

September 16, 2008

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Subject: Response to *Central and Eastern United States Seismic Source Characterization for Nuclear Facilities*: Participatory Peer Review Report on Workshop No. 1, dated August 15, 2008.

Dear Carl and Walter,

Thank you for your letter summarizing the Participatory Peer Review Panel's review of Workshop No. 1 for the CEUS SSC project. The letter reflects a clear understanding of the purposes of the workshop in the context of the SSHAC Level 3 process. In the spirit of a participatory peer review process, we welcome timely, insightful, and constructive reviews and suggestions that will assist the Project Manager and TI team in steering the project toward a successful conclusion. One mechanism for that interaction is this correspondence between the PPRP and the project management.

To provide the PPRP with insights into our intentions relative to the specific recommendations made in the letter, we provide below a response to the recommendations that have been underlined in your letter to draw attention to their priority. We also value the perspectives provided in other parts of the letter and these will be given serious consideration during the course of the project activities leading up to and including Workshop No. 2.

1. Basic goals of workshop

While the resource experts did a high-quality job of describing data sets, the uncertainty in the data sets was not generally described. Uncertainty involving both quality and quantity of data—including non-uniqueness of interpretation—is fundamentally important for assessing a SSC model, both for evaluating alternatives and for considering the longevity of the results of the study. Future improvements in the quantity and quality of the data being used in the analysis may have an important effect on uncertainty and thus the stability of seismic hazard assessment. Evaluation and understanding of the present uncertainty in the data sets should be a key element of the assessment. In order to fully address this important need, we recommend that the TI Team continue to interact with the data resource experts to evaluate the uncertainty in their data. In this connection, we emphasize the importance of obtaining germane reference lists from the resource experts.

The TI team has established contact with a number of resource experts regarding their datasets, including the subset of experts who made presentations at the first workshop. We agree that a key consideration in the use of the various datasets is an evaluation of the quality of the data and the associated uncertainties. We will continue to interact with resource experts to evaluate the uncertainty in the various data that are compiled for the project.

2. How will data sets be used?

The schedule for the project specifies that a preliminary SSC model be completed over the period December 2008 to August 2009. However, the data sets, including the earthquake catalog, that will be used to evaluate and assess sources are not scheduled to be completed until June 2009. We recommend prioritizing this work element to ensure that the critical data sets are completed early so that the assessment is not left until the final two months of the assessment effort.

Although the schedule calls for carrying out the data compilation effort throughout the entire SSC model development period, most of the data compilation effort has already been completed. Work is proceeding on the seismicity catalog effort and priority will be given to completing it in a timeframe that makes it readily available during the SSC model development period.

Interpretations of these data that are in the public domain are spread throughout the geosciences literature. In view of the potential significance of the information from the seismic reflection profiles, not only for identifying seismic source zones and their properties but also for evaluating competing tectonic models, we recommend that interpretations of relevant seismic reflection profiles over the CEUS that are in the public domain be compiled for use in the project.

A variety of geophysical datasets are being compiled and considered in the SSC model development process. Most of the datasets reside within the literature. Seismic reflection data are one of the datasets that are being compiled and the TI team will make every effort to identify and consider the data that are available. The team is open to suggestions for datasets that might be identified by members of the PPRP and this input would be appreciated.

3. Identifying key SSC issues and alternative viewpoints

The PPRP recognizes the difficulty of identifying the SSC issues and relevant alternative interpretations that will be central to achieving the goals of Workshop #2 (WS-2). We recommend that the TI Team initiate identification and evaluation of these issues and interpretations as early as possible—to allow time for their full consideration prior to WS-2 and to ensure completeness vis-à-vis the diversity of views within the informed technical community. To this end, the PPRP has identified some key issues that should be considered when preparing for WS-2; these are listed below.

The goal of the TI team, as evaluators responsible for capturing the range of views held by the larger informed technical community, will use a variety of methods to identify alternative technical viewpoints, including reviews of the literature, conversations with researchers, professional conferences and proceedings (e.g., the upcoming USGS Maximum Magnitude workshop), and discussions at the workshops. The purpose of Workshop #2 is to consider alternative interpretations of important technical issues. The TI team agrees that the early identification of issues and proponents to speak to those issues is important and every effort will be made to do so. It is also recognized that not all proponents of alternative viewpoints will be able to attend the workshop, but this will not prevent the TI team from communication with the individuals or from evaluating their points of view.

Because of the key importance of WS-2, we recommend that the Project Team actively engage the PPRP in reviewing and commenting on the planning of WS-2 and in the development of the workshop agenda.

We welcome the assistance and perspectives that members of the PPRP can provide in the planning of WS -2.

5. Six test sites for hazard calculations

Insofar as the planned test sites (a) have not yet been selected and (b) apparently will play an important role later in the SSC process, the criteria for site selection will be of great interest to the PPRP beyond the example given in the Project Plan. We note that in the discussion of the test site selection in the Project Plan (see p. 4-4) the provision is made that the sites should be “as generic as possible.” We recommend that the sites should be representative of the range of seismogenesis over the region of applicability of the CEUS SSC model.

We agree that the sites should be representative of the range of seismotectonic conditions that any site in the CEUS might entail. The notion of choosing “generic” sites was merely meant to imply that we are not planning to choose any particular named nuclear facility site. The TI Team and Project Manager will also provide the PPRP the criteria and timetable for identifying the demonstration sites. The TI Team and Project Manager will provide to the PPRP the preliminary demonstration sites for review and comment prior to their finalization for use in sensitivity analyses performed during Task 4.

Thanks again for the excellent reviews, and we trust that this will set a positive tone for carrying out this important project. If you have any questions regarding this letter, please feel free to contact us.

Sincerely,

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