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Your ref: Docket No. 52-006
Our ref: DCP/NRC2486

May 22, 2009

Subject: AP1000 Response to Request for Additional Information (SRP 19)

Westinghouse is submitting a response to the NRC request for additional information (RAI) on SRP Section 19. This RAI response is submitted in support of the AP1000 Design Certification Amendment Application (Docket No. 52-006). The information included in this response 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 RAI(s):

RAI-SRP19.0-SPLA-19

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 19

Handwritten initials in black ink, possibly 'DDB' and 'NRO'.

cc:	D. Jaffe	- U.S. NRC	1E
	E. McKenna	- U.S. NRC	1E
	S. Sanders	- U.S. NRC	1E
	T. Spink	- TVA	1E
	P. Hastings	- Duke Power	1E
	R. Kitchen	- Progress Energy	1E
	A. Monroe	- SCANA	1E
	P. Jacobs	- 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 19

AP1000 TECHNICAL REPORT REVIEW

Response to Request For Additional Information (RAI)

RAI Response Number: RAI-SRP19.0-SPLA-19

Revision: 0

Question:

Part 50.44(c)(4)(ii) states that equipment must be functional, reliable, and capable of continuously measuring the concentration of hydrogen in the containment atmosphere following a significant beyond design-basis accident. Late in the severe accident sequence, it is not clear that this can be accomplished with monitors inside containment.

Please confirm that in-containment hydrogen monitors will survive through all phases of a severe accident. Alternatively, identify additional equipment that is outside containment and capable of continuous hydrogen monitoring. Provide the basis for concluding that this equipment will survive to measure the concentration of hydrogen in the containment atmosphere for as long as necessary.

Westinghouse Response:

The containment hydrogen sensors are used to monitor the hydrogen concentration inside containment in order to confirm that detonable limits of hydrogen do not accumulate to threaten containment or compartment integrity for severe accidents. The hydrogen monitor design has not changed since issuance of the Final Safety Evaluation Report Related to Certification of the AP1000 Standard Design, NUREG-1793, September 2004 when the staff concluded that the Hydrogen Monitor System design meets the requirements of GDC 41 and 10 CFR 50.44, as well as provisions of draft RG 1.7, Rev. 3.

As described in DCD Section 6.2.4, there are three sensors placed in the upper dome where bulk hydrogen concentration can be monitored. One channel is powered by each of non-Class 1E load groups (i.e. NNS1 and NNS2) plus a third for resolving discrepancies. The channels are designated as Type C, Category 3, per Regulatory Guide 1.97 and as described in DCD Section 7.5.

The Instrumentation Requirement Calculation (APP-VLS-M3C-101, Rev. 1) requires that the monitors be constructed of high quality and be selected to withstand the service environment. The design of the monitors meets the requirements of 10CFR 50.44.

Furthermore per AP1000 COL Standard Technical Report Submittal of APP-GW-GLR-069, (TR-68) the hydrogen monitors are listed in Attachment A, Table 6b as equipment located inside containment that will be subjected to the severe accident. As referenced in the topical report, there was reasonable assurance that the equipment and instrumentation identified in the Tables will operate in the severe accident environment for which they are intended, and over the time

AP1000 TECHNICAL REPORT REVIEW

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span for which they are needed. Specifically the COL applicant referencing the AP1000 certified design will perform a thermal response assessment of the as-built equipment used to mitigate severe accidents to provide additional assurance that this equipment can perform its severe accident functions during environmental conditions resulting from hydrogen burns (ITAAC 9.c in Table 2.2.3-4).

Design Control Document (DCD) Revision: None

PRA Revision: None

Technical Report (TR) Revision: None