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UniStar
NUCLEAR ENERGY

10 CFR 50.4
10 CFR 52.79

May 11, 2012

UN#12-042

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 333, Other Seismic Category I Structures

References:
1) Surinder Arora (NRC) to Paul Infanger (UniStar Nuclear Energy), "FINAL RAI 333 SEB2 6214, dated January 20, 2012

2) UniStar Nuclear Energy Letter UN#12-017, from Mark T. Finley to Document Control Desk, U.S. NRC, Updated RAI Closure Plan, dated February 21, 2012

3) UniStar Nuclear Energy Letter UN#11-262, from Greg Gibson to Document Control Desk, U.S. NRC, RAI 310, Other Seismic Category I Structures, dated October 3, 2011

4) UniStar Nuclear Energy Letter UN#11-173, from Greg Gibson to Document Control Desk, U.S. NRC, RAI 279, Ultimate Heat Sink, dated June 3, 2011

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 January 20, 2012 (Reference 1). This RAI addresses Other Seismic Category I Structures, as discussed in Section 3.8 of the Final Safety Analysis Report (FSAR), as submitted in the Calvert Cliffs Nuclear Power Plant (CCNPP) Unit 3 Combined License Application (COLA), Revision 8.

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Reference 2 indicated that a response to RAI 333, Question 03.08.04-31, would be provided to the NRC by May 11, 2012. The enclosure provides our response to RAI No. 333, Question 03.08.04-31, 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.

This response to RAI 333 Question 03.08.04-31 provides supplemental information to a paragraph in COLA Section 3.8.4.7, which was included in COLA Revision 8 to incorporate the RAI 310, Question 03.08.04-26 response (Reference 3). Our RAI 333 Question 03.08.04-31 response also provides supplemental information to paragraphs in COLA Sections 6.6.2 and 6.6.4, which were included in COLA Revision 8 to incorporate the response to RAI 279 Question 09.02.05-14 (Reference 4).

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 May 11, 2012

Mark T. Finley

Enclosure: Response to NRC Request for Additional Information RAI No. 333, Question 03.08.04-31, Other Seismic Category I Structures, 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
Getachew Tesfaye, NRC Project Manager, U.S. EPR DC Application, (w/o enclosure)
Patrica Holahan, Acting Deputy Regional Administrator, NRC Region II, (w/o enclosure)
Silas Kennedy, U.S. NRC Resident Inspector, CCNPP, Units 1 and 2,
David Lew, Deputy Regional Administrator, NRC Region I (w/o enclosure)

Enclosure

**Response to NRC Request for Additional Information RAI No. 333,
Question 03.08.04-31, Other Seismic Category I Structures,
Calvert Cliffs Nuclear Power Plant, Unit 3**

RAI No. 333

NRC Question 03.08.04-31

Supplemental RAI for RAI 310, Question 03.08.04-26 (eRAI 5746)

SRP acceptance criterion 3.8.4.II.7 discusses information on testing and inservice surveillance requirements. In RAI 310, Question 03.08.04-26, the staff requested that the applicant explain whether the periodic monitoring program, for buried concrete duct banks that may be exposed to low-pH groundwater, also covers buried piping. The staff reviewed the RAI response provided in UniStar Letter UN#11-262, dated October 3, 2011 (ML11277A229).

The staff determined that the RAI response addresses most of the staff's concern. The staff notes that the discussions on buried piping in both the RAI 310, Question 03.08.04-26 and FSAR Section 3.8.4.7 apply to all buried piping. However, the proposed markup for Section 3.8.4.7 references Section 9.2.5.6, which discusses only the UHS Makeup Water System components, for the description of the periodic in-service testing of buried piping using flow or pressure test. Therefore, the staff request that the applicant clarify that the discussion in the proposed markup for Section 3.8.4.7 is for all buried piping and revise the FSAR markup accordingly.

The staff needs the information to be able to conclude that there is reasonable assurance that inservice inspection requirements for buried Seismic Category I structures and piping are consistent with SRP acceptance criteria 3.8.4.II.7.

Response

This response confirms that the RAI 310, Question 03.08.04-26[1] response was intended for all safety-related buried steel pipes that may be exposed to low pH groundwater in the powerblock area; these include the Ultimate Heat Sink (UHS) Makeup Water pipes and Essential Service Water (ESW) pipes.

