Category I classification of the traveling screens and screen wash system, manual local operations associated with the UHS Makeup Water traveling screens and screen wash system, are no longer required. The Main Control Room (MCR) operator will control the UHS Makeup Water System from the main control room. The UHS Makeup Water traveling screens and screen wash system are designed to operate starting 72 hours post design basis seismic event, to ensure a clear

¹ UniStar Nuclear Energy Letter UN#12-153, 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 330, Ultimate Heat Sink, dated December 20, 2012

flow path of makeup water to the UHS Makeup Water pumps is available to perform its safety function as described in CCNPP Unit 3 FSAR, Section 9.2.5. CCNPP Unit 3, Part 2, FSAR, Chapter 14, Subsection 14.2.14.2 Item 3.ii and 5.m are updated to verify the ability of the traveling screens to rotate and that the screen wash system will provide spray water to wash the traveling screens based on the designed differential level across the screens or determined timer basis.

The response to RAI 330, Question 09.02.05-20 in UNE letter UN#12-153¹, contained a typographical error (typo 9.4.9 should be 2.4.9) in Enclosure 1, Part 6. The Enclosure 1, Part 6 wording of UN#12-153 should have been worded as indicated in the red-line strikeout below:

6. Address failure mode and effects analysis of Duane Arnold (08/11/11) operating experiences related to the traveling screen condition that resulted and prevented the ability to rotate due to intrusion of sand and silt.

The Duane Arnold River Water Supply (RWS) traveling screens became inoperable on August 10, 2011 due to several feet of sand in the forebay and pump pit area, resulting in a high differential pressure on the intake traveling screens and their inability to rotate. The sand in the forebay was a result of the degraded/damaged spur dikes that caused the river flow to be different than considered in the original design. This resulted in abnormal amounts of sediment build-up in the area in front of the intake structure. In addition to the damaged spur dikes, river mapping was cancelled based on Intake Structure forebay inspections that revealed a more than adequate depth of water. Therefore, the inadequate management of river sediment buildup resulted in the RWS traveling screens inability to rotate due to sand.

The CCNPP Unit 3 UHS Makeup Water Intake Structure common forebay receives Chesapeake Bay water from two 100% capacity 60 inch safety-related pipes. These pipes draw Chesapeake Bay water from the Unit 3 Intake Area, where the center line of the pipes are located approximately 9 feet (2.7 meters) above the bottom of the Unit 3 Intake Area. The bottom of the intake area is maintained at an elevation of approximately -26 ft (-8.1 m) NGVD 29. The Unit 3 Inlet Area is sheltered from the Chesapeake Bay by the Unit 3 sheet pile wall and the Unit 1 and 2 baffle wall. The Unit 1 and 2 intake channel extends more than 4,500 ft (1,372 meters) offshore from the Unit 1 and 2 forebay. With the bottom on the Unit 3 inlet area sloping away from inlets of the safety-related pipes to the Unit 3 common forebay and a raised elevation of the pipe above the maintained bottom of the Unit 3 Inlet Area, the postulated intrusion of excess silt and sand to UHS Makeup Water traveling screen is not credible. As described in CCNPP Unit 3 FSAR Subsection 92.4.9 there is no potential blockage of the safety-related UHS Makeup Water intake due to channel diversions.

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Response to Feedback Comments on the RAI 330, Question 09.02.05-20 Response COLA Markup:

Comment: Pages 60/137 and 61/137 [Enclosure 2 of UN#12-153¹] – typo AA0007 should be AA005.

Response: Table 3.11-1 has been updated to reflect the correct Tag Number of the Train 2, 3 and 4 UHS Makeup Water Traveling Screen Wash Isolation Valve Motor Train 2/3/4 as, 30PED20AA005, 30PED30AA005, and 30PED40AA005 respectively.

Comment: Page 62, 63, 64, 65/137 [Enclosure 2 of UN#12-153¹] – straining has 2 MOVs.

Response: Tables 8.1-1, 8.1-2, 8.1-3 and 8.1-4 have been updated to reflect that the UHS Makeup Water Strainer has two motors associated with the description. The Load Description in each table is updated as, “UHS Makeup Water Strainer Motor Operator for the Backwash Arm & Motor Operator for Blowdown Valve (2 hp each)”.

Comment: Page 74/137 [Enclosure 2 of UN#12-153¹] – “valve opens” – consider changing to “auto” opens. Describe the signal to close the screen wash valve.

Response: FSAR Section 9.2.5.3.2 has been updated to reflect that the traveling screen wash isolation valve automatically opens on a differential water level across the screens or on a timer basis, once the UHS Makeup pump has established the minimum required pump flow. Also, Section 9.2.5.3.2 has been updated to include that the traveling screen wash isolation valve automatically closes once the differential water level across the screens is at normal operating level or when the timer sequence is completed.

Comment: Page 85/137 [Enclosure 2 of UN#12-153¹] – consider adding the forebay water level instruments that will be used to verify TS to Table 9.2-2. This table only has delta level instruments. Is there a low water level alarm for the UHS makeup pump basin?

Response: FSAR Table 9.2-2 has been revised to include the MCR/RSS Display of the ‘UHS Makeup Water Pump Forebay Level’ alarms associated with the UHS Makeup Water Pump forebay water level instrumentation. The UHS Makeup Water Traveling Screen downstream differential level instrumentation is used for the UHS Makeup Water pump forebay level. This revision to FSAR Table 9.2-2 was included in the Supplemental Response to RAI 336 Q09.02.05-23².

Comment: Page 96/137 [Enclosure 2 of UN#12-153¹] – what is the material for pump expansion joint

Response: The UHS Makeup Water Pump expansion joint material will be compatible with the UHS Makeup Water System water chemistry (Chesapeake Bay water) and will be from the NRC approved ASME Section III Material table.

Comment: Page 96/137 [Enclosure 2 of UN#12-153¹] – check valve missing #.

Response: FSAR Figure 9.2-9 has been revised to remove the check valve on the pump minimum flow recirculation line that is no longer required.

Comment: Page 96/137 [Enclosure 2 of UN#12-153¹] – dP missing #

² UniStar Nuclear Energy Letter UN#13-059, 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 336, Ultimate Heat Sink, dated April 30, 2013

Response: FSAR Figure 9.2-9 has been revised to include the tag number CP002, for the UHS Makeup Water Pump Discharge Strainer Differential Pressure Measurement Instrument.

Comment: Page 106/137 [Enclosure 2 of UN#12-153¹] (Chapter 14) – Item L. consider adding “automatically” to rotated and washed. Editor note, typo – 14.02-58? Not 14.02-28. Need corrected.

