



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: 412-374-5005
e-mail: sisk1rb@westinghouse.com

Your ref: Docket No. 52-006
Our ref: DCP/NRC2451

April 28, 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 18. 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-08 R1

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', written over a horizontal line.

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

/Enclosure

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

cc:	D. Jaffe	- U.S. NRC	1E
	E. McKenna	- U.S. NRC	1E
	P. Donnelly	- U.S. NRC	1E
	C. Proctor	- 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-08

Revision: 1

Question:

The following Westinghouse documents were reviewed and used to conclude that NUREG-0711 guidance was being implemented. These documents are viewed by the staff as the "implementation plans" described by the NUREG. These documents need to be docketed because they directly support the staff's assessment of safety.

1. APP-OCS-GBH-001 Rev 0 "AP1000 Human Factors Engineering Program Plan"
2. APP-OCS-GGR-110-P "AP1000 Technical Support Center and Emergency Operations Facility Workshop," Rev 1 of Feb 2008
3. APP-OCS-J1-002 Rev 0 "AP1000 HSI Design Guidelines"
4. APP-OCS-J1R-210 "OSA-2 Implementation Plan"
5. WCAP-14651 Rev 2 "Integration of Human Reliability Analysis with Human Factors Engineering Design Implementation Plan" Note: This may have been docketed but we could not find it in ADAMS.
6. WCAP-14690 "Designer's Input to Procedure Development for the AP600" Note: This may have been docketed but we could not find it in ADAMS.
7. APP-OCS-J1-020 Rev 0 "Computerized Procedures System Functional Requirements"
8. APP-OCS-GEH-120 Rev A "AP1000 Human Factors Engineering Design Verification Plan"
9. APP-OCS-GEH-220 Rev A "AP1000 Human Factors Engineering Task Support Verification Plan"
10. APP-OCS-GEH-320 Rev A "AP1000 Human Factors Engineering Integrated System Validation Plan"
11. APP-OCS-GEH-420 Rev A "AP1000 Human Factors Engineering Discrepancy Resolution Process"
12. APP-OCS-J1R-100 Rev 0 "Function-Based Task Analysis Methodology and Implementation for AP1000"
13. APP-OCS-J1R-110 Rev 0 "Operational Sequence Analysis Methodology"
14. APP-GW-GJP-100, Rev G, "Normal Operating Procedure (NOP)"
15. Writer's Guidelines APP-GW-GJP-200, Rev D, "AP1000 Writer's Guideline for Two-Column Procedures"
16. Westinghouse Owner's Group Writer's Guide for Emergency response Guidelines, HP/LP, Rev 2

Note 1: Items 1 and 2 requested to provide more detailed documentation for the "tailored approach" being applied to the HFE program for EOF and TSC.

Note 2: Requested because it demonstrates implementation of NUREG-0711 criteria from section 8.4.5 (1). If these criteria are addressed in higher level document the Design Guideline would not need to be docketed.

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Note 3: Items 5 and 6 may have been previously docketed. We could not find them in Adams to verify this.

The following Westinghouse documents were reviewed and used to verify the effectiveness of HFE implementation plans, COL action item status, and ITAAC status. These documents were made available by Westinghouse for auditing. They do not need to be docketed.

1. APP-OCS-J1R-120 "AP1000 Operational Sequence Analysis Summary Report" – Documents results of task analysis to support closure of COL Action Item 18.5-1.
2. App-OCS-GER-031 "The Incorporation of Human Factors Engineering into the Development of the AP1000 Plant Procedures" – Document task analysis results and ensures results are communicated to procedural development.
3. APP-OCS-GER-041 "The Incorporation of Human Factors Engineering into the Development of the AP1000 Plant Training Program" – Documents task analysis results and ensures results are communicated to training development.
4. WCAP-16555 Rev 1 "AP1000 Identification of Critical Human Actions and Risk Important Tasks" – Documents results of HRA to support closure of COL information item 18.7-1.
5. APP-OCS-J7-001 Rev B "AP1000 Operation and Control Centers System Specification" – Documents results of HSI design process implementation.
6. APP-OCS-J1-009 Rev A "AP1000 Operations and Control Centers System Functional Requirements" – Documents results of HSI design process implementation.
7. APP-OCS-J1-001 Rev B "AP1000 Alarm System Functional Requirements" – Documents results of HSI design process implementation.
8. APP-OCS-J1-010 Rev C "AP1000 Display Functional Requirements" – Documents results of HSI design process implementation.
9. APP-OCS-J1-007 Rev C "Wall Panel Information System Functional Requirements" – Documents results of HSI design process implementation.
10. APP-PMS-J4-001 Rev F "Post Accident Monitoring System Functional Requirements" – Documents results of HSI design process implementation.
11. APP-DDS-J4V-001 Rev C "AP1000 Display Design Specification" – Documents results of HSI design process implementation.
12. APP-DDS-J4V-002 Rev D "AP1000 Specification of Static and Dynamic Symbols" – Documents results of HSI design process implementation.
13. APP-OCS-GJR-002 Rev B, "Concept of Operations" – Documents results of HSI design process implementation.
14. WCAP-14645-NP, Rev 3 "Human Factors Engineering Operating Experience Review Report for the AP1000 Nuclear Power Plant" – Documents results of Operating Experience Review and the impact of Computer Base Procedures on operation. Implementation plan for Operating Experience was already approved under Revision 15. Report was cited in SER because it was used as input to design the Computer Base Procedures.

