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NUCLEAR ENERGY

10 CFR 50.4
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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,
Impact of U.S. EPR FSAR RAI Responses on CCNPP Unit 3 FSAR Section 3.7

As discussed on March 4, 2010, UniStar Nuclear Energy has investigated the impact of the AREVA proposed changes to the U.S. EPR FSAR being developed in response to U.S. EPR FSAR Requests for Additional Information (RAIs) 291, 320 and 155 Supplement 9, on the Calvert Cliffs Nuclear Power Plant (CCNPP) Unit 3 COLA FSAR Section 3.7. AREVA is changing the seismic analyses in the U.S. EPR FSAR, Tier 2, Sections 3.7, 3.8, and Appendix 3E to address the above RAIs and to expand the seismic parameters to envelop Bell Bend and similar sites. Three main changes are occurring:

- The dynamic model is being changed to an embedded finite element model (FEM) from a surface-founded stick model.
- A 4th certified seismic design response spectra (CSDRS) curve is being added to address the high frequency content at Bell Bend.
- The Critical Sections in Appendix 3E are being reworked to resolve concerns associated with the selection of Critical Sections.

For CCNPP Unit 3, the changes being made in the U.S. EPR FSAR for the Nuclear Island (NI) will not affect the FSAR Section 3.7 discussion and associated RAI responses for the intake

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structures: the Common Basemat intake structure (CBIS) and the UHS Electrical Building. The Emergency Power Generating Buildings (EPGBs), and Essential Service Water Buildings (ESWBs) seismic input for structure-to-soil-to-structure interaction is an envelope of the current certified design soil cases and seismic input motions. These amplified motions are enveloped to create a single horizontal and a single vertical input motion for the EPGBs and ESWBs. The enveloped input motion is not expected to change as a result of the embedded NI models. Therefore, it is requested that the NRC continue its review of CCNPP Unit 3 COLA, FSAR Section 3.7 with respect to the EPGBs, the ESWBs, the CBIS, and the UHS Electrical Building.

Additionally, it is requested that the NRC continue its review of CCNPP Unit 3 FSAR Section 3.7 as it pertains to the Nuclear Island (NI), Nuclear Auxiliary Building (NAB), and the Radioactive Waste Processing Building (RWPB), except for Section 3.7.2.5.1 which discusses the floor response spectra of the Nuclear Island common basemat structures. The changes in the U.S. EPR FSAR will not impact the conclusions presented in the CCNPP Unit 3 FSAR with respect to the NI, NAB, or RWPB. The CSDRS reconciliation with the site specific SSE will continue to be bounded with the addition of the 4th CSDRS curve. The in-structure response spectra (ISRS) for the NI will continue to be bounded by the seismic response shown in the U.S. EPR FSAR for the NI Building. The change however, will impact the technical bases for the conclusions and the specific curves showing a comparison of the CCNPP Unit 3 response versus the U.S. EPR FSAR response curve.

For CCNPP Unit 3, UNE has determined that the changes to the U.S. EPR FSAR will result in minor, non-substantive changes to the following CCNPP Unit 3 FSAR 3.7 subsections and figures:

Subsection	Impact
3.7.1.1.1.1	First sentence in subsection "Development of FIRS" will change since embedment will be addressed in the NI common Basemat Structures analysis.
3.7.1.1.2.1	First sentence will change since embedment will be addressed in the NI common Basemat Structures analysis.
3.7.1.3.1	Last paragraph is not expected to change, however the supporting calculations behind the conclusion of "bounded" will change.
3.7.2.4.2.1	This paragraph is not expected to change, confirmatory analysis will still be done in the same method as the U.S. EPR FSAR. However, since the U.S. EPR model is changing the confirmatory analysis will need to be re-performed.
3.7.2.4.4.1	This paragraph is not expected to change, confirmatory analysis will still be done in the same method as the U.S. EPR FSAR. However, since the U.S. EPR model is changing the confirmatory analysis will need to be re-performed.
3.7.2.4.5.1	This paragraph is not expected to change, confirmatory analysis will still be done in the same method as the U.S. EPR FSAR. However, since the U.S. EPR model is changing the confirmatory analysis will need to be re-performed.
3.7.2.4.7	The cited computer code will change.

Subsection	Impact
3.7.2.5.1	This section will need to be updated. Numerical references to figures and tables in the U.S. EPR will likely change. All the internally cited figures (3.7-28 through 3.7-66) will be revised as well. However, the underlying conclusion that the site specific response is enveloped by the U.S. EPR FSAR is not expected to change. Also, the Vent Stack will be reclassified as seismic category I.
3.7.2.5.2	In the first paragraph, the references to figure and tables in the U.S. EPR FSAR are expected to change based on the changes to the U.S. EPR FSAR.
3.7.2.8	The vent stack will be removed from the text that lists the non-seismic category I structures that interact with seismic category I structures. The vent stack is being reclassified as seismic category I.
Figure 3.7-4 Figure 3.7-5 Figure 3.7-6 Figure 3.7-7	A 4th (Bell Bend based) CSDRS curve will be added. No change to CCNPP Unit 3 information.
Figure 3.7-23	The U.S. EPR FSAR soil cases will change. No change to the CCNPP Unit 3 data.
Figure 3.7-28 through Figure 3.7-54	Both the EPR design spectra and the CCNPP Unit 3 responses will change but changes will be similar and proportional.
Figure 3.7-55 through Figure 3.7-66	These curves need to be regenerated based upon the new finite element model.

In addition to the Review of FSAR Section 3.7, the RAI responses that were provided on Section 3.7 were reviewed. That assessment concluded that the following RAI questions require an updated response.

RAI	Question	Previous Response
58	03.07.01-1	UN#09-388 response will require update
58	03.07.01-2	UN#09-320 response will require update
179	03.07.01-14	UN#09-519 response will require update
65	03.07.02-18	UN#09-228 and UN#09-388 response will require update
65	03.07.02-24	UN#09-388 response will require update

As identified in the AREVA correspondence[1] in regard to U.S. EPR FSAR RAI 320, AREVA's schedule to provide the response to its RAI questions is June 21, 2010. Following completion of that submittal, AREVA and UniStar Nuclear Energy will develop the associated updates to the CCNPP Unit 3 FSAR and RAI responses noted above. It is anticipated that the CCNPP Unit 3 update will be submitted approximately 90 days after the U.S. EPR FSAR response is

[1] Russell Wells email to Gatachew Tesfaye, "Response to EPR Design Certification Application RAI No. 320, FSAR Ch 3" dated November 30, 2009.

submitted. Based upon the above date, this submittal will be provided to the NRC on or before September 21, 2010.

This letter 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) 470-4205, or Mr. Wayne A. Massie at (410) 470-5503.

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

Executed on March 15, 2010

Greg Gibson

cc: Surinder Arora, NRC Project Manager, U.S. EPR Projects Branch
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