Response: FSAR Section 14.2.14.2, Part 1 - OBJECTIVES, item d has been revised to read, “To demonstrate the ability of the traveling screens to be automatically rotated and automatically washed off.” In addition, Section 14.2.14.2, Part 3 - TEST METHOD, item I has been revised to read, “Verify ability of the traveling screens to be automatically rotated and automatically washed off based on the design differential level across the traveling screens and timer basis.”

The ‘Editor’s Note’ included in Enclosure 2 of UN#12-153¹, indicated that the markups provided in black (text boxes, strike-throughs and black text) were markups from the Response to RAI 337 Q14.02-28. This ‘Editor’s Note’ should have indicated that the markups provided in black were from the Response to RAI 337 Q14.02-58³.

Comment: Page 136/137 [Enclosure 2 of UN#12-153¹] – Table design area “3” – consider deleting since area 3 is not on the drawing.

Response: Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC) Figure 2.4-1 has been revised to remove the ‘Design Area’ classification 3 from the table included in the figure.

³ UniStar Nuclear Energy Letter UN#12-157, 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 337, Initial Plant Test Program - Design Certification and New License Applicants, dated December 20, 2012

COLA Impact

FSAR Table 3.11-1 has being updated as follows:

Table 3.11-1 - {Site-Specific Environmentally Qualified Electrical/I&C Equipment}
(Page 4 of 11)

[illegible]

(Page 6 of 11)

[illegible]

Table 3.11-1 - {Site-Specific Environmentally Qualified Electrical/I&C Equipment}
(Page 8 of 11)

[illegible]

FSAR Table 8.1-1, "Division 1 Emergency Diesel Generator Nominal Loads," has been revised as shown below. The "UHS Makeup Water Isolation MOV" row which is shown reestablished below was inadvertently deleted in COLA Revision 9.

Table 8.1-1 - {Division 1 Emergency Diesel Generator Nominal Loads}

Time Sequence (sec)	Load Description	Volts	Rating (hp/ kW)	Operating Load LOOP (kW)	Operating Load DBA/LOOP (kW)
Load Step Group 1 (Note 1)					
15 (Note 2)	Air Handling Unit Fan for UHS Makeup Water Intake Structure	480	5 hp	4.1	4.1
15 (Note 2)	Air-cooled Condenser for UHS Makeup Water Intake Structure	480	10 kW	10	10
15 (Note 2)	UHS Makeup Water Traveling Screen Room Vane Axial Fan	480	1 hp	0.9	0.9
15 (Note 2)	UHS Makeup Water Traveling Screen Room Unit Heater	480	7 kW	0	0
15 (Note 2)	Air Handling Unit Electrical Coils for UHS Makeup Water Intake Structure	480	39 kW	0	0
<u>15 (Note 3)</u>	<u>UHS Makeup Water Isolation MOV</u>	<u>480</u>	<u>2 hp</u>	<u>0</u>	<u>0</u>
15 (Note 3)	UHS Makeup Water Minimum Flow Recirculation MOV	480	2 hp	0	0
15 (Note 3)	UHS Makeup Water Strainer Motor Operator for Backwash Arm & Motor Operator for Blowdown Valve MOVs (2 MOVs, (2 hp each)	480	4 hp	0	0
15 (Note 4)	Estimated Cable Losses		2 kW	2	2
15 (Note 4)	UHS Makeup Water System Transformer Losses and MCC equipment losses		7 kW	7	7
15	Allowance for future small loads		5 kW	5	5
Subtotal of Additional Loads for Load Step Group 1				29.0	29.0
...					

FSAR Table 8.1-2, "Division 2 Emergency Diesel Generator Nominal Loads," has been revised as shown below:

Table 8.1-2 - {Division 2 Emergency Diesel Generator Nominal Loads}

Time Sequence (sec)	Load Description	Volts	Rating (hp/ kW)	Operating Load LOOP (kW)	Operating Load DBA/LOOP (kW)
Load Step Group 1 (Note 1)					
15 (Note 2)	Air Handling Unit Fan for UHS Makeup Water Intake Structure	480	5 hp	4.1	4.1
15 (Note 2)	Air-cooled Condenser for UHS Makeup Water Intake Structure	480	10 kw	10	10
15 (Note 2)	UHS Makeup Water Traveling Screen Room Vane Axial Fan	480	1 hp	0.9	0.9
15 (Note 2)	UHS Makeup Water Traveling Screen Room Unit Heater	480	7 kW	0	0
15 (Note 2)	Air Handling Unit Electrical Coils for UHS Makeup Water Intake Structure	480	39 kW	0	0
15 (Note 3)	UHS Makeup Water Isolation MOV	480	2 hp	0	0
15 (Note 3)	UHS Makeup Water Minimum Flow Recirculation MOV	480	2 hp	0	0
15 (Note 3)	UHS Makeup Water Strainer Motor Operator for Backwash Arm & Motor Operator for Blowdown Valve MOVs (2 MOVs, (2 hp each)	480	4 hp	0	0
15 (Note 4)	Estimated Cable Losses		2 kw	2	2
15 (Note 4)	UHS Makeup Water System Transformer Losses and MCC equipment losses		7 kw	7	7
15	Allowance for future small loads		5 kw	5	5
Subtotal of Additional Loads for Load Step Group 1				29.0	29.0
...					

FSAR Table 8.1-3, "Division 3 Emergency Diesel Generator Nominal Loads," has been revised as shown below:

Table 8.1-3 - {Division 3 Emergency Diesel Generator Nominal Loads}

Time Sequence (sec)	Load Description	Volts	Rating (hp/ kW)	Operating Load LOOP (kW)	Operating Load DBA/LOOP (kW)
Load Step Group 1 (Note 1)					
15 (Note 2)	Air Handling Unit Fan for UHS Makeup Water Intake Structure	480	5 hp	4.1	4.1
15 (Note 2)	Air-cooled Condenser for UHS Makeup Water Intake Structure	480	10 kW	10	10
15 (Note 2)	UHS Makeup Water Traveling Screen Room Vane Axial Fan	480	1 hp	0.9	0.9
15 (Note 2)	UHS Makeup Water Traveling Screen Room Unit Heater	480	7 kW	0	0
15 (Note 2)	Air Handling Unit Electrical Coils for UHS Makeup Water Intake Structure	480	39 kW	0	0
15 (Note 3)	UHS Makeup Water Isolation MOV	480	2 hp	0	0
15 (Note 3)	UHS Makeup Water Minimum Flow Recirculation MOV	480	2 hp	0	0
15 (Note 3)	UHS Makeup Water Strainer Motor Operator for Backwash Arm & Motor Operator for Blowdown Valve MOVs (2 MOVs, (2 hp each)	480	4 hp	0	0
15 (Note 4)	Estimated Cable Losses		2 kW	2	2
15 (Note 4)	UHS Makeup Water System Transformer Losses and MCC equipment losses		7 kW	7	7
15	Allowance for future small loads		5 kW	5	5
Subtotal of Additional Loads for Load Step Group 1				29.0	29.0
...					