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15. APP-OCS-J1A-030, Rev A "Function-Based Task Analysis Summary Report" – Documents task analysis results and provides recommendations for indications, alarms, and key links for ten functional displays.
16. APP-OCS-J1R-120 Rev 0 "AP1000 Operational Sequence Analysis (Summary Report) – Documents task analysis to support closure of COL Action Item 18.5-1.
17. APP-OCS-T2R-020 Rev 0 "AP1000 Engineering Tests Phase 1 Test Report"
APP-OCS-T2R-022 Rev 0 "AP1000 Engineering Tests Phase 2 Test Report"

Question: Email from the NRC Dated January 6, 2009

The following Westinghouse documents were reviewed and used to conclude that NUREG-0711 guidance was being implemented. These documents are viewed by the staff as the "implementation plans" described by the NUREG. These documents need to be docketed because they directly support the staff's assessment of safety.

Document	Tech reviewer	NUREG Criteria
APP-OCS-GBH-001 Rev 0 "AP1000 Human Factors Engineering Program Plan"	Pieringer	Provides program description (NUREG section 2) and roadmap. For example, it references training and procedure documents containing task analysis results.
APP-OCS-GGR-110-P "AP1000 Technical Support Center and Emergency Operations Facility Workshop," Rev 1 of Feb 2008)	Pieringer	Documents how function analysis was completed for EOF/TSC. Used to verify objectives of NUREG 0711 section 4 were met.
PP-OCS-J1-002 Rev 0 "AP1000 HSI Design Guidelines"	Pieringer	NUREG 0711: 8.4.5(1)
APP-OCS-J1R-210 "OSA-2 Implementation Plan"	Keefe	NUREG 0711: 5.4 (2)
WCAP-14651 Rev 2 "Integration of Human Reliability Analysis with Human Factors Engineering Design Implementation Plan" Note: This may have been docketed but we could not find it in ADAMS.	Walker	NUREG 0711: 9.4(7)

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Document	Tech reviewer	NUREG Criteria
WCAP-14690 "Designer's Input to Procedure Development for the AP600" Note: This may have been docketed but we could not find it in ADAMS.	Walker	NUREG 0711: 9.4(1 & 2)
APP-OCS-J1-020 Rev 0 "Computerized Procedures System Functional Requirements"	Walker	NUREG 0711: 9.4(7 & 9); ISG-05: Computer Based Procedures
APP-OCS-GEH-120 Rev A "AP1000 Human Factors Engineering Design Verification Plan"	Pieringer	NUREG 0711: 11.4.2.3.2
APP-OCS-GEH-220 Rev A "AP1000 Human Factors Engineering Task Support Verification Plan"	Pieringer	NUREG 0711: 11.4.2.2.2
APP-OCS-GEH-320 Rev A "AP1000 Human Factors Engineering Integrated System Validation Plan"	Pieringer	NUREG 0711: 11.4.3.2 (entire section)
APP-OCS-GEH-420 Rev A "AP1000 Human Factors Engineering Discrepancy Resolution Process"	Pieringer	NUREG 0711: 11.4.4.2 (1)-(6)
APP-OCS-J1R-100 Rev 0 "Function-Based Task Analysis Methodology and Implementation for AP1000"	Keefe	Does not require docketing. Document was used for verification purposes only.
APP-OCS-J1R-110 Rev 0 "Operational Sequence Analysis Methodology"	Keefe	Does not require docketing. Document was used for verification purposes only
APP-GW-GJP-100, Rev G, "Normal Operating Procedure (NOP)"	Walker	NUREG 0711: 9.4(3 & 4)
Writer's Guidelines APP-GW-GJP-200, Rev D, "AP1000 Writer's Guideline for Two-Column Procedures"	Walker	NUREG 0711: 9.4(3 & 4)
Westinghouse Owner's Group Writer's Guide for Emergency Response Guidelines, HP/LP, Rev 2	Walker	NUREG 0711: 9.4(2 & 5)

