PMTurkeyCOLPEm Resource

From: Comar, Manny
Sent: Tuesday, May 05, 2015 12:24 PM
To: TurkeyCOL Resource
Subject: FW: Conference call today at 1:00 PM with Florida Power and Light
Attachments: Draft NRC Turkey Point AP1000 ReviewComments phone call 5-5-15 .docx

---

From: Patel, Pravin
Sent: Tuesday, May 05, 2015 12:03 PM
To: Comar, Manny
Cc: Carl Costantino; Tom Houston (tomwhouston@comcast.net); Neuhausen, Alissa; Roche, Robert; Thomas, Vaughn
Subject: RE: Conference call today at 1:00 PM with Florida Power and Light

See attached file and send to appropriate people.

From: Comar, Manny
Sent: Tuesday, May 05, 2015 11:55 AM
To: Candelario, Luissette; Heeszel, David; Karas, Rebecca; Patel, Pravin; Plaza-Toledo, Meralis; Seber, Dogan; Stieve, Alice; Thomas, Vaughn; Walsh, Lisa; Xi, Zuhan; Xu, Jim
Cc: Segala, John; Comar, Manny
Subject: RE: Conference call today at 1:00 PM with Florida Power and Light

This is all related to 3.7 issues. They are in the lead except there are two questions from Zuhan that the applicant will answer. It has much less to do with anything else. If you feel that the answer in 3.7 or 3.8 relate to you, you are welcome to join and listen.

Thanks

From: Seber, Dogan
Sent: Tuesday, May 05, 2015 11:50 AM
To: Comar, Manny
Subject: RE: Conference call today at 1:00 PM with Florida Power and Light

Manny,

Do you need the technical people for this? What is this conference call about?

Dogan

From: Comar, Manny
Sent: Tuesday, May 05, 2015 11:42 AM
To: Candelario, Luissette; Heeszel, David; Karas, Rebecca; Patel, Pravin; Plaza-Toledo, Meralis; Seber, Dogan; Stieve, Alice; Thomas, Vaughn; Walsh, Lisa; Xi, Zuhan; Xu, Jim
Cc: Segala, John; Comar, Manny
Subject: Conference call today at 1:00 PM with Florida Power and Light

The call in number is 888-273-3658 and the passcode is 595395

I have John Segala's Office –(T6-E41) as the room we will use to make the phone call. If you want to listen in , feel free to call in from your office.

Thanks

Manny Comar
Senior Project Manager
Nuclear Regulatory Commission
Office of New Reactors
301-415-3863
Manny.comar@nrc.gov

Hearing Identifier: TurkeyPoint_COL_Public
Email Number: 1018

Mail Envelope Properties (377CB97DD54F0F4FAAC7E9FD88BCA6D0021E7B387623)

Subject: FW: Conference call today at 1:00 PM with Florida Power and Light
Sent Date: 5/5/2015 12:24:29 PM
Received Date: 5/5/2015 12:24:31 PM
From: Comar, Manny

Created By: Manny.Comar@nrc.gov

Recipients:
"TurkeyCOL Resource" <TurkeyCOL.Resource@nrc.gov>
Tracking Status: None

Post Office: HQCLSTR01.nrc.gov

Files	Size	Date & Time
MESSAGE	2045	5/5/2015 12:24:31 PM
Draft NRC Turkey Point AP1000 ReviewComments phone call 5-5-15 .docx	33237	

Options
Priority: Standard
Return Notification: No
Reply Requested: No
Sensitivity: Normal
Expiration Date:
Recipients Received:

NRC RAI Number: 03.07.01-15

FPL Response Part A: Revised Response to RAI 03.07.01-15:

Comment 01: The RG1.60 spectral shape is defined such that the peak horizontal and vertical spectral accelerations are the same value. The RG1.60 spectral shapes shown in Figure 2.1-2 indicate that the peak vertical spectral acceleration is at the correct frequency but is somewhat lower than the peak horizontal spectral acceleration. The Applicant needs to show that the RG1.60 spectral shapes used in the SSI calculations are correct.

Comment 02:**Attachment 2, Page 5 of 172**, Figures 2.1-3 and 2.1-4 present 5% damped spectra for in-column motions in the H1 and H2 directions for the NI site profile. Presumably these spectra were resulting from response calculations for the same iterated strain site profiles (BE, UB and LB) that are used in the SSI calculations and for the same FIRS input spectra at a depth of 41.5'. Figures 2.1-6 and 2.1-7 present similar information for the FAR site profile. Please explain why the resulting in-column spectra for H1 and H2 directions that are defined to match the same FIRS input spectra are so different. Figures 2.1-9 through 2.1-14 indicate similar differences in the corresponding surface outcrop spectra that are used directly as input to the SSI analyses. Are the iterated site profiles for the BE, UB and LB cases the same for the H1 and H2 directions?