FSAR Table 8.1-4, "Division 4 Emergency Diesel Generator Nominal Loads," has been revised as shown below. The "UHS Makeup Water Initial Fill Isolation MOV" row is shown struck below to be consistent with Tables 8.1-1, -2, and -3. This row should have been struck through in the response to RAI 330, Question 09.02.05-20 in UNE letter UN#12-153¹.

Table 8.1-4 - {Division 4 Emergency Diesel Generator Nominal Loads}

Time Sequence (sec)	Load Description	Volts	Rating (hp/ kW)	Operating Load LOOP (kW)	Operating Load DBA/LOOP (kW)
Load Step Group 1 (Note 1)					
15 (Note 2)	Air Handling Unit Fan for UHS Makeup Water Intake Structure	480	5 hp	4.1	4.1
15 (Note 2)	Air-cooled Condenser for UHS Makeup Water Intake Structure	480	10 kW	10	10
15 (Note 2)	UHS Makeup Water Traveling Screen Room Vane Axial Fan	480	1 hp	0.9	0.9
15 (Note 2)	UHS Makeup Water Traveling Screen Room Unit Heater	480	7 kW	0	0
15 (Note 2)	Air Handling Unit Electrical Coils for UHS Makeup Water Intake Structure	480	39 kW	0	0
15 (Note 3)	UHS Makeup Water Isolation MOV	480	2 hp	0	0
15 (Note 3)	UHS Makeup Water Minimum Flow Recirculation MOV	480	2 hp	0	0
15 (Note 3)	UHS Makeup Water Initial Fill Isolation MOV	480	2 hp	0	0
15 (Note 3)	UHS Makeup Water Strainer Motor Operator for Backwash Arm & Motor Operator for Blowdown Valve MOVs (2 MOVs, 2 hp each)	480	4 hp	0	0
15 (Note 4)	Estimated Cable Losses		2 kW	2	2
15 (Note 4)	UHS Makeup Water System Transformer Losses and MCC equipment losses		7 kW	7	7
15	Allowance for future small loads		5 kW	5	5
Subtotal of Additional Loads for Load Step Group 1				29.0	29.0
...					

FSAR Section 9.2.5.3.2 has been updated as follows:

9.2.5.3.2 Piping, Valves, and Fittings

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UHS Makeup Water System Isolation Valves

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The UHS Makeup water traveling screen wash isolation valve, 30PED10/20/30/40 AA005 is closed during normal plant operation. The traveling screen wash isolation valve automatically opens on a differential water level across the screens or on a timer basis, once the UHS Makeup pump has established the minimum required pump flow. With the traveling screen wash isolation valve open, pressurized water cleans the traveling screens of debris as the screens rotate. The traveling screen wash isolation valve automatically closes once the differential water level across the screens is at normal operating level or when the timer sequence is completed.

The UHS Makeup Water pump discharge strainer blowdown isolation valve, 30PED10/20/30/40 AA006, is cycled open and shut automatically as necessary during UHS Makeup Water System pump operation to provide a flow path for debris removal from the pump discharge strainer during the automatic backwash cycle. The pressure relief backwash process of the filter is initiated by either the signal of differential pressure measuring system, a timer, after the start of the UHS Makeup Water pump, or via manual operator initiation. The pump discharge strainer blowdown isolation valve opens and the drive motor is energized.

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FSAR Table 9.2-2 has been updated as shown in green text below. This revision to FSAR Table 9.2-2 was included in the Supplemental Response to RAI 336, Question 09.02.05-23².

Table 9.2-2— {UHS Makeup Water System Alarm Summary}

MCR/RSS Display	Division	Setpoint Name	Function
...
UHS Makeup Water traveling screen abnormal (bearing temperature Hi)	1/2/3/4	Max 2	Max 2: Alarm and Traveling Screen Trip
		Max 1	Max 1: Alarm
UHS Makeup Water System Heat Tracing Failure	1/2/3/4	Max 1	Max 1: Alarm (Alerts operator of equipment failure)
<u>UHS Makeup Water Pump Forebay Level</u>	<u>1/2/3/4</u>	<u>Min 1</u>	<u>Min 1: Alarm (Alerts operator of low water level in UHS Makeup Water Forebay)</u>

		<u>Min 2</u>	<u>Min 2: Alarm (Alerts operator that UHS Makeup Water Forebay is at or above Technical Specification Low Water Level)</u>
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FSAR Section 14.2.14.2 has been updated as follows:

14.2.14.2 Ultimate Heat Sink (UHS) Makeup Water System

1. OBJECTIVES

- a. To demonstrate the ability of the UHS Makeup Water System to supply makeup water as designed.
- b. To establish baseline performance data for future equipment surveillance and ISI.
- c. Verify electrical independence and redundancy of safety-related power supplies.
- d. To demonstrate the ability of the traveling screens to be automatically rotated and automatically washed off.

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3. TEST METHOD

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- k. Verify electrical independence and redundancy of power supplies for safety-related functions.
- l. Verify ability of the traveling screens to be automatically rotated and automatically washed off based on the design differential level across the traveling screens and timer basis.
- m. Verify adequate system alignment to perform back flushing.

