Westinghouse

Westinghouse Electric Company
Nuclear Power Plants
P.O. Box 355
Pittsburgh, Pennsylvania 15230-0355
USA

U.S. Nuclear Regulatory Commission
ATTENTION: Document Control Desk
Washington, D.C. 20555

Direct tel: 412-374-6206
Direct fax: 724-940-8505
e-mail: sisk1rb@westinghouse.com

Your ref: Docket No. 52-006
Our ref: DCP_NRC_002583

August 4, 2009

Subject: AP1000 Response to Request for Additional Information (SRP 18)

Westinghouse is submitting a response to the NRC request for additional information (RAI) on SRP Section 15. 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-SRP18-COLP-16
RAI-SRP18-COLP-18

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,

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

/Enclosure

1. Response to Request for Additional Information on SRP Section 18

D063
NRO

cc:	D. Jaffe	-	U.S. NRC	1E
	E. McKenna	-	U.S. NRC	1E
	P. Donnelly	-	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
	B. Seelman	-	Westinghouse	1E

ENCLOSURE 1

Response to Request for Additional Information on SRP Section 18

AP1000 TECHNICAL REPORT REVIEW

Response to Request For Additional Information (RAI)

RAI Response Number: RAI-SRP18-COLP-16
Revision: 0

Question:

Section 18.5, Criterion 4 of NUREG-0711 states:

> The Task Analysis should address issues such as:
>
> - The number of crew members
> - Crew member skills
> - Allocation of monitoring and control tasks to the (a) formation of a meaningful
> - job, and (b) management of a crew member's physical and cognitive workload

Westinghouse completed 2 separate Operational Sequence Analyses (OSA) and submitted the implementation plans and the results summaries of these reports for the staff's review.

Section 3.1 of the OSA-2 report APP-OCS-J1R-220, Revision A, "AP1000 Operational Sequence Analysis Summary Report," describes the analysis of 19 risk-important tasks that were conducted during the OSA-2. The report states: "One of these tasks could not be completed within the PRA time window according to the current analysis results."

It was unclear in the summary report how Westinghouse plans to disposition and address this task that could not be completed within the PRA time window. Please submit to the NRC Westinghouse's plan to address this issue

Westinghouse Response:

The results of OSA-2 (APP-OCS-J1R-220, "AP1000 Operational Sequence Analysis (OSA-2) Summary Report," Revision A) indicated that one of the risk-important tasks could not be completed within the time window. This refers to Task 14 (PDS6-MANADS), which is the failure to manually actuate ADS as a recovery action from the failure of the automatic or manual actuation of ADS in the later stages of a steam generator tube rupture event. The results of OSA-2 indicated that the required tasks required 9.72 minutes to be completed.

The original 7 minute time window was extracted from the OSA-2 Implementation Plan (APP-OCS-J1R-210, Rev 0). Upon further investigation, it was found that according to Chapter 43 of the PRA (APP-GW-GL-022, Table 43C-1), the time window for event PDS6-MANADS is stated to be "hours available." This discrepancy was discussed with the relevant PRA experts, procedures and operations personnel, and the design engineers. The original "hours available" was based on the operator actions being undertaken after core damage had already occurred (as stated in the PRA Chapter 43) and this information had been omitted during the development of the OSA-2 Implementation Plan.

Therefore the time window for Task 14 (PDS6-MANADS) will be revised to 60 minutes. With a task time of 9.72 minutes, it is concluded that Task 14 can be completed within the time window. This time window and the results will be revised in Rev B of the OSA-2 results report expected to be complete August 2009.

References:

1. APP-OCS-J1R-210, Rev. 0, "AP1000 Operational Sequence Analysis 2 (OSA-2) Implementation Plan," Westinghouse Electric Company LLC.

2. APP-GW-GL-022 Chapter 43, Rev. 1, "AP1000 Probabilistic Risk Assessment," Westinghouse Electric Company LLC.

Design Control Document (DCD) Revision:

None.

PRA Revision:

None.

Technical Report (TR) Revision:

None.

AP1000 TECHNICAL REPORT REVIEW

Response to Request For Additional Information (RAI)

RAI Response Number: RAI-SRP18-COLP-18
Revision: 0

Question:

Section 4.1 of APP-OCS-J1R-210, Revision 1 "Operational Sequence Analysis 2 (OSA-2) Implementation Plan" says that a task analysis will be performed to cover the identified areas where the data and displays available in the MCR may be utilized in TSC and/or EOF functions. The following 4 tasks represent the tasks that the AP1000 HFE program needs to address:

- Classification of emergency events
- Determination of the extent of any damage to the core
- Provisions of protective action recommendations
- Provisions of information to support dose assessments.

Westinghouse submitted for Staff review, APP-OCS-J1R-220, Revision A which contains detailed results for the OSA-2 task analysis. The report is missing information related to a task analysis for the TSC/EOF as described above. Please provide to the Staff the task analysis results for the TSC/EOF, or if the analysis is not complete, provide a date when it will be submitted for review.

Westinghouse Response:

The task analysis for the four TSC/EOF tasks list above is provided in APP-OCS-J0A-001, Rev A, "Human Factors Engineering Analysis to Support Technical Support Center and Emergency Operations Facility Design." This report details the results of the task analysis and the operations experience review for the TSC and EOF. This information is being used in the identification and development of displays that are required to support the specific tasks identified above. The applicable human system interface (HSI) design guidelines that are based on the document APP-OCS-J1-002, "AP1000 Human System Interface Design Guidelines" are also identified to promote the human factors design adequacy of the TSC and EOF designs.

APP-OCS-J0A-001 will be submitted for review by 15th August 2009.

Revision B of APP-OCS-J1R-220, "AP1000 Operational Sequence Analysis Summary Report" will include the appropriate cross-reference to the APP-OCS-J0A-001 report. This document will also be completed in August 2009.

Reference:

None.

AP1000 TECHNICAL REPORT REVIEW

Response to Request For Additional Information (RAI)

Design Control Document (DCD) Revision:

None.

PRA Revision:

None.

Technical Report (TR) Revision:

None.