Comment 03:**Attachment 2, Page 42 of 172:** The second sentence of the second paragraph [For each profile the site response was computed as the average of the lower-bound (LB), best-estimate (BE), and upper-bound (UB) S-wave velocity profiles.] is confusing. Should the statement read [A smoothed average site response at the ground surface was computed from the surface responses from the lower-bound (LB), best-estimate (BE), and upper-bound (UB) S-wave velocity profiles.] An average site profile was indicated to also have been calculated and associated with this average surface response. If a RG 1.60 FIRS input was applied to this average profile at the foundation depth, would the resulting surface motion envelope the surface motions resulting from the individual site responses computed for the H1 and H2 motions?

Comment 04:Attachment 2,**Page 61 of 172,** Figures D1-1 through D1-6 present plots of S-wave, P-wave and (presumably) S-wave damping for the NI and FAR profiles that are to be used in SSI calculations. Figures D2-1 through D2-6 present similar information for the updated profiles.Does the term "estimated BE" profile indicated in these figures refer to the average profile determined as indicated in Comment 03 above?

Comment 05:Attachment 2,**Page 109 of 172,**The third paragraph indicates that a "normalized SPT resistance of 30 blows per foot" will be used to determine properties of the fill material. The Applicant needs to define the term "normalized SPT resistance".

Comment 06:Attachment 2,**Page 115 of 172**The fourth paragraph of Section 3JJ.7.3 indicates that an iterative process (10 repetitions) was used with the RG 1.60 motion scaled to 0.1g. Figures 3JJ-273 and 274 indicate the convergence to the RG shape with the 10 iterations. However, no description is provided of where the RG motion is being input, what the initial site profile is, and what is being iterated (strain, site properties, etc.). Therefore, there is no

appreciation of why this process (whatever it is) is appropriate.

Comment 07:Attachment 2,Page 115 of 172,This section describes the methodology used for sensitivity assessment. Bullets 2 and 3 near the bottom of the page describe a smoothing process used prior to evaluating the significance of the change in motion between the "initial" analyses and the "updated" analyses.

The following comments/questions are related to the effect of these two steps of the methodology on smoothing out, or muting, the actual differences between the responses for the "initial" and "updated" soil profiles.

- The effect of bullet 2 is that the differences between the "updated" and "initial" responses are averaged over a 2 Hz wide band at 1 Hz and a 20 Hz wide band at 10 Hz. Given the relatively narrow frequency band of the site amplification functions, the use of this wide smoothing window for comparison between the "initial" and "updated" results can lead to under-prediction of the expected seismic response of the site and supported structure(s).
- Bullet 3 infers that these "smoothed" ratios are used to multiply the SSI input motions from the "initial" analyses to obtain "updated" input motions. Since the smoothing process in bullet 2 potentially removes much of the site specific character of the soil amplification functions, it is expected that the end result of implementing bullets 2 and 3 to estimate "updated" ground motions will lead to an under-prediction of the input motion vis-à-vis using the more rigorous approach involving the convolution of 60 randomized columns.

It is not clear how this approach to estimating the "updated" input motion yields input motions that are consistent with the requirements of the NRC's SRP and ISG-17.

Comment 08:Attachment 2, Page 115 of 172,Section 3JJ.7.4, reproduced below for reference, states that the mean ARS at the surface is computed using the arithmetic mean of the LB, BE, and UB, "updated" profiles.

The responses computed using the LB and UB soil profiles are associated with soil profiles having a much lower likelihood of occurrence than that of the BE profile, yet the response from each of these profiles is given an equal weight in the averaging approach described. This approach reduces the contribution of the most likely response while amplifying the contributions from the less likely LB and UB profiles. This average response is then used in the process to scale the "initial" ground motion results, which use 60 soil columns and preserve the proper distribution of likelihood, up to obtain estimated "updated" set of input motions and soil properties. This approach will result in scaling the input motion too little in the frequency band associated with the best estimate response, and too much in the frequency ranges of the less likely LB and UB responses.

Comment 09:Appendix B of Attachment 2 Enclosure 2 Transfer Functions are provided in Appendix B of Attachment 2 Enclosure 2.
Appendix B are indicative of numerical problems in the 3-D solution. The response provided to RAI 3.7.1-16 is based on comparison of 2-D solutions for a range of Poisson's ratios. It is not clear from the RAI response that the transfer functions for 2-D solutions would be of a similar nature as those

shown in Appendix B for the 3-D SASSI solutions, and therefore can be used as the basis for demonstrating the relatively low impact of the high Poisson's ratio on the 3-D solutions.

The applicant is requested to provide transfer functions that are associated with the 2-D problems run for the RAI response 3.7.1-16.