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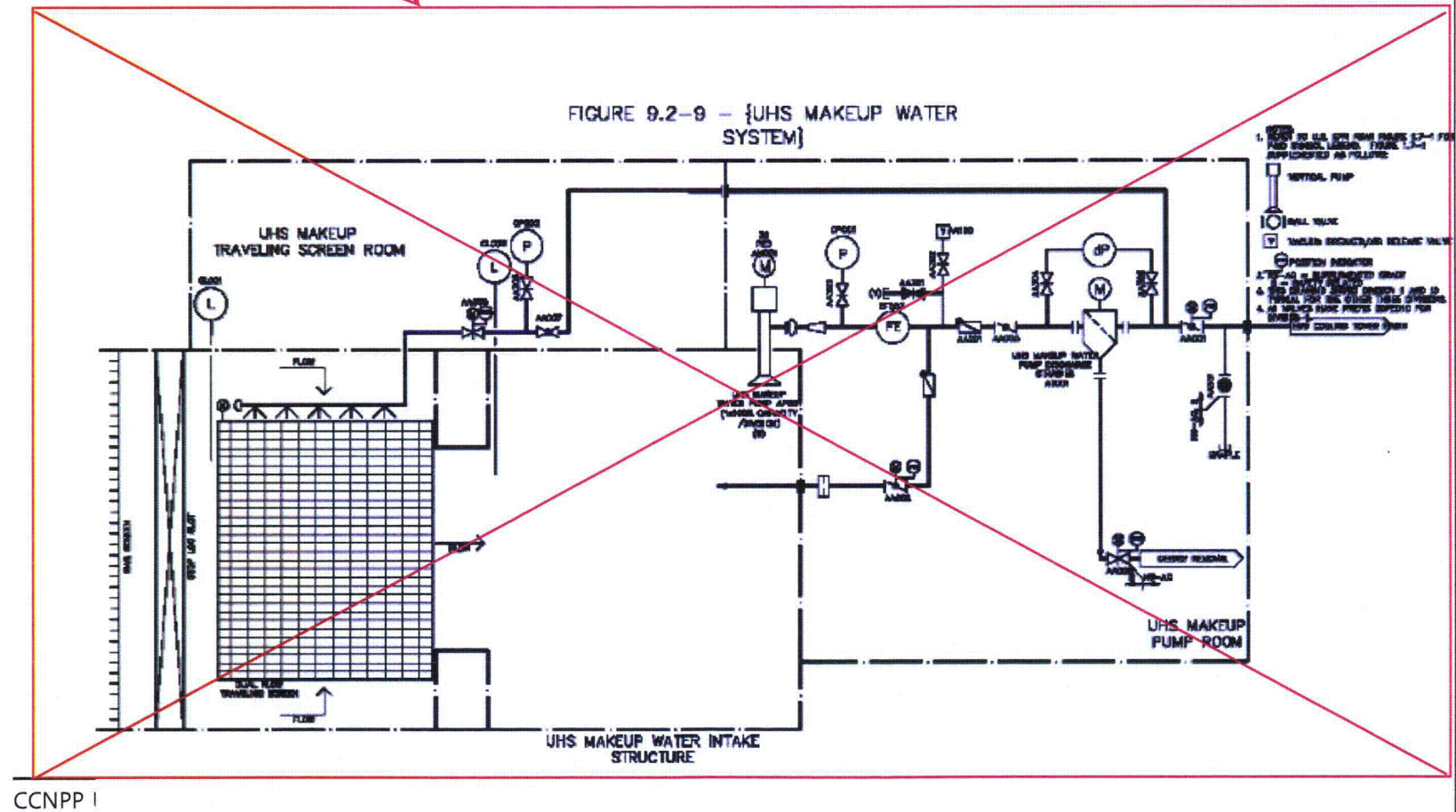
Enclosure 2 provides the COLA impact to FSAR Figure 9.2-9 and to Part 10 ITAAC Figure 2.4-1 of the supplemental response to RAI 330, Question 09.02.05-20.

Enclosure 2

**Figure Changes to CCNPP Unit 3 COLA Associated with the Supplemental Response to
RAI No. 330, Question 09.02.05-20,
Calvert Cliffs Nuclear Power Plant, Unit 3**

Figure 9.2-9— {UHS Makeup Water System}

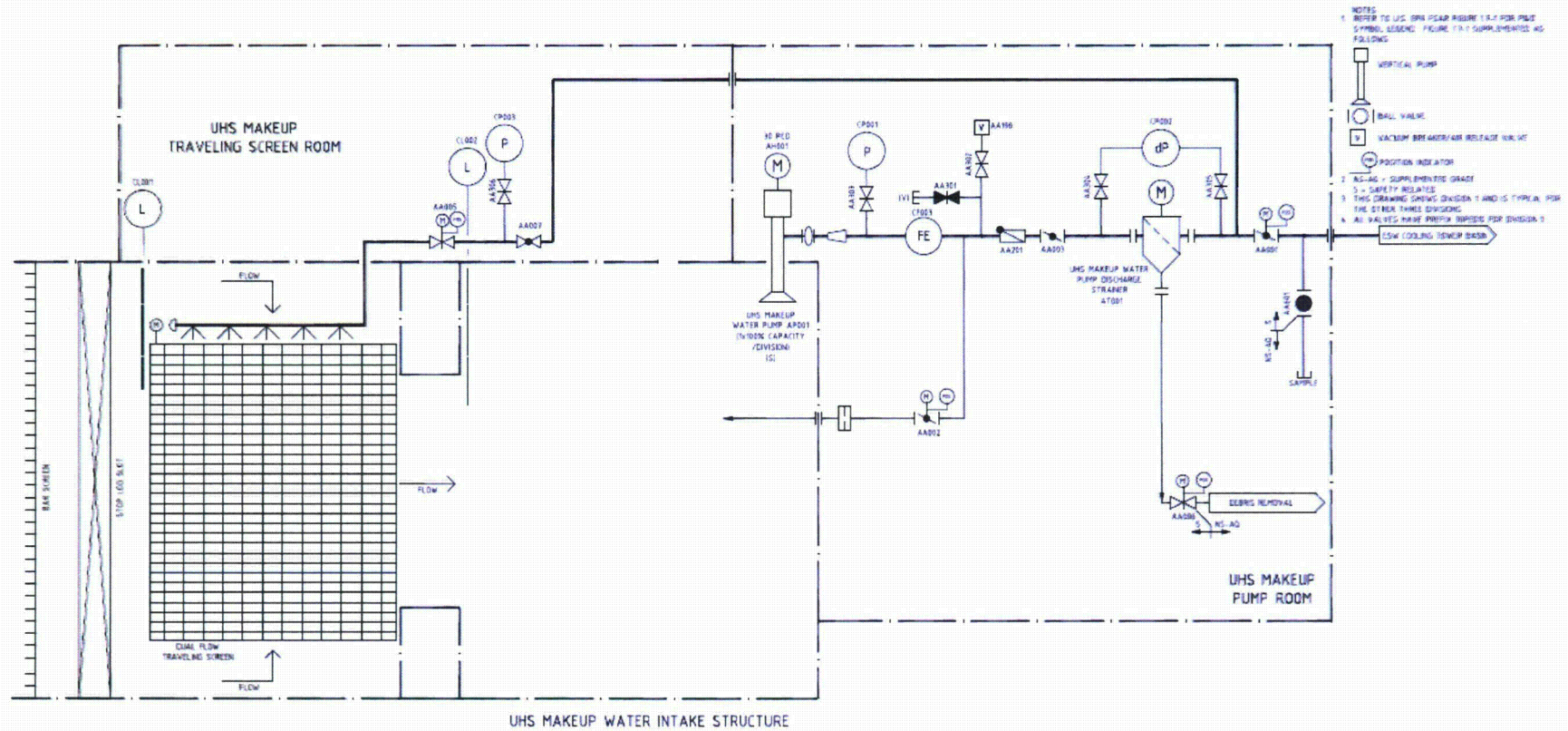
Editors Note: See insert for
Updated FSAR Figure 9.2-9.



