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NUCLEAR ENERGY

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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,
RAI No. 140, Seismic and Dynamic Qualification of Mechanical and Electrical Equipment

Reference: John Rycyna (NRC) to Robert Poche (UniStar Nuclear Energy), "RAI No 140 EMB2 2773.doc" email dated August 13, 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 August 13, 2009 (Reference). This RAI addresses Seismic and Dynamic Qualification of Mechanical and Electrical Equipment, as discussed in Section 3.10 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 6.

The enclosure provides our response to RAI No. 140, Question 03.10-1, 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. This letter does not contain any sensitive or proprietary information.

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NRO

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 October 28, 2009

Greg Gibson

Enclosure: Response to NRC Request for Additional Information RAI No. 140, Question 03.10-1, Seismic and Dynamic Qualification of Mechanical and Electrical Equipment, Calvert Cliffs Nuclear Power Plant, Unit 3

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

GTG/SFW/mdf

Enclosure

Response to NRC Request for Additional Information RAI No. 140, Question 03.10-1, Seismic and Dynamic Qualification of Mechanical and Electrical Equipment, Calvert Cliffs Nuclear Power Plant, Unit 3

RAI No. 140

Question 03.10-1

In Calvert Cliffs Nuclear Power Plant (CCNPP) Unit 3 COL FSAR, Section 3.10, a five-phase implementation program for seismic and dynamic qualification of site-specific mechanical and electrical equipment was provided because the results of seismic and dynamic qualification of site-specific equipment were not available at the time of submittal of the COL FSAR. 10 CFR 52.73(b) states that the Commission will require, before granting a combined license that references a standard design certification, that information normally contained in certain procurement specifications be completed and available for audit if the information is necessary for the Commission to make its safety determinations.

i) Phase I and Phase II of the implementation program involve the Seismic Qualification Methodology and Specification Development. The schedule of these two phases is "Prior to Procurement" according to CCNPP Unit 3 FSAR Table 3.10-2. In order for the staff to make a safety determination, the staff requests the applicant make available Phase I and Phase II information of all equipment for the staff to audit prior to the completion of the Safety Evaluation Report with no open items. Furthermore, the applicant is requested to notify the staff prior to the scheduled completion date of Phase II so the staff can coordinate NRC resources to conduct the audit.

ii) In Table 3.10-2, the schedule for Phase V, "Documentation for Results," is "Prior to Initial Pre-operational Testing." According to Regulatory Guide (RG) 1.206, Section C.I.3.10.4, the results should be submitted to the staff prior to installation of equipment, not prior to pre-operational testing. RG 1.206, C.I.3.10.4, also indicates that the applicant should include milestones and completion dates for the implementation program. Thus, provide the milestones and scheduled completion dates, and propose a license condition to ensure that the program is implemented as stated.

iii) In Section 3.10 of the COL FSAR, the applicant provided a five-phase implementation program for site-specific equipment. In particular, Phase V shall consist of the preparation of a seismic qualification data package (SQDP) for each piece of equipment seismically qualified. In the U.S. EPR design certification proceeding, AREVA submitted a letter, dated February 27, 2009, responding to RAI No. 161, Question 03.10-22 (ML090580547). This RAI response indicated that a COL applicant who references the U.S. EPR design certification is to create and maintain the SQDP. Therefore, clarify whether the five-phase implementation program described in Section 3.10 of the COL FSAR is also applicable to the standard (non-site-specific) equipment. If not, provide information about the implementation program to address non-site-specific equipment.

Response

i) In accordance with Regulatory Guide 1.206, Section C.I.3.10, FSAR Section 3.10 describes the implementation program for seismic and dynamic qualification of mechanical and electrical equipment, including milestones. There is no specific requirement in Regulatory Guide 1.206 or NUREG-0800 requiring that Phase I or Phase II information exist for any equipment prior to the completion of the Safety Evaluation Report with no open items.

