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10 CFR 50.4
10 CFR 52.79

May 28, 2009

UN#09-256

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 No. 70, Piping Systems and Components - Inspections, Tests, Analyses,
and Acceptance Criteria

References: 1) John Rycyna (NRC) to Robert Poche (UniStar), "RAI No 70 EMB2 1757.doc
(PUBLIC)" email dated February 26, 2009

2) UniStar Nuclear Energy Letter UN#09-236, 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. 70, Piping System and
Components – Inspections, Test, Analyses, and Acceptance Criteria, dated
May 15, 2009.

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 February 26, 2009 (Reference 1). This RAI addresses Piping Systems and Components - Inspections, Tests, Analyses, and Acceptance Criteria as discussed in Section 14.2 of the Final Safety Analysis Report (FSAR), as submitted in Part 2 of the Combined License Application (COLA), Revision 4.

DOG
NRC

Reference 1 requested UniStar Nuclear Energy to respond to the RAI within 30 days. On May 15, 2009, UniStar Nuclear Energy submitted a request for an extension of the required response date to May 29, 2009 (Reference 2). The enclosure provides our response to RAI 70 Question 14.03.03-1, 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.

Our response does not include any new regulatory commitments.

If there are any questions regarding this transmittal, please contact me at (410) 470-4205, or Mr. Michael J. Yox at (410) 495-2436.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on May 28, 2009



Greg Gibson

Enclosure: Response to NRC Request for Additional Information, RAI No. 70, Piping Systems and Components - Inspections, Tests, Analyses, and Acceptance Criteria, Calvert Cliffs Nuclear Power Plant Unit 3

cc: John Rycyna, NRC Project Manager, U.S. EPR COL Application
Laura Quinn, NRC Environmental Project Manager, U.S. EPR COL Application
Getachew Tesfaye, NRC Project Manager, U.S. EPR DC Application (w/o enclosure)
Loren Plisco, Deputy Regional Administrator, NRC Region II (w/o enclosure)
Silas Kennedy, U.S. NRC Resident Inspector, CCNPP, Units 1 and 2
U.S. NRC Region I Office

Enclosure

**Response to NRC Request for Additional Information,
RAI No. 70, Piping Systems and Components –
Inspections, Tests, Analyses, and Acceptance Criteria,
Calvert Cliffs Nuclear Power Plant Unit 3**

RAI No. 70

Question 14.03.03-1

10 CFR 52.80(a) requires that a COL application must contain:

“(a) The proposed inspections, tests, and analyses [ITA], including those applicable to emergency planning, that the licensee shall perform, and the acceptance criteria [AC] that are necessary and sufficient to provide reasonable assurance that, if the inspections, tests, and analyses are performed and the acceptance criteria met, the facility has been constructed and will be operated in conformity with the combined license, the provisions of the [Atomic Energy] Act, and the Commission's rules and regulations.”

In the Calvert Cliffs Nuclear Power Plant, Unit 3 COL application, Part 10, ITAAC, Appendix B, Table 2.4-24, “{Ultimate Heat Sink [UHS] Makeup Water System Inspections, Tests, Analyses, and Acceptance Criteria},” item 9, the applicant states that “[t]he ASME Code Section III piping of the UHS Makeup Water System is designed and constructed to ASME Code Section III requirements.”

“Inspections of the as-built piping will be conducted, as documented in the ASME Design Reports.”

“The ASME Code Section III design reports exist for the as-built ASME Code Section III piping of the UHS Makeup Water System.”

The applicant's FSAR, Section 14.3, which concerns ITAAC, does not identify what the particular design reports are, or describe the contents of those reports. NUREG-0800, “Standard Review Plan (SRP), Section 14.3.3, “PIPING SYSTEMS AND COMPONENTS - INSPECTIONS, TESTS, ANALYSES, AND ACCEPTANCE CRITERIA,” provides that “[a]n acceptable version of an ASME Code certified stress report is the design document required by ASME Code, Section III, Subarticle NCA-3550.”

Some of the components and piping of the UHS Makeup Water System are classified as ASME Code Section III in the applicant's FSAR Section 3.2, “CLASSIFICATION OF STRUCTURES, SYSTEMS, AND COMPONENTS,” Table 3.2-1. The applicant's FSAR, Section 3.12, “ASME CODE CLASS 1, 2, AND 3 PIPING SYSTEMS, PIPING COMPONENTS, AND THEIR ASSOCIATED SUPPORTS,” does not provide sufficient information related to the design of ASME Code Class 1, 2, and 3 piping systems. SRP Section 14.3.3 further provides that “[a]n acceptable approach to Tier 1 information for piping design is to specify distinct ITAAC that ensure the design process for piping systems occurs as described in the design description. . . . A certified piping stress report provides assurance that requirements of the ASME Code, Section III for design, fabrication, installation, examination, and testing have been met and that the design complies with the design specifications.”