FSAR: Chapter 9.0

**Editors Note: FSAR Figure 9.2-9
Insert, for Supplemental RAI 330
Response.**

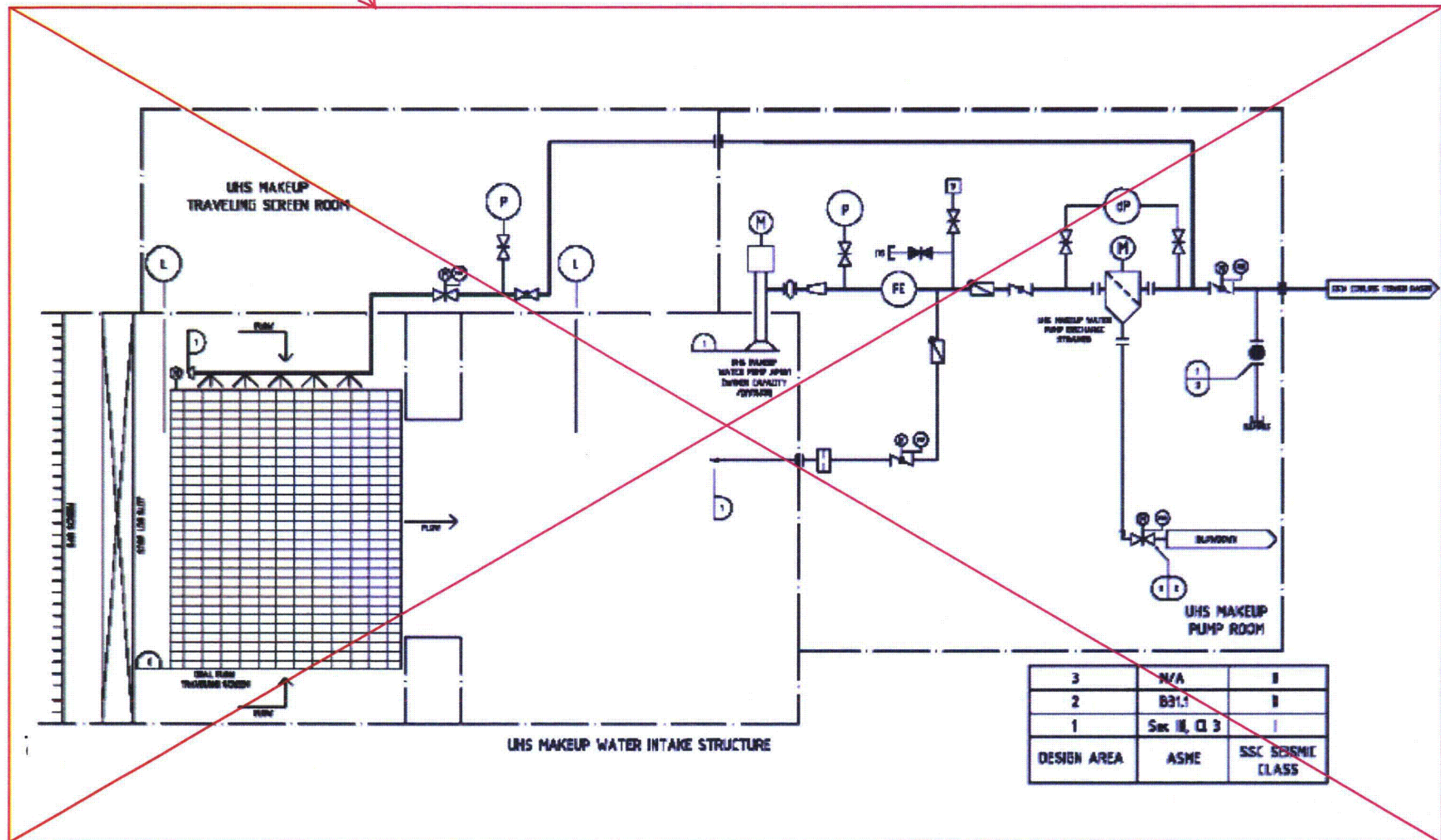
Figure 9.2-9— (UHS Makeup Water System)



Part 10: ITAAC

Figure 2.4-1— {Ultimate Heat Sink Makeup Water System Functional Arrangement}

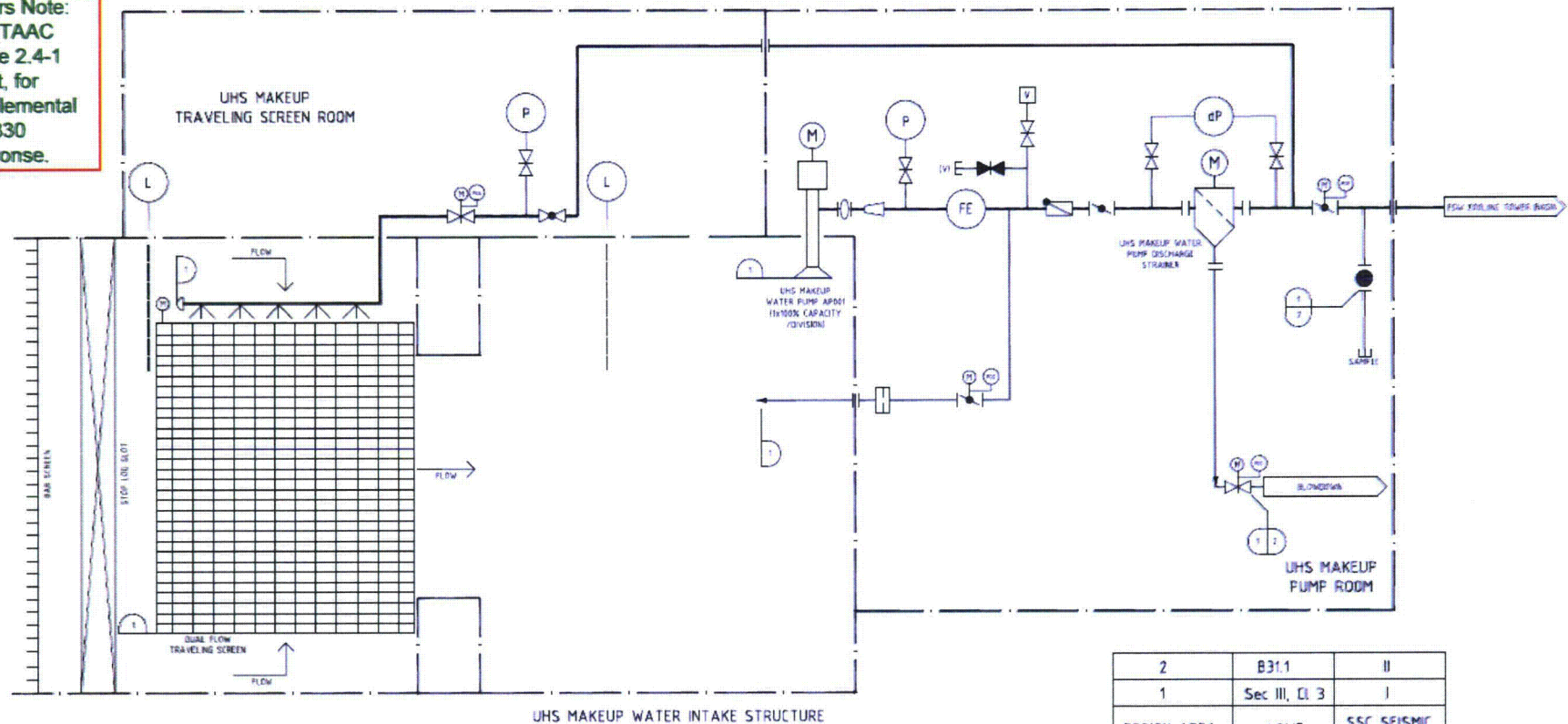
Editors Note: See Insert
for Updated ITAAC Figure
2.4-1