If any Seismic Category I components are ordered prior to issuance of the Safety Evaluation Report with no open items, Phase I information (Seismic Qualification Methodology) will be available for audit. Additionally, for any ordered item, Phase II information (Specification Development) will have also been completed.

For Seismic Category I components that do not have completed Phase II information (Specification Development) prior to completion of the Safety Evaluation Report with no open items, the Phase II information will be available for audit prior to installation.

As a note, the Seismic Category I equipment identified in FSAR Section 3.10 is listed in COLA Part 10 (Inspections, Tests, Analyses, and Acceptance Criteria [ITAAC] and ITAAC Closure), Appendix B. Appendix B requires that type tests, tests, analyses, or a combination of tests and analyses are performed for Seismic Category I equipment. Specifically, ITAAC Tables 2.4-21, 2.4-22, 2.4-24, 2.4-26, 2.4-27 and 2.4-31 identify the inspections, tests or analyses as well as the acceptance criteria to complete and document conformance with Seismic Category I requirements as part of ITAAC closeout.

ii) Regulatory Guide 1.206 Part C.III.1, Section C.I.3.10, specifies that for equipment being qualified by experience; the details of the experience database, including applicable implementation procedures should be submitted to staff for review and approval prior installation of equipment. U.S. EPR FSAR Section 3.10.1.1 indicates that seismic qualification based on experience is not utilized. CCNPP Unit 3 COLA FSAR Section 3.10.1.1 adopts this position without supplements or departures. Because seismic qualification based on experience will not be utilized at CCNPP Unit 3, the milestone information in FSAR Table 3.10-2 is unchanged.

The milestone and schedule is shown in FSAR Table 3.10-2. Details beyond that identified in Table 3.10-2 for the seismic and dynamic qualification program are not currently available, and are not expected to be available until a detailed construction schedule of the plant has been developed. Appropriate scheduling information will be provided, when available, to the NRC to support timely completion of inspection and audit functions.

COLA Part 10, Appendix A, Item 2 COL Items, Proposed License Conditions will be supplemented with the following:

The seismic and dynamic qualification implementation program, including milestones and completion dates, shall be developed and submitted for U.S. Nuclear Regulatory Commission approval prior to installation of the applicable equipment.

iii) FSAR Section 3.10.4 contains COL Holder Item 3.10-1 requiring a COL applicant that references the U.S. EPR design certification to create and maintain the seismic qualification data package (SQDP) file during the equipment selection and procurement phase.

This COL Holder Item is addressed as follows:

Calvert Cliffs 3 Nuclear Project, LLC and UniStar Nuclear Operating Services, LLC shall create and maintain the SQDP file. This activity shall be initiated during the equipment selection and procurement phase. The SQDP file shall be maintained for the life of the plant.

The CCNPP Unit 3 SQDP will be used for identified seismically qualified equipment; regardless of its association (i.e., DCD or site-specific).

COLA Impact

FSAR Section 3.10 will be revised as follows in a future COLA revision:

3.10 SEISMIC AND DYNAMIC QUALIFICATION OF MECHANICAL AND ELECTRICAL EQUIPMENT

Results of seismic and dynamic qualification of ~~site-specific~~ equipment by testing and/or analysis were not available at the time of submittal of the original COL application. Thus, in conformance with NRC Regulatory Guide 1.206 (NRC, 2007), a seismic qualification implementation program is provided. As depicted in Table 3.10-2, the qualification program will be implemented in five major phases.

Phase I (Seismic Qualification Methodology) involves the development of a summary table for ~~site-specific~~ equipment. This summary table shall:

- List ~~site-specific~~ equipment, along with the associated equipment identification number.
- Define the building in which each equipment is located, along with the equipment mounting elevation.

Part 10 (ITAAC and ITAAC Closure) will be supplemented as follows future COLA revision:

COL Item 3.10-3 in Section 3.10.4
The seismic and dynamic qualification implementation program, including milestones and completion dates, shall be developed and submitted for U.S. Nuclear Regulatory Commission approval prior to installation of the applicable equipment.