1) Include in the application an ITAAC for the design of the UHS Makeup Water System's piping. Acceptable ITA are an inspection of approved ASME Code documents for piping. Acceptable AC are the approved ASME Code documents with a finding that that the UHS Makeup Water piping was designed in accordance with ASME Code Section III requirements. Otherwise, justify an alternative.

2) Include in the application an ITAAC for the fabrication and installation of the UHS Makeup Water piping system. Acceptable ITA are an inspection of system piping. Acceptable AC are certified ASME Code Data Reports and inspection reports documenting that the piping is fabricated, installed, and inspected in accordance with ASME Code Section III requirements. Otherwise, justify an alternative.

3) Include in the application an ITAAC for the as-built reconciliation of the piping system. Acceptable ITA are analyses to reconcile the as-built condition of the system piping with approved design documents. Acceptable AC are the approved ASME Code documents with a finding that design reconciliation has been completed in accordance with the ASME Code Section III requirements. Otherwise, justify an alternative.

4) Address the same issues raised in 1), 2), and 3) above for components designated as ASME Code Section III in item 8 of Table 2.4-24 in Part 10, ITAAC, Appendix B of the application. Otherwise, justify an alternative.

Response

Combined License Application (COLA), Part 10, Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC), Appendix B, Table 2.4-24, "Ultimate Heat Sink Makeup Water System Inspections, Tests, Analyses, and Acceptance Criteria," Item 9 will be revised to include specific ITAAC for the design, fabrication and installation, and as-built reconciliation of the Ultimate Heat Sink (UHS) Makeup Water System Piping. Table 2.4-24, Item 8 will be revised to include specific ITAAC for the design, fabrication and installation, and as-built reconciliation of the UHS Makeup Water System components. Table 2.4-32, UHS Makeup Water System Component Mechanical Design and Figure 2.4-1, UHS Makeup Water System Functional Arrangement have been added to supplement the revised ITAAC.

COLA Impact

COLA Part 10, ITAAC of the CCNPP Unit 3 COLA will be updated in a future COLA revision to incorporate changes to Table 2.4-24 and add new Table 2.4-32 and new Figure 2.4-1, as follows:

Table 2.4-24, {Ultimate Heat Sink Makeup Water System Inspections, Tests, Analyses, and Acceptance Criteria}
 (Page 1 of 3)

	Commitment Wording	Inspection, Test, or Analysis	Acceptance Criteria
8	<p>The ASME Code Section III components of the UHS Makeup Water System are designed and constructed to ASME Code Section III requirements.</p> <p>The components indicated in Table 2.4-32 as ASME Boiler & Pressure Vessel Code, Section III Division 1 (ASME Section III) components are designed, constructed, installed and inspected in accordance with the requirements of ASME Section III.</p>	<p>Inspections of the as-built components will be conducted, as documented in the ASME Design Reports.</p> <p>a. <u>Analysis of the components identified in Table 2.4-32 as ASME Section III Code components will be performed in accordance with the requirements of the Design Specification(s) and the design requirements of ASME Section III.</u></p> <p>b. <u>Components identified in Table 2.4-32 as ASME Section III Code shall be constructed in accordance with the Design Specification and the requirements of ASME Section III.</u></p> <p>c. <u>Installation of the components identified in Table 2.4-32 as ASME Code Section III will be performed in accordance with the requirements of ASME Section III.</u></p> <p>d. <u>Shop and field inspections of the components identified in Table 2.4-32 as ASME Section III Code components will be performed by an Authorized Nuclear Inspector.</u></p>	<p>The ASME Code Section III design reports exist for the as-built ASME Code Section III components of the UHS Makeup Water System.</p> <p>a. <u>ASME Section III Code Design Reports (NCA-3550) exist and conclude that the components identified in Table 2.4-32 as ASME Section III Code components comply with the Design Specification(s) and the requirements of ASME Section III for design.</u></p> <p>b. <u>The ASME Section III Certificate Holder(s) shall prepare and certify the required ASME Section III Data Report Form(s) that the components identified in Table 2.4-32 as ASME Section III components have been constructed in accordance with the requirements of ASME Section III.</u></p> <p>c. <u>The ASME Section III Certificate Holder shall prepare and certify the required ASME Section III Code Data Report Form that the components identified in Table 2.4-32 as ASME Section III components have been installed in accordance with requirements of ASME Section III.</u></p> <p>d. <u>An Authorized Nuclear Inspector will verify and certify compliance to ASME Section III Code requirements on the ASME Section III Data Report Form.</u></p>

Table 2.4-24, {Ultimate Heat Sink Makeup Water System Inspections, Tests, Analyses, and Acceptance Criteria}