Part 10: ITAAC

Figure 2.4-1— {Ultimate Heat Sink Makeup Water System Functional Arrangement}

Editors Note:
See ITAAC
Figure 2.4-1
Insert, for
Supplemental
RAI 330
Response.



2	B31.1	II
1	Sec III, Cl. 3	I
DESIGN AREA	ASME	SSC SEISMIC CLASS

Enclosure 3

**Table of Changes to CCNPP Unit 3 COLA
Associated with the Supplemental Response to
RAI 330, Question 09.02.05-20,
Calvert Cliffs Nuclear Power Plant, Unit 3**

Table of Changes to CCNPP Unit 3 COLA
Associated with the Supplemental Response to RAI No. 330

Change ID #	Subsection	Type of Change	Description of Change
Part 2 – FSAR			
CC3-10-0302	2.4.1.1	Incorporate COLA markups associated with the response to RAI 253, Questions 03.07.02-42, 43, 44, 47, 48, 52, and 53.	Text is added to the fifth paragraph of Section 2.4.1.1 involving the first level of the UHS makeup water pump house building as part of the response to RAI 253, Questions 03.07.02-42, 43, 44, 47, 48, 52, and 53 ⁴ .
CC3-12-0164	Table 3.2-1	Incorporate COLA markups associated with the response to RAI 358, Question 03.02.01-6.	Various revisions are made to Table 3.2-1 as part of the response to RAI 358, Question 03.02.01-6 ⁵ .
CC3-11-0221	Table 3.2-1	Incorporate COLA markups associated with the response to RAI 253, Question 03.07.02-45.	Seismic Category “II-SSE” was removed from Table 3.2-1 as part of the response to RAI 253, Question 03.07.02-45 ⁶ .
GN-09-0279	Table 3.2-1	Incorporation of DCD Revision 1 changes.	Various commercial codes entered as part of the incorporation of DCD Revision 1 changes.
CC3-10-0302	3.4.3.10, and 3.7.2.2.3	Incorporate COLA markups associated with the response to RAI 253, Questions 03.07.02-42, 43, 44, 47, 48, 52, and 53.	Text which mentions the UHS Electrical Building is struck as part of the response to RAI 253, Questions 03.07.02-42, 43, 44, 47, 48, 52, and 53 ⁴ .

⁴UniStar 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 Analyses, dated November 16, 2010.

⁵UniStar Nuclear Energy Letter UN#12-095, 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 358, Seismic Classification, dated September 20, 2012.

⁶UniStar Nuclear Energy Letter UN#12-055, 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 253, Seismic System Analyses, dated June 21, 2012.

Change ID #	Subsection	Type of Change	Description of Change
CC3-12-0241	3.8.4.1.11	Incorporate COLA markups associated with the response to RAI 253, Questions 03.07.02-42, 43, 44, 47, 48, 52, and 53.	The second bullet was modified and the third bullet was added as part of the response to RAI 253, Questions 03.07.02-42, 43, 44, 47, 48, 52, and 53 ⁴ .
CC3-12-0142	Table 3.9-2	Incorporate COLA markups associated with the response to RAI 340, Questions 03.09.06-3, 03.09.06-4, 03.09.06-5.	The response to RAI 340, Questions 03.09.06-3, 03.09.06-4, 03.09.06-5 ⁷ included changes to Table 3.9-2 for the UHS Makeup Water Test Bypass Isolation Valves (four trains).
CC3-12-0223	Table 3.9-2	Incorporate COLA markups associated with the response to RAI 348, Questions 09.02.05-28 and 09.02.05-29.	The "Test Required" and the "Test Frequency" are revised for the UHS Makeup Water Test Bypass Isolation Valves (four trains) as part of the RAI 348, Question 09.02.05-28 ⁸ response.
CC3-11-0221	Table 3.10-1	Incorporate COLA markups associated with the response to RAI 253, Question 03.07.02-45.	Seismic Category "II-SSE" was removed from Table 3.10-1 as part of the response to RAI 253, Question 03.07.02-45 ⁶ .
CC3-11-0221	Table 3.11-1	Incorporate COLA markups associated with the response to RAI 253, Question 03.07.02-45.	Seismic Category "II-SSE" was removed from Table 3.11-1 as part of the response to RAI 253, Question 03.07.02-45 ⁶ .

⁷UniStar Nuclear Energy Letter UN#12-077, 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 340, Functional Design Qualification and Inservice Testing Programs for Pumps, Valves, and Dynamic Restraints, dated July 26, 2012

⁸UniStar Nuclear Energy Letter UN#12-147, 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 348, Ultimate Heat Sink, dated December 11, 2012.

