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Your ref: Docket No. 52-006  
Our ref: DCP/NRC2262

September 15, 2008

Subject: AP1000 Response to Request for Additional Information (SRP2.3.1)

Westinghouse is submitting a revised response to the NRC request for additional information (RAI) on SRP Section 2.3.1. This RAI response is submitted in support of the AP1000 Design Certification Amendment Application (Docket No. 52-006). The information included in the response is generic and is expected to apply to all COL applications referencing the AP1000 Design Certification and the AP1000 Design Certification Amendment Application.

A revised response is provided for RAI-SRP2.3.1-RSAC-01. This response completes all requests received to date for SRP Section 2.3.1. A response to RAI-SRP2.3.1-RSAC-01 through -04 was submitted under letter DCP/NRC2170 dated June 26, 2008.

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 Request for Additional Information on SRP Section 2.3.1

cc: D. Jaffe - U.S. NRC 1E  
E. McKenna - U.S. NRC 1E  
S. Mitra - U.S. NRC 1E  
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R. Kitchen - Progress Energy 1E  
A. Monroe - SCANA 1E  
J. Wilkinson - Florida Power & Light 1E  
C. Pierce - Southern Company 1E  
E. Schmiech - Westinghouse 1E  
G. Zinke - NuStart/Entergy 1E  
R. Grumbir - NuStart 1E  
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ENCLOSURE 1

Response to Request for Additional Information on SRP Section 2.3.1

# AP1000 TECHNICAL REPORT REVIEW

## Response to Request For Additional Information (RAI)

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RAI Response Number: RAI-SRP2.3.1-RSAC-01  
Revision: 1

### **Question:**

This RAI refers to Revision 2 to TR 108. Please clarify the definition of the maximum and minimum normal air temperature site parameters presented in DCD Tier 2, Table 2-1. For example, do the maximum and minimum normal air temperature site parameters represent annual or seasonal 1 percent exceedances? Does the maximum normal coincident wet bulb value represent a mean or maximum value?

### **Follow-up RAI received 8/8/08:**

**The staff finds the response to RAI – SRP 2.3.1 – RSAC – 01 incomplete.**

**Revise DCD Tier 2 Table 2-1 to indicate that the maximum and minimum normal values are 1% seasonal exceedance values and indicate the months that comprise the applicable heating and cooling seasons.**

**This additional information regarding the definition of the AP1000 air temperature site parameters is required to ensure that COL applicants appropriately calculate their corresponding air temperature site characteristics in order to demonstrate that their site characteristics are within the site parameters specified for the standard AP1000 design.**

### **Westinghouse Response:**

The 1% exceedance used for the AP600 and AP1000 is a seasonal number. The potential ambiguity in exceedance value definition stems from the mid 1990s change from seasonal to annual exceedance values in certain areas, including HVAC design inputs. Since the AP600 project was well underway when the change to annual values was made by ASHRAE and by others, the AP600 (and now the AP1000) have continued to use the older data reporting method for consistency.

ASHRAE weather data, as presented in the 2005 Fundamentals Handbook, states that: The extreme maximum wet-bulb temperature provides the highest wet-bulb temperature observed over the entire period of record and is the most extreme condition expected for evaporative processes such as cooling towers. For most locations, the extreme maximum wet-bulb value is significantly higher than the 0.4% wet-bulb and should be used only for design of critical applications where an occasional short-duration capacity shortfall is not acceptable. The Westinghouse design uses an extreme wet bulb design temperature that does not consider short term (less than two hour extreme wet bulb exceedances). As the NRC correctly noted, this somewhat reduces the extreme wet bulb design temperature.

# AP1000 TECHNICAL REPORT REVIEW

## Response to Request For Additional Information (RAI)

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### **Response to Follow-up RAI received 8/8/08:**

DCD Table 2-1 will be revised as requested and as shown below. This change will be included in Revision 17 of the DCD.

#### **Design Control Document (DCD) Revision:**

None

Note b) of Tier 2 Table 2-1 of the DCD will be revised as shown below:

#### Notes:

- (a) Maximum and minimum safety values are based on historical data and exclude peaks of less than 2 hours duration.
- (b) The ~~M~~maximum and ~~m~~minimum normal values ~~are~~ is the 1-percent seasonal exceedance magnitude temperature. The minimum normal value is the 99-percent seasonal exceedance temperature. The minimum temperature is for the months of December, January, and February in the northern hemisphere. The maximum temperature is for the months of June through September in the northern hemisphere. The 1-percent seasonal exceedance is approximately equivalent to the annual 0.4-percent exceedance. The 99-percent seasonal exceedance is approximately equivalent to the annual 99.6-percent exceedance.

#### **PRA Revision:**

None

#### **Technical Report (TR) Revision:**

None