(Page 2 of 3)

	Commitment Wording	Inspection, Test, or Analysis	Acceptance Criteria
9	<p>The ASME Code Section III piping of the UHS Makeup Water System is designed and constructed to ASME Code Section III requirements.</p> <p><u>The piping indicated in Figure 2.4-1 as ASME Boiler & Pressure Vessel Code, Section III (ASME Section III) piping is designed, constructed, installed and inspected in accordance with the requirements of ASME Boiler & Pressure Vessel Code, Section III Code.</u></p>	<p>Inspections of the as-built piping will be conducted, as documented in the ASME Design Reports.</p> <p>a. <u>Analysis of the piping identified in Figure 2.4-1 as ASME Section III piping will be performed in accordance with the requirements of the Design Specification and the design requirements of ASME Section III.</u></p> <p>b. <u>Piping identified in Figure 2.4-1 as ASME Section III piping shall be constructed in accordance with the Design Specification and the requirements of ASME Section III.</u></p> <p>c. <u>Installation of the as-built piping identified in Figure 2.4-1 as ASME Section III Code piping will be performed in accordance with the requirements of ASME Section III.</u></p> <p>d. <u>Shop and field inspections of the as-built piping identified in Table 2.4-32 as ASME Section III Code piping will be performed by an Authorized Nuclear Inspector.</u></p>	<p>The ASME Code Section III design reports exist for the as-built ASME Code Section III piping of the UHS Makeup Water System.</p> <p>a. <u>An ASME Code Section III stress report exists and concludes that the as-designed piping identified in Figure 2.4-1 as ASME Code Section III piping complies with the Design Specification and the design requirements of ASME Section III.</u></p> <p>b. <u>The ASME Section III Certificate Holder(s) shall prepare and certify the required ASME Section III Data Report Form(s) that the piping identified in Figure 2.4-1 as ASME Section III piping has been constructed in accordance with the requirements of ASME Section III.</u></p> <p>c. <u>The ASME Section III Certificate Holder shall prepare and certify the required ASME Section III Data Report Form that the as built piping identified in Figure 2.4-1 as ASME Section III piping has been installed in accordance with the requirements of ASME Section III. As-built piping configuration will be reconciled and ASME III Stress Report will be revised, as needed.</u></p> <p>d. <u>An Authorized Nuclear Inspector will verify and certify compliance to ASME Section III Code requirements on the required ASME Section III Data Report Form.</u></p>

Table 2.4-32 {Ultimate Heat Sink (UHS) Makeup Water System Component Mechanical Design}
 (Page 1 of 4)

Component Description	Component Tag Number	Component Location	ASME Code Section III	Function	Seismic Category
UHS Makeup Water Pump Division 1	30PED10 AP001 A	UHS Makeup Pump Building	Class 3	Run	I
UHS Makeup Water Pump Discharge Check Valve Division 1	30PED10 AA201 A	UHS Makeup Pump Building	Class 3	Open - Close	I
UHS Makeup Water Pump Discharge Isolation Valve Division 1	30PED10 AA001 A	UHS Makeup Pump Building	Class 3	Open	I
UHS Makeup Water Pump Recirculation Isolation Valve Division 1	30PED10 AA002 A	UHS Makeup Pump Building	Class 3	Close	I
UHS Makeup Water Pump Discharge Strainer Division 1	30PED10 AT001 A	UHS Makeup Pump Building	Class 3	Run	I
UHS Makeup Water Pump Discharge Strainer Blowdown Isolation Valve Division 1		UHS Makeup Pump Building	Class 3	Close	I
Piping and Manual Valves Division 1		UHS Makeup Pump/UHS Makeup Water Electrical Buildings	Class 3 / B31.1	Pressure Boundary	I / II
Buried Piping Division 1		Yard Area	Class 3	Pressure Boundary	I
Air Release/Vacuum Breaker Valves Division 1		UHS Makeup Pump Building	Class 3	Open - Close	I
UHS Makeup Pump Bldg AHU Coil Division 1		UHS Makeup Pump Building	Class 3	Pressure Boundary	I
UHS Makeup Water Electrical Bldg AHU Coil Division 1		UHS Makeup Water Electrical Building	Class 3	Pressure Boundary	I
UHS Makeup Water Pump Division 2	30PED20 AP001 A	UHS Makeup Pump Building	Class 3	Run	I
UHS Makeup Water Pump Discharge Check Valve Division 2	30PED20 AA201 A	UHS Makeup Pump Building	Class 3	Open - Close	I
UHS Makeup Water Pump Discharge Isolation Valve Division 2	30PED20 AA001 A	UHS Makeup Pump Building	Class 3	Open	I