Calvert Cliffs Nuclear Power Plant (CCNPP) Unit 3 COLA FSAR Subsections 9.2.1.1 and 9.2.1.6 are being updated to include the in-service inspection requirements and criteria for the ESW pipes. These requirements are consistent with the in-service inspection requirements for UHS Makeup Water pipes provided in CCNPP Unit 3 COLA FSAR Subsection 9.2.5.6. CCNPP Unit 3 COLA FSAR Subsection 3.8.4.7 is being updated to provide reference to COLA FSAR Subsections 9.2.1.6 and 9.2.5.6 for the in-service inspection requirements for the ESW pipes and UHS Makeup Water pipes, respectively.

COLA Impact

CCNPP Unit 3 FSAR Chapter 3, 6, and 9 will be updated as follows in a future COLA revision:

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[1] UniStar Nuclear Energy Letter UN#11-262, 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 October 3, 2011

3.8.4.7 Testing and Inservice Inspection Requirements

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The buried duct banks have shallow embedment depth. Therefore, the condition of the buried concrete duct banks in the utility corridor that may be exposed to low-pH groundwater of the Surficial aquifer will be monitored by excavating the surrounding soil. The frequency of this monitoring will be determined based on the groundwater level and pH values recorded by the groundwater monitoring program described in Section 3.8.5.7.

In-service inspection of buried piping will be performed when exposed during an excavation for any reason. As described in Sections 9.2.1.6 and 9.2.5.6, periodic in-service testing of buried Essential Service Water (ESW) and Ultimate Heat Sink (UHS) Makeup Water piping will be performed using flow or pressure tests, regardless of groundwater exposure conditions. As described in Section 6.6.4, testing will be performed at a four-year frequency.

Groundwater levels throughout the powerblock area will also be monitored to confirm that no other below-grade concrete requires dewatering provisions to protect it from prolonged exposure to the low-pH groundwater from the Surficial aquifer. The groundwater chemical properties are monitored through the monitoring program described in Section 3.8.5.7.

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6.6.2 Accessibility

{This section of the U.S. EPR FSAR is incorporated by reference with the following supplement.

Design considerations other than access provisions described in ASME Section XI paragraph IWA-1500, will be needed for specific buried Essential Service Water (ESW) System and UHS Makeup Water System components to render inservice inspections practical. In lieu of a visual examination of buried components, the examination requirement shall be satisfied by performing a test that determines the rate of pressure loss or a test that determines the change in flow rate between the isolation valves at each end of the buried piping-segment, in accordance with ASME Section XI, paragraph IWA5244.}

6.6.4 Inspection Intervals

{This section of the U.S. EPR FSAR is incorporated by reference with the following supplement.

Testing will be performed to determine the rate of pressure loss or the change in flow rate between the ends of buried components (i.e., to verify any leak) coincident with alternate test cycles of U.S. EPR Generic Technical Specification Surveillance Requirement (SR) 3.7.8.2 for ESW System and SR 3.7.19.5 for the UHS Makeup Water System. Since most of the piping is buried, for additional assurance of system integrity and availability, testing will be performed at the 4-year frequency, which conservatively bounds the requirements per ASME Section XI, paragraph IWD-2411 and Tables IWD-2411-1 and IWD-2500-1.}

9.2.1 Essential Service Water System

No departures or supplements.

9.2.1.1 Design Bases

{~~No departures or supplements.~~The ESW System is designed to permit periodic inspection of components necessary to maintain the integrity and capability of the system to comply with 10 CFR 50 Appendix A, General Design Criterion 45.}

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9.2.1.6 Inspection and Testing Requirements

{~~No departures or supplements.~~Inservice inspection of the ESW System including piping, valves, pumps and components is performed as identified in Section 6.6, in accordance with the requirements of ASME Section XI and ASME OM Code. The installation and design of the ESW System provides accessibility, as described in Section 6.6.2, for the performance of periodic inservice inspection. The frequency of inservice inspection, via flow or pressure tests, for buried piping segments is described in Section 6.6.4, to ensure system integrity beyond the ASME Section XI code requirement.}