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Your ref: Docket No. 52-006  
Our ref: DCP\_NRC\_002668

October 20, 2009

Subject: AP1000 Response to Proposed Open Item (Chapter 2)

Westinghouse is submitting the following responses to the NRC open item (OI) on Chapter 2. These proposed open item response are submitted in support of the AP1000 Design Certification Amendment Application (Docket No. 52-006). The information included in these responses is generic and is expected to apply to all COL applications referencing the AP1000 Design Certification and the AP1000 Design Certification Amendment Application.

Enclosure 1 provides the response for the following proposed Open Item(s):

OI-SRP2.5-RGS1-15

Questions or requests for additional information related to the content and preparation of this response should be directed to Westinghouse. Please send copies of such questions or requests to the prospective applicants for combined licenses referencing the AP1000 Design Certification. A representative for each applicant is included on the cc: list of this letter.

Very truly yours,

A handwritten signature in black ink, appearing to read 'Robert Sisk'.

Robert Sisk, Manager  
Licensing and Customer Interface  
Regulatory Affairs and Standardization

/Enclosure

1. Response to Proposed Open Item (Chapter 2)

ENCLOSURE 1

AP1000 Response to Proposed Open Item (Chapter 2)

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# AP1000 DESIGN CERTIFICATION REVIEW

## Response to SER Open Item (OI)

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RAI Response Number: OI-SRP2.5-RGS1-15  
Revision: 0

### **Question:**

On the basis of its review of the applicant's responses to the five issues of RAI-SRP2.5-RGS1-15 Question 6, including the revisions to the DCD and the resolution of the referenced RAI-SRP2.5-RGS1-02, RAI-SRP2.5-RGS1-03, and RAI-SRP2.5-RGS1-04, the staff concludes that, although the applicant provided adequate resolutions to all of the staff's concerns identified in Issue 6 of Question 3 of RAI-SRP2.5-RGS1-15, the AP1000 DCD, Revision 17, Tier 2, Table 2-1, does not completely reflect the resolution. Therefore, the staff considers RAI-SRP2.5-RGS1-15 unresolved.

### **Westinghouse Response:**

Westinghouse has reviewed the five items listed in Issue 6 of question 3 of RAI-SRP2.5-RGS1-15 in relation to AP1000, Revision 17, Tier 2, Table 2-1 and have identified the following changes to be made to Revision 17 of the DCD that are in addition to those that have already been identified in the RAIs associated with DCD subsection 2.5.

- Item (i) – The SSE should be referred to as certified seismic design response spectra (CSDRS).

Westinghouse has determined that the SSE in Table 2-1, Tier 2, as well as Table 5.0-1, Tier 1, should be changed. Changes are also necessary to DCD subsections 3.7.1 and 3.7.1.1. The changes are shown below in the Design Control Document (DCD) Revision section

- Item (ii) – relates to inversions in the soil properties below the nuclear island.

The wording in Table 2-1 under lateral variability, Case 1, is consistent with the revised wording to the DCD for subsection 2.5.2.1, item 6, which states: "The average low strain shear wave velocity in any layer should not be less than 80 percent of the average shear wave velocity in any layer at higher elevation." Therefore, no change to Table 2-1 of the DCD is required.

- Item (iii) – relates to where seismic response spectra are defined.

Wording was revised in DCD subsections 2.5.2 and 2.5.2.1 to address the identified inconsistency per RAI-SRP-RGS1-002 and RAI-SRP-RGS1-003. This issue does not affect site parameters; therefore, no change to Table 2-1 of the DCD is required.

# AP1000 DESIGN CERTIFICATION REVIEW

## Response to SER Open Item (OI)

- Item (iv) – relates to the acceptability of the site specific GMRS.

This issue does not affect site parameters; therefore, no change to Table 2-1 of the DCD is required.

- Item (v) – related to updating Tier 1 Table 5.01 and Tier 2 Table 2-1.

This issue has been completed with the response to this open item.

### Design Control Document (DCD) Revision:

The following changes are to be made to post Revision 17 DCD Table 5.01, Tier 1, and Table 2-1, Tier 2. Also, Revisions are made to DCD Subsections 3.7.1 and 3.7.1.1.

Table 5.0-1 (cont.) Site Parameters	
Seismic  <u>SSECSDRS</u>	<del>SSE-CSDRS</del> free field peak ground acceleration of 0.30 g at foundation level of nuclear island with modified Regulatory Guide 1.60 response spectra (See Figures 5.0-1 and 5.0-2.) <u>The SSE is now referred to as CSDRS.</u>
Fault Displacement Potential	None

Table 2-1 (Sheet 1 of 4) SITE PARAMETERS	
Seismic  <u>SSECSDRS</u>	0.30g peak ground acceleration <sup>(c)(6)</sup>
Fault Displacement Potential	Negligible

### 3.7.1 Seismic Input

The geologic and seismologic considerations of the plant site are discussed in Section 2.5.

The peak ground acceleration of the safe shutdown earthquake, now referred to as the Certified Seismic Design Response Spectra (CSDRS), has been established as 0.30g for the AP1000 design. The vertical peak ground acceleration is conservatively assumed to equal the horizontal value of 0.30g as discussed in Section 2.5.

# AP1000 DESIGN CERTIFICATION REVIEW

## Response to SER Open Item (OI)

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### 3.7.1.1 Design Response Spectra

The AP1000 design response spectra of the safe shutdown earthquake, now referred to as the Certified Seismic Design Response Spectra (CSDRS), are provided in Figures 3.7.1-1 and 3.7.1-2 for the horizontal and the vertical components, respectively.

**PRA Revision: None**

**TR Revision: None**