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SUBJECT: GUIDANCE FOR SDP PHASE 2 NOTEBOOK BENCHMARKING SITE VISITS

Attached is the draft guidance for the SDP Phase 2 Notebook benchmarking site visits. Based on lessons learned, this guidance may be revised following the first few site visits. Please note that this is only guidance and may need to be adjusted depending on the ability of a licensee to support the visit. These benchmarking visits and this guidance document will be discussed at the upcoming SRA counterpart meeting. If you have any questions, please give me a call at (301) 415-1114.

Attachment:  
As stated

## **BENCHMARKING STANDARD FOR SDP PHASE TWO WORKSHEETS**

This standard compares the SDP Phase 2 notebook and licensee risk model results to ensure that the SDP is generally conservative. The benchmarking should be performed after the worksheets have been revised to include the appropriate licensee comments and recommendations, and the special initiator worksheets have been completed. The benchmarking should be performed by a SRA or OST risk analyst and a BNL risk expert.

### **PREPARATION**

Preparation is essential for successful benchmarking of the SDP notebooks. The benchmark teams needs to identify those hypothetical inspection findings that will expose weaknesses in the SDP notebooks. In addition, if possible, the benchmark team needs to determine the risk impact of external and internal flooding initiators which are currently not considered in the SDP notebooks.

#### **Preparation Prior to the Site Visit**

In order to facilitate the site visit , the benchmark team should contact the licensee to discuss the benchmark plan. If possible, the team should request the following information be made available at the beginning of the site visit :

- a) Description of basic events
- b) Copy of all event trees in the model
- c) Risk achievement worth (RAW) for the basic events in the complete model. Complete model contains both internal (internal initiators and internal floods) and external (seismic, fire, external floods, high winds) events.
- d) Risk achievement worth (RAW) for the basic events in the internal events model.

Case runs may be identified prior to site visits during the above discussion for the licensee to calculate.

The team should ensure that the licensee has a copy of the site's Revision 0 of the SDP Phase 2 notebook, and this document.

#### **Preparation on Site**

Upon arrival on site the team should meet with the licensee staff to discuss the objectives of this site visit. At this time, the team will solicit any comments that the licensee may have on the site's Revision 0 SDP notebook.

Following the review of the licensee's information, the team should identify those areas in the SDP document that require benchmarking. The following guidance is provided below to assist the team to determine such areas:

- a) Determine the risk achievement worth (RAW) for basic events, using the licensee's internal events model (with maintenance/testing unavailabilities included) that represents a delta core damage frequency of  $1\text{E-}6/\text{yr}$  or greater.
- b) Using the results from a), identify the basic events that can be mapped into the sequences on the SDP phase 2 worksheets.
- c) Compare the RAWs from the complete model to those from the internal events model. Identify those with a significant difference (one or more color difference) that may reveal the impact of external event contributions.
- d) The BNL team member should utilize the following guidance to identify the specific initiators that should be benchmarked:
  - i) those initiators for which generic trees have been developed, e.g., MSLB and SGTR
  - ii) those initiators with a low likelihood of occurrence that were not well described in the licensee's IPE. For example, special initiators within rows 3 and 4 of Table 1 of the SDP notebook.

Based on the above analysis, the team should identify potential candidates for sensitivity studies. In addition to the above items, the team should also include the base case set of items that are generically defined for classes of plants for sensitivity studies.

### **ASSESSMENT PHASE**

During the assessment phase the team will identify those areas of the SDP notebook that need to be revised.

- a) The team should request the licensee to perform those sensitivity calculations identified in the preparation phase.
- b) The team should perform parallel sensitivity analyses using the SDP notebook.
- c) In those areas where the SDP notebook underestimates the impact, the team should investigate the underlying reasons.
- d) The team should identify those basic events with a RAW value (from the internal-events-only model) corresponding to delta core damage frequency of  $1\text{E-}6/\text{yr}$  or greater that are not included in the SDP notebook.
- e) The team should identify those basic events with a RAW value (from the full model) corresponding to delta core damage frequency of  $1\text{E-}6/\text{yr}$  or greater that are not included in the SDP notebook.

- f) The team should discuss with the licensee those risk-significant dependent human actions that are modeled in the licensee's PSA. The team should then determine if the SDP notebook should be revised.

The team should compile those areas where differences existed between the SDP notebook and the licensee's PSA. In addition, the team should identify the subset of these areas which require revision to the SDP notebook.

### **CONCLUSION OF VISIT**

The team should meet with the licensee to discuss the results of the benchmarking effort. The team should communicate to the licensee those areas of differences that will be included in the next revision of the SDP notebook.

### **POST-VISIT REPORT**

Brookhaven National Laboratory (BNL) will prepare a post-visit report that includes the following:

- a) Summary of the areas reviewed
- b) Areas of differences identified
- c) Reasons for differences identified
- d) Proposed revisions to the SDP notebook.