

AP1000TopRptsPEm Resource

From: Habib, Donald
Sent: Monday, January 09, 2017 12:53 PM
To: AP1000TopRptsPEm Resource
Subject: RE: Staff Questions on Response to RAI-SSO-009

From: Habib, Donald [<mailto:Donald.Habib@nrc.gov>]
Sent: Wednesday, December 21, 2016 2:07 PM
To: Monahan, Jill S.
Cc: Anderson, Richard G.
Subject: Staff Questions on Response to RAI-SSO-009

Jill and Rick –

Here are the questions, below. I have tentatively scheduled a teleconference at 9:30 am on Tuesday, January 3.

- Please let me know if the date/time will work, or propose an alternative date/time.
- Please let me know whether there is any proprietary content in the questions below. If so, could you please redact it.

Thanks
Don

Don Habib
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301-415-1035

Staff Feedback/Subsequent Questions on WEC Response to RAI-SSO-009
(Acceleration Time Histories for AP1000 SSO)

The staff's evaluation of WEC's response to RAI-SSO-009, including confirmatory analysis of the acceleration time histories that WEC submitted previously, found some issues that require clarification and/or additional information for staff's assessment of the adequacy of the time histories, as follows.

1. [

] in some frequency band. These do not appear to resemble the typical behavior of seismic motions and are not consistent with the intent of SRP guidance on using real earthquake records or random phases as seed record. The staff request WEC to verify and confirm that the design time histories for the SSO have random phases. If it is found otherwise, the staff request WEC to justify the adequacy of the time histories for use in analysis and design, with respect to effects on structural response.

2. The staff developed target PSD functions for the AP1000 ESS following the SRP 3.7.1 Appendix B procedure. The PSD functions of the acceleration time histories were found to be lower than 70% target PSD functions at some frequency ranges. The WEC response to RAI-SSO-009 does not explain how it was shown that the PSDs, which were shown to be [], do not have significant gaps in power at any frequency over the frequency range that is consistent with the ESS. The staff request WEC to clarify how the PSDs were shown not to have

significant gaps in power or justify the adequacy of the time histories used in the AP1000 SSO analysis and design, with respect to effects on structural response, as applicable.

3. In contrast to Figures 3-5 through 3-7 in the Option Report, a number of displacement and velocity time histories developed from the acceleration time histories were shown to have residual values. Please provide a technical justification on the adequacy of their use in the analysis and design.
4. The staff compared the PSD functions shown in Figure 3-10 of the SSO Topical Report and the respective PSD functions in the RAI response and found that the former are generally lower than the latter. The staff request WEC to clarify this discrepancy and correct any inconsistency as necessary. Further, the staff request WEC to clarify whether the design time histories have changed.

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