Change ID #	Subsection	Type of Change	Description of Change
CC3-13-0084	Table 3.11-1	Incorporate COLA markups associated with the Supplemental RAI 330, Question 09.02.05-20 response (this response).	Table 3.11-1 has been updated to reflect the correct Tag Number of the Train 2, 3 and 4 UHS Makeup Water Traveling Screen Wash Isolation Valve Motor Train 2/3/4 as part of the Supplemental RAI 330, Question 09.02.05-20 response (this response).
CC3-12-0241	Tables 8.1-1, -2, -3, and -4	Incorporate COLA markups associated with the response to RAI 279, Question 09.02.05-12.	The load numbers in Tables 8.1-1, -2, -3, and -4 were updated as part of the RAI 279, Question 09.02.05-12 ⁹ response.
CC3-13-0084	Tables 8.1-1, -2, -3, and -4	Incorporate COLA markups associated with the Supplemental RAI 330, Question 09.02.05-20 response (this response).	Tables 8.1-1, 8.1-2, 8.1-3 and 8.1-4 have been updated to reflect that the UHS Makeup Water Strainer has two motors associated with the description. The Load Description in each table is updated as, "UHS Makeup Water Strainer Motor Operator for the Backwash Arm & Motor Operator for Blowdown Valve (2 hp each)" as part of the Supplemental RAI 330, Question 09.02.05-20 response (this response).
CC3-11-0096	9.2.5.1	Incorporate COLA markups associated with the response to RAI 277, Question 09.02.01-1.	The paragraph which indicates that the UHS Makeup pump provides up to 750 gpm was added as part of the RAI 277, Question 09.02.01-1 ¹⁰ response.
CC3-11-0103	9.2.5.2.3	Incorporate COLA markups associated with the response to RAI 288, Question 02.04.11-1.	The response to RAI 288, Question 02.04.11-1 ¹¹ included a change to the first paragraph in FSAR Section 9.2.5.2.3. Text was added involving the predicted minimum low water level in the Chesapeake Bay.

⁹UniStar Nuclear Energy Letter UN#11-287, 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 279, Ultimate Heat Sink, dated November 21, 2011.

¹⁰UniStar Nuclear Energy Letter UN#11-123, 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 277, Essential Service Water System, dated April 1, 2011.

¹¹UniStar Nuclear Energy Letter UN#11-149, 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 288, Low Water Considerations, dated May 4, 2011.

Change ID #	Subsection	Type of Change	Description of Change
CC3-12-0142	9.2.5.3.2	Incorporate COLA markups associated with the response to RAI 340, Questions 03.09.06-3, 03.09.06-4, 03.09.06-5.	The response to RAI 340, Question 03.09.06-3 ¹² added text regarding traveling screen sizing under the heading, "UHS Makeup Water Intake Structure Bar Screens and Traveling Screens."
CC3-11-0173	9.2.5.3.2	Incorporate COLA markups associated with the response to RAI 279, Question 09.02.05-9.	The response to RAI 279, Question 09.02.05-9 ¹³ added the second paragraph under the heading, "UHS Makeup Water System Pumps."
CC3-12-0223	9.2.5.3.2	Incorporate COLA markups associated with the response to RAI 348, Questions 09.02.05-28 and 09.02.05-29.	The first paragraph under the heading, "UHS Makeup Water System Isolation Valves" of FSAR Subsection 9.2.5.3.2, has been revised to reflect the test bypass isolation valve as a manual valve as part of the RAI 348, Question 09.02.05-28 ⁸ response.
CC3-11-0116	9.2.5.3.2	Incorporate COLA markups associated with the response to RAI 279, Questions 09.02.05-5, 09.02.05-8, and 09.02.05-14.	The response to RAI 279, Question 09.02.05-5 ¹⁴ added text regarding DBA mitigation under the heading, "Screen Wash System Components."

¹²UniStar Nuclear Energy Letter UN#12-077, 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 340, Functional Design Qualification and Inservice Testing Programs for Pumps, Valves, and Dynamic Restraints, dated July 26, 2012

¹³UniStar Nuclear Energy Letter UN#11-260, 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 279, Ultimate Heat Sink, dated September 29, 2011.

¹⁴UniStar Nuclear Energy Letter UN#11-173, 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 279, Ultimate Heat Sink, dated June 3, 2011.

Change ID #	Subsection	Type of Change	Description of Change
CC3-13-0084	9.2.5.3.2	Incorporate COLA markups associated with the Supplemental RAI 330, Question 09.02.05-20 response (this response).	FSAR Section 9.2.5.3.2 has been updated to reflect that the traveling screen wash isolation valve automatically opens on a differential water level across the screens or on a timer basis, once the UHS Makeup pump has established the minimum required pump flow. Also, Section 9.2.5.3.2 has been updated to include that the traveling screen wash isolation valve automatically closes once the differential water level across the screens is at normal operating level or when the timer sequence is completed. These changes were made as part of the Supplemental RAI 330, Question 09.02.05-20 response (this response).
CC3-10-0009	9.2.5.4.2	Incorporate COLA markups associated with the response to RAI 182, Question 03.02.02-1.	The response to RAI 182, Question 03.02.02-1 ¹⁵ included a change regarding manual rotation and cleaning of traveling screens under the heading, "Abnormal Operating Conditions."
CC3-10-0302	9.2.5.5	Incorporate COLA markups associated with the response to RAI 253, Questions 03.07.02-42, 43, 44, 47, 48, 52, and 53.	Text is added in the bullet which discusses the UHS Makeup Water System pump as part of the response to RAI 253, Questions 03.07.02-42, 43, 44, 47, 48, 52, and 53 ⁴ .
CC3-11-0124	9.2.5.6	Incorporate COLA markups associated with the response to RAI No. 279 Questions 09.02.05-6, 09.02.05-10, 09.02.05-13, and 09.02.05-15.	Four paragraphs were added to Section 9.2.5.6 as part of the RAI No. 279 Question 09.02.05-13 ¹⁶ response.

¹⁵UniStar Nuclear Energy Letter UN#10-062, 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 182, System Quality Group Classification, dated March 12, 2010.

¹⁶UniStar Nuclear Energy Letter UN#11-197, 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 279, Ultimate Heat Sink, dated June 30, 2011.

Change ID #	Subsection	Type of Change	Description of Change
CC3-12-0243	9.2.5.7.1	Incorporate COLA markups associated with the response to RAI 336, Question 09.02.05-24.	Two bullet items were added as a result of the RAI 336, Question 09.02.05-24 ¹⁷ response.
CC3-12-0243	9.2.5.7.2	Incorporate COLA markups associated with the response to RAI 336, Question 09.02.05-24.	One bullet items was added as a result of the RAI 336, Question 09.02.05-24 ¹⁷ response.
CC3-11-0137	Table 9.2-2	Incorporate COLA markups associated with the response to RAI 279, Question 09.02.05-7.	Table 9.2-2 was added in the response to RAI 279, Question 09.02.05-7 ¹⁸
CC3-10-0009	Figure 9.2-4, -5, -6	Incorporate COLA markups associated with the response to RAI 182, Question 03.02.02-1.	The response to RAI 182, Question 03.02.02-1 ¹⁵ provided replacement figures for FSAR Figure 9.2-4, General Area – UHS Makeup Water and CW Intake Structure, FSAR Figure 9.2-5, UHS Makeup Water Intake Structure – Plan View, and FSAR Figure 9.2-6, UHS Makeup Water Intake Structure – Section View.
CC3-11-0137	Figure 9.2-9	Incorporate COLA markups associated with the response to RAI 279, Question 09.02.05-7.	Figure 9.2-9 was revised in the response to RAI 279, Question 09.02.05-7 ¹⁸ .
CC3-13-0084	Figure 9.2-9	Incorporate COLA markups associated with the Supplemental RAI 330, Question 09.02.05-20 response (this response).	FSAR Figure 9.2-9 has been revised to remove the check valve on the pump minimum flow recirculation line that is no longer required. FSAR Figure 9.2-9 has also been revised to include the tag number CP002, for the UHS Makeup Water Pump Discharge Strainer Differential Pressure Measurement Instrument. These changes were made as part of the Supplemental RAI 330, Question 09.02.05-20 response (this response).

