

ArevaEPRDCPEm Resource

From: Tesfaye, Getachew
Sent: Tuesday, October 02, 2012 7:34 AM
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Subject: Draft - U.S. EPR Design Certification Application RAI No. 561 (6504), FSAR Ch. 19
Attachments: Draft RAI_561_SPRA_6504.doc

Attached please find draft RAI No. 561 regarding your application for standard design certification of the U.S. EPR. If you have any question or need clarifications regarding this RAI, please let me know as soon as possible, I will have our technical Staff available to discuss them with you.

Please also review the RAI to ensure that we have not inadvertently included proprietary information. If there are any proprietary information, please let me know within the next ten days. If I do not hear from you within the next ten days, I will assume there are none and will make the draft RAI publicly available.

Thanks,
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Application Title: U. S. EPR Standard Design Certification - Docket Number 52-020

AREVA NP Inc.

Review Section: 19.01 - Determining the Technical Adequacy of Probabilistic Risk Assessment
Results for Risk-Informed

Application Section: 19

QUESTIONS

19.01-48

Open Item

FOLLOW-UP TO RAI 97, QUESTION 19-225

In FSAR Revision 3, Section 19.1.5.4.1, the EPR high winds evaluation is discussed. The FSAR states, "The EPR Seismic Category I structures are specifically designed for a basic wind speed of 145 mph. This value bounds all locations within the U.S. except the extreme southern tips of Louisiana and Florida (SEI/ASCE 7-05)." The staff understands the basic wind speeds from this document to be the 100 year return period of a 3 second gust wind at 33 feet. An extreme wind having a return frequency of 1/100 years is not considered to be bounding compared to the Commission Goals of 1E-4/yr CDF and 1E-6/yr LRF. If a bounding assumption is to be used, provide additional analyses using the 1/100 year wind speed of 145mph to ensure that high winds are not a significant contributor to risk, as follows:

- a. Please quantify the shutdown CDF and LRF of extreme winds and document the results in Chapter 19 of the EPR FSAR. Please also consider that the switchyard could be damaged resulting in a loss of offsite power (LOOP) event that cannot be recovered within 24 hours. Please include the site impacts of the site specific extreme wind speed on non-safety related structures, systems, and components (SSCs) and safety-related SSCs.
- b. Please quantify the full power CDF and LRF of extreme winds and document the results in Chapter 19 of the EPR FSAR. Please also consider that the switchyard could be damaged resulting in a LOOP event that cannot be recovered within 24 hours. Please include the site impacts of the site specific extreme wind speed on non-safety related and safety-related SSCs.

19.01-49

Open Item

FOLLOW-UP TO RAI 97, QUESTION 19-225

The external flooding evaluation is discussed in FSAR Revision 3, Section 19.1.5.4.2. The external flooding conclusion states, "The preceding external flooding design features, in combination with the U.S. EPR requirements for building location relative to the probable maximum flood (PMF) and maximum groundwater elevation, provide a

robust design against potential external floods. Therefore, the risk from external flooding events is judged not significant."

The last sentence in the paragraph above, "the risk from external flooding events is judged not significant" has no justification attached. Please provide the risk analyses that justify this statement or please remove the conclusion from the FSAR. As documented in Table 1.8-2 of the EPR FSAR, COL Item 19.1-7 states that the COL applicant that references the U.S. EPR design certification will perform the site-specific screening analysis and the site-specific risk analysis for external events applicable to their site.

19.01-50

Open Item

FOLLOW-UP TO RAI 97, QUESTION 19-225

The external fire evaluation is discussed in FSAR Revision 3, Section 19.1.5.4.3. The external fire conclusion states, "The preceding external fire design features, in combination with the U.S. EPR requirements for structural design, structure location and design consideration of the CRE, provide a robust design against potential external fire and smoke events. Therefore, the risk from external fire and smoke events is judged not significant."

The last sentence in the paragraph above, "the risk from external fires and smoke events is judged not significant" has no justification attached. The staff accepts that external smoke has been evaluated the design of the CRE. However the risk of external fires has not been evaluated. Please provide the risk analyses that justify this statement or please remove this conclusion from the FSAR. As documented in Table 1.8-2 of the EPR FSAR, COL Item 19.1-7 states that the COL applicant that references the US EPR design certification will perform the site-specific screening analysis and the site-specific risk analysis for external events applicable to their site.