**Table 2.4-32 {Ultimate Heat Sink (UHS) Makeup Water System Component Mechanical Design}
 (Page 2 of 4)**

Component Description	Component Tag Number	Component Location	ASME Code Section III	Function	Seismic Category
UHS Makeup Water Pump Recirculation Isolation Valve Division 2	30PED20 AA002 A	UHS Makeup Pump Building	Class 3	Close	I
UHS Makeup Water Pump Discharge Strainer Division 2	30PED20 AT001 A	UHS Makeup Pump Building	Class 3	Run	I
UHS Makeup Water Pump Discharge Strainer Blowdown Isolation Valve Division 2		UHS Makeup Pump Building	Class 3	Close	I
Piping and Manual Valves Division 2		UHS Makeup Pump/UHS Makeup Water Electrical Buildings	Class 3 / B31.1	Pressure Boundary	I / II
Buried Piping Division 2		Yard Area	Class 3	Pressure Boundary	I
Air Release/Vacuum Breaker Valves Division 2		UHS Makeup Pump Building	Class 3	Open - Close	I
UHS Makeup Pump Bldg AHU Coil Division 2		UHS Makeup Pump Building	Class 3	Pressure Boundary	I
UHS Makeup Water Electrical Bldg AHU Coil Division 2		UHS Makeup Water Electrical Building	Class 3	Pressure Boundary	I
UHS Makeup Water Pump Discharge Check Valve Division 3	30PED30 AA201 A	UHS Makeup Pump Building	Class 3	Open - Close	I
UHS Makeup Water Pump Discharge Isolation Valve Division 3	30PED30 AA001 A	UHS Makeup Pump Building	Class 3	Open	I
UHS Makeup Water Pump Recirculation Isolation Valve Division 3	30PED30 AA002 A	UHS Makeup Pump Building	Class 3	Close	I
UHS Makeup Water Pump Discharge Strainer Division 3	30PED30 AT001 A	UHS Makeup Pump Building	Class 3	Run	I
UHS Makeup Water Pump Discharge Strainer Blowdown Isolation Valve Division 3		UHS Makeup Pump Building	Class 3	Close	I

**Table 2.4-32 {Ultimate Heat Sink (UHS) Makeup Water System Component Mechanical Design}
 (Page 3 of 4)**

Component Description	Component Tag Number	Component Location	ASME Code Section III	Function	Seismic Category
Piping and Manual Valves Division 3		UHS Makeup Pump/UHS Makeup Water Electrical Buildings	Class 3 / B31.1	Pressure Boundary	I / II
Buried Piping Division 3		Yard Area	Class 3	Pressure Boundary	I
Air Release/Vacuum Breaker Valves Division 3		UHS Makeup Pump Building	Class 3	Open - Close	I
UHS Makeup Pump Bldg AHU Coil Division 3		UHS Makeup Pump Building	Class 3	Pressure Boundary	I
UHS Makeup Water Electrical Bldg AHU Coil Division 3		UHS Makeup Water Electrical Building	Class 3	Pressure Boundary	I
UHS Makeup Water Pump Division 4	30PED40 AP001 A	UHS Makeup Pump Building	Class 3	Run	I
UHS Makeup Water Pump Discharge Check Valve Division 4	30PED40 AA201 A	UHS Makeup Pump Building	Class 3	Open - Close	I
UHS Makeup Water Pump Discharge Isolation Valve Division 4	30PED40 AA001 A	UHS Makeup Pump Building	Class 3	Open	I
UHS Makeup Water Pump Recirculation Isolation Valve Division 4	30PED40 AA002 A	UHS Makeup Pump Building	Class 3	Close	I
UHS Makeup Water Pump Discharge Strainer Division 4	30PED40 AT001 A	UHS Makeup Pump Building	Class 3	Run	I
UHS Makeup Water Pump Discharge Strainer Blowdown Isolation Valve Division 4		UHS Makeup Pump Building	Class 3	Close	I
Piping and Manual Valves Division 4		UHS Makeup Pump/UHS Makeup Water Electrical Buildings	Class 3 / B31.1	Pressure Boundary	I / II

**Table 2.4-32 {Ultimate Heat Sink (UHS) Makeup Water System Component Mechanical Design}
 (Page 4 of 4)**

Component Description	Component Tag Number	Component Location	ASME Code Section III	Function	Seismic Category
Buried Piping Division 4		Yard Area	Class 3	Pressure Boundary	I
Air Release/Vacuum Breaker Valves Division 4		UHS Makeup Pump Building	Class 3	Open - Close	I
UHS Makeup Pump Bldg AHU Coil Division 4		UHS Makeup Pump Building	Class 3	Pressure Boundary	I
UHS Makeup Water Electrical Bldg AHU Coil Division 4		UHS Makeup Water Electrical Building	Class 3	Pressure Boundary	I

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

