



Westinghouse
Electric Corporation

Energy Systems

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NSD-NRC-97-5047
DCP/NRC0799
Docket No.: STN-52-003

April 1, 1997

Document Control Desk
U. S. Nuclear Regulatory Commission
Washington, DC 20555

ATTENTION: T. R. QUAY

SUBJECT: AP600 DESIGN CERTIFICATION: FORMAL NOTIFICATION OF RESOLUTION
OF ITEMS ASSOCIATED WITH CHAPTER 7.0

References: SECY-97-051, "Schedule for the Staff's Review of the AP600 Design Certification
Application," dated February 26, 1997, forwarded by NRC letter "Westinghouse's
Support of the Nuclear Regulatory Commission Review of the AP600 Design
Certification Review," dated March 6, 1997.

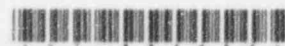
Dear Mr. Quay:

This letter is to formally consolidate responses and resolutions of items associated with SSAR Chapter 7 and to confirm completion of submittal of final documentation related to SSAR Chapter 7 for our application for AP600 Design Certification. The Reference includes a milestone "Applicant Submits Final SSAR Revision & Documentation" by May 1997. Westinghouse interprets this to require NRC acknowledgement of receipt of final documentation supporting our application for AP600 Design Certification. To support this milestone, NRC and Westinghouse maintain a detailed activity plan which provides schedule goals for most SSAR/FSER sections and related activities, such as, the PRA, code validation, and ITAACs. In this detail activity plan, Westinghouse application input and NRC internal FSER input for Chapter 7 of the SSAR had a schedule goal of December 31, 1996. NRC and Westinghouse also maintain a joint open item tracking system to informally monitor the status and history of open items (DSER, RAI, meeting, and other) associated with our application.

NRC has requested that, although most items have been discussed and resolved using SSAR and RAI markups followed by formal revisions, Westinghouse consolidate their remaining resolutions into a single, formal response. Attachment 1 to this letter provides a chronology for each item discussed. Westinghouse believes it has submitted resolution for all items for SSAR Chapter 7. Attachment 2 provides formalized copies resubmitting the resolving documentation for items not acknowledged by NRC. Note that some responses were provided some months ago. NRC is requested to acknowledge receipt of this information by directing Westinghouse to change the "NRC Status" to "Action N" or "Resolved".

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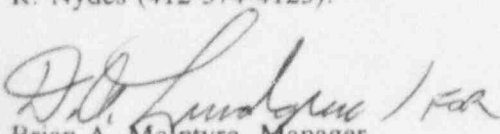


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April 1, 1997

Based upon a review of the information provided for Chapter 7 of the SSAR and a review of the related open item entries in our informal tracking system, Westinghouse confirms its completion of the submittal of information to support this portion of our application. Any additional questions or requests for additional information on Chapter 7 of the SSAR which require formal response must be received by Westinghouse by May 9, 1997 in order to support the May 1997 milestone in SECY-97-051.

If you have any comments or questions on this letter please contact J. W. Winters (412-374-5290) or R. Nydes (412-374-4125).


Brian A. McIntyre, Manager
Advanced Plant Safety and Licensing

jml

Attachment 1: Chronology for Chapter 7 Open Items
Attachment 2: Chapter 7 Open Resolving Documentation

cc: D. Jackson, NRC
N. J. Liparulo, Westinghouse (w/o Attachments)
T. Kenyon, NRC (w/o Attachments)

Attachment 1 to NSD-NRC-97-5047

Chronology for Open Items Associated with Chapter 7

Open Item Number	NRC Status	Response Vehicle	Response Date	Appendix 2 Page
1044	Action W	Fax - J. Winters to T. Kenyon	3/21/97	1- 4

Attachment 2 to NSD-NRC-97-5047

**Resolving Documentation for Open Items
Associated With Chapter 7**

AP600 Open Item Tracking System Database: Executive Summary

Date: 3/27/97

Selection: [nrc st code]='Action W' And [DSER Section] like '7*' Sorted by Item #

Item No.	Branch	DSER Section/ Question	Type	Title/Description Detail Status	Resp Engineer	(W) Status	NRC Status	Letter No. /	Date
1044	NRR/HICB	7.2.8-2	DSER-OI		ITAAC/Deutsch, K.	Confirm-W	Action W	NTD-NRC-95-4464	
<p>Westinghouse should provide information concerning environmental qualification of PMS components addressing local temperature rises above the room ambient experienced by the components during operation.</p> <p>It is desirable to have additional margin built into the design. The components should, therefore, be qualified by testing to higher temperatures than specified in the SSAR for a given room environment. Westinghouse should address this concern in the SSAR. Westinghouse should also provide mild environment equipment qualification in the CDM with the corresponding ITAAC.</p> <p>Closed - Technical information agreed to by NRC during meeting on May 15-16. Additional technical information regarding the equipment design margin to loss of HVAC has been incorporated into Revision 3 of the SSAR, Subsection 7.1.4.1.8. rkn 12/2</p> <p>Westinghouse needs to decide approach to close this item. rkn 12/6</p> <p>Action N - NRC still has the action to evaluate the Westinghouse proposal on procedural fix of instrument overheating after 24 hour period. (6/21 meeting with W/SPLB/HICB). Based on 11/21 W/NRC telecon, this approach is reasonable; see qualification program in SSAR Section 3.11.</p> <p>Action W - NRC requested W provide proposed COL item for qualification margin and instrument setpoint data or document in the CDM and corresponding ITAAC (W is considering options, did not commit to either approach). rkn 12/2</p> <p>Westinghouse does not consider there to be an applicable COL action to identify. Technical information related to design margin against a loss of HVAC was provided in SSAR 7.1.4.1.6 and is considered technically resolved, as was previously agreed to by NRC. This item is considered closed since there is no Westinghouse action required at this time to address this item (since the NRC relates this comment to the PMS ITAAC, the responsible engineer is changed to ITAAC). rkn 1/14/97.</p> <p>Action W - (from NRC on 1/28/97) Submit revised CMD & ITAAC to include COL action to include additional design margin to accommodate a loss of the normal HVAC. Provide an alarm if internal cabinet temperatures reach an excessive value. jww 1/28</p> <p>This was previously closed and is still considered closed, meaning there is no Westinghouse action identified or required to close this item; all necessary submittals have been made. For background, SSAR Section 7.1.4.1.6 was revised in Feb 1996 to address this. Specifically, there is a sentence which reads, "The cabinets containing the digital equipment are provided with temperature sensors which provide an alarm if internal cabinet temperatures reach an excessive value." This is closed. rkn 1/30/97.</p> <p>Per telecon with Hulbert Li today, the action is for Westinghouse to include this alarm in the ITAAC. rkn 2/18/97. Rather than include the alarm specifically, the EQ info for PMS temperatures is included in the draft ITAAC (pages of which were faxed today). W believes this addresses NRC concern. rkn 3/21</p> <p>Confirm N - Fax to Kenyon with ITAAC markup wnet on 3/21/97. jww</p>									

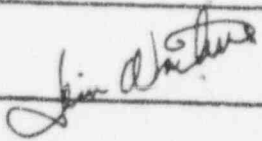


RECIPIENT INFORMATION		SENDER INFORMATION	
DATE:	MARCH 21, 1997	NAME:	JIM WINTERS
TO:	TOM KENYON	LOCATION:	ENERGY CENTER - EAST
PHONE:	FACSIMILE:	PHONE:	Office: 412-374-5290
COMPANY:	U S NRC	Facsimile:	win: 284-4887 outside: (412)374-4887
LOCATION:			

Cover + Pages 1 