

TI team members:

Below I have copied some feedback from Joe Hunt (e-mail [huntri@y12.doe.gov](mailto:huntrj@y12.doe.gov)), who works for a DOE contractor at the Oak Ridge site. He did a quick review of the CEUS-SSC draft report and provided these comments. I feel they are worth our consideration as we begin to make revisions.

Steve

I appreciate the opportunity to review the CEUS-SSC draft report. The report is very timely and a lot of good work has been done to produce the report. I am more of a user of the information contained in the report and I am not qualified to review the majority of the technical information in the report. I used to keep up with the development of the ground motion attenuation functions, but the technical details of that have now exceeded my abilities. Based on my review, I offer the following observations that might be helpful in preparation of the final report:

1. Section 1.1.5, Differences from USGS National Seismic Hazard Mapping Project – This section is misleading to me. It should not make any difference that the USGS and the nuclear industry are looking at different AFEs. The two groups are looking at the same basic seismological and geological data, and there really is no good reason as to why a consensus cannot be reached about the sources, maximum magnitudes, b values, uncertainties, etc. I understand that the RLMEs would probably not impact 10^{-2} to 10^{-3} AFEs like it would much lower AFEs, but this has definitely had an impact on the USGS seismic hazard for the New Madrid and Charleston areas. I had an occasion to compare seismic hazard studies performed at a site by the USGS (with their ground motion attenuation) and COLA (with EPRI ground motion attenuation), and the seismic hazard values were significantly different. The slopes of the hazard curves were drastically different which is a key parameter in implementing the DOE standards and the latest NRC criteria for new nuclear power plants. It is very easy for a lay person to compare the hazard results at DOE and nuclear power plant sites and to ask some very difficult questions as to why are the results so different, particularly when the USGS seismic hazard results are typically higher. I would suggest that this section be revised to identify the specific differences in source zones, maximum magnitudes, etc. and hopefully state that efforts will be made in the future to resolve these differences, or just delete this section. At some point in time, everybody should be using the same information, including the same ground motion attenuation functions. Hopefully the eastern US ground motion attenuation study to be completed in 2014 will get a consensus on the ground motion attenuation functions.
2. I would like to review the seismic hazard results for Chattanooga when they are available, since I know more about the east TN area than other areas. ***I sent him the supplement with these results.***

3. The seismic hazard results for the 5 sites presented are very interesting. In general, the CEUS SSC model 2010 gives the highest seismic hazard and the reason given is the M_{\max} of the background source (except for Savannah). If this is indeed the case, it is suggested that a special effort be given to come up with a consensus M_{\max} with the USGS and COLA people capturing the different opinions with bigger uncertainties or more clearly explain what new information has lead to different M_{\max} between the technical people, and whether or not the USGS and COLA agree with the new. For example, what has changed for the Houston site (low seismic area) that results in such different seismic hazard curves.
4. The comparisons of the seismic hazard using the same ground motion attenuation functions are good because this takes out the variability between different ground motion attenuation functions. At the same time, I think if you compared the USGS seismic hazard (with their ground motion attenuation relationships), that the USGS seismic hazard would be greater than any of the results presented. I would suggest that the USGS seismic hazard also be compared with the results presented. I think this would illustrate the need for the eastern ground motion study and the importance with trying to reach a consensus on the ground motion functions to be used in seismic hazard studies by everyone.
5. The comparisons also beg the question as to how these new results compare with the original EPRI/LLNL results. I made a rather quick comparison with the nuclear power plants near the sites and it indicates that the seismic hazard has significantly increased in most cases. I suggest that there should be some very focused discussion about how these new results compared to the old and why the seismic hazard has increased, i.e., what specific new information have we obtained that justifies significantly increasing the seismic hazard.