¹⁷UniStar Nuclear Energy Letter UN#12-156, 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 336, Ultimate Heat Sink, dated December 20, 2012

¹⁸UniStar Nuclear Energy Letter UN#11-230, 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 279, Ultimate Heat Sink, dated August 19, 2011

Change ID #	Subsection	Type of Change	Description of Change
CC3-10-0302	9.4.15.1, 9.4.15.2.1, 9.4.15.2.2, 9.4.15.2.3, 9.4.15.3, Figure 9.4-2, 14.2.14.2, 14.2.14.8, Table 14.3-1	Incorporate COLA markups associated with the response to RAI 253, Questions 03.07.02-42, 43, 44, 47, 48, 52, and 53.	Sections 9.4.15.1, 9.4.15.2.1, 9.4.15.2.2, 9.4.15.2.3, 9.4.15.3, Figure 9.4-2 were revised as part of the response to RAI 253, Questions 03.07.02-42, 43, 44, 47, 48, 52, and 53 ⁴ .

Change ID #	Subsection	Type of Change	Description of Change
CC3-12-0241	FSAR Sections 2.4.1.1, 2.4.10, 2.4.14.1, Table 3.2-1, 3.4.3.10, 3.7.2.2.3, 3.8.4.1.11, Table 3.9-2, Table 3.10-1, Table 3.11-1, Table 8.1-1, Table 8.1-2, Table 8.1-3, Table 8.1-4, 9.2.5.1, 9.2.5.2.3, 9.2.5.3.2, 9.2.5.4.1, 9.2.5.4.2, 9.2.5.5, 9.2.5.6, 9.2.5.7.1, 9.2.5.7.2, Table 9.2-2, Figure 9.2-4, Figure 9.2-5, Figure 9.2-6, Figure 9.2-8, Figure 9.2-9, 9.4.15.1, 9.4.15.2.1, 9.4.15.2.2, 9.4.15.2.3, 9.4.15.3, Figure 9.4-2, 14.2.14.2, 14.2.14.8, Table 14.3-1, Table 14.3-3.	Incorporate COLA markups associated with the response to RAI 330, Question 09.02.05-20 ¹ .	The response to RAI 330, Question 09.02.05-20 ¹ involves updating the UHS Makeup Water traveling screen classification to Safety-Related and Seismic Category I in the applicable CCNPP Unit 3 Part 2, FSAR sections and Part 10, ITAAC Tables.

Change ID #	Subsection	Type of Change	Description of Change
CC3-13-0084	14.2.14.2	Incorporate COLA markups associated with the Supplemental RAI 330, Question 09.02.05-20 response (this response).	FSAR Section 14.2.14.2, Part 1 - OBJECTIVES, item d has been revised to read, "To demonstrate the ability of the traveling screens to be automatically rotated and automatically washed off." In addition, Section 14.2.14.2, Part 3 - TEST METHOD, item I has been revised to read, "Verify ability of the traveling screens to be automatically rotated and automatically washed off based on the design differential level across the traveling screens and timer basis." These changes were made as part of the Supplemental RAI 330, Question 09.02.05-20 response (this response).
Part 10 – Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC) and ITAAC Closure			
CC3-10-0124	Table 2.4-7	Incorporate COLA markups associated with the response to RAI 118.	RAI 330 response modifies portions of ITAAC Table 2.4-7 from UN#10-160 RAI Set 118 ¹⁹ , to address the revised structures and components.
CC3-10-0124	Table 2.4-20	Incorporate COLA markups associated with the response to RAI 118.	RAI 330 response modifies portions of ITAAC Table 2.4-20 from UN#10-160 RAI Set 118 ¹⁹ , to address the revised structures and components.
CC3-10-0124	Table 2.4-22	Incorporate COLA markups associated with the response to RAI 118.	RAI 330 response modifies portions of ITAAC Table 2.4-22 from UN#10-160 RAI Set 118 ¹⁹ , to address the revised structures and components.
CC3-11-0129	Table 2.4-28	Incorporate COLA markups associated with the response to RAI 279 Q09.02.05-11 and Q09.02.05-17.	ITAAC Table 2.4-28 was revised as part of the response to RAI 279 Q09.02.05-11 and Q09.02.05-17 ²⁰ .
CC3-10-0124	Table 2.4-29	Incorporate COLA markups associated with the response to RAI 118.	RAI 330 response modifies portions of ITAAC Table 2.4-29 from UN#10-160 RAI Set 118 ¹⁹ , to address the revised structures and components.

¹⁹UniStar Nuclear Energy Letter UN#10-160, 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 118, Structural and Systems Engineering - Inspections, Tests, Analyses, and Acceptance Criteria, dated June 18, 2010

²⁰UniStar Nuclear Energy Letter UN#11-213, 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 279, Ultimate Heat Sink, dated July 29, 2011

Change ID #	Subsection	Type of Change	Description of Change
CC3-10-0302	Figure 2.4-1 and Figure 2.4-2	Incorporate COLA markups associated with the response to RAI 253, Questions 03.07.02-42, 43, 44, 47, 48, 52, and 53.	Figure 2.4-1 was replaced and Figure 2.4-2 was added as part of the response to RAI 253, Questions 03.07.02-42, 43, 44, 47, 48, 52, and 53 ⁴ .
CC3-12-0241	Table 2.4-7, Table 2.4-20, Table 2.4-22, Table 2.4-28, Table 2.4-29, Table 2.4-35, Figure 2.4-1, and Figure 2.4-2.	Incorporate COLA markups associated with the response to RAI 330, Question 09.02.05-20 ¹ .	The response to RAI 330, Question 09.02.05-20 ¹ involves updating the UHS Makeup Water traveling screen classification to Safety-Related and Seismic Category I in the applicable CCNPP Unit 3 Part 2, FSAR sections and Part 10, ITAAC Tables and Figures.
CC3-13-0084	Figure 2.4-1	Incorporate COLA markups associated with the Supplemental RAI 330, Question 09.02.05-20 response (this response).	Figure 2.4-1 has been revised to remove the 'Design Area' classification 3 from the table included in the figure as part of the Supplemental RAI 330, Question 09.02.05-20 response (this response).