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Westinghouse Response:

Westinghouse acknowledges the NRC's request for docketing the above mentioned documents related to implementation of NUREG-0711. The requested documents are in various forms of revision and will be submitted under separate cover according to the following schedule:

- Nine of the documents will be submitted by 5/15/2009.
- One document will be submitted by 5/31/2009
- One document will be submitted by 6/30/2009
- Two documents will be submitted by 4/30/2009
- One of the requested documents (Westinghouse Owner's Group Writer's Guide for Emergency Response Guidelines) will not be submitted for docketing because it has been superseded by WCAP-14690 (Item 6 of the following list)
- Two documents do not require docketing per NRC email dated January 6, 2009 and will not be submitted

Documents for Docketing

Note: For the below documents marked "Proprietary" only a proprietary version the document will be submitted.

1. APP-OCS-GBH-001 Rev 0 "AP1000 Human Factors Engineering Program Plan" – **Proprietary**
 - Will be submitted for docketing by 5/15/2009
2. APP-OCS-GGR-110-P "AP1000 Technical Support Center and Emergency Operations Facility Workshop," Rev 1 of Feb 2008" - **Proprietary**
 - Will be submitted for docketing by 5/15/2009
3. APP-OCS-J1-002 Rev 0 "AP1000 HSI Design Guidelines" - **Proprietary**
 - Will be submitted for docketing by 6/30/2009
4. APP-OCS-J1R-210 "OSA-2 Implementation Plan" - **Proprietary**
 - Will be submitted for docketing by 5/15/2009
5. WCAP-14651 Rev 2 "Integration of Human Reliability Analysis with Human Factors Engineering Design Implementation Plan" – **Non Proprietary**
 - Will be submitted for docketing by 5/15/2009
6. WCAP-14690 Rev 1 "Designer's Input to Procedure Development for the AP600" – **Non-Proprietary**
 - Will be submitted for docketing by 5/15/2009
7. APP-OCS-J1-020 Rev 0 "Computerized Procedures System Functional Requirements" - **Proprietary**
 - Will be submitted for docketing by 5/15/2009

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8. APP-OCS-GEH-120 Rev A "AP1000 Human Factors Engineering Design Verification Plan" - **Proprietary**
 - Will be submitted for docketing by 5/15/2009
9. APP-OCS-GEH-220 Rev A "AP1000 Human Factors Engineering Task Support Verification Plan" - **Proprietary**
 - Will be submitted for docketing by 5/15/2009
10. APP-OCS-GEH-320 Rev A "AP1000 Human Factors Engineering Integrated System Validation Plan" - **Proprietary**
 - Will be submitted for docketing by 5/31/2009
11. APP-OCS-GEH-420 Rev A "AP1000 Human Factors Engineering Discrepancy Resolution Process" - **Proprietary**
 - Will be submitted for docketing by 5/15/2009
12. APP-OCS-J1R-100 Rev 0 "Function-Based Task Analysis Methodology and Implementation for AP1000"
 - **Does not require docketing per NRC email dated January 6, 2009**
13. APP-OCS-J1R-110 Rev 0 "Operational Sequence Analysis Methodology"
 - **Does not require docketing per NRC email dated January 6, 2009**
14. APP-GW-GJP-100, Rev H, "Normal Operating Procedure (NOP)" – **Non-Proprietary**
 - Will be submitted for docketing by 4/30/2009
15. Writer's Guidelines APP-GW-GJP-200, Rev E, "AP1000 Writer's Guideline for Two-Column Procedures" – **Non-Proprietary**
 - Will be submitted for docketing by 4/30/2009
16. Westinghouse Owner's Group Writer's Guide for Emergency Response Guidelines, HP/LP, Rev 2
 - **Note: This document will not be submitted for docketing. It has been superseded by WCAP-14690 (Item #6 of this list).**

References:

None

Design Control Document (DCD) Revision:

None

PRA Revision:

None

Technical Report (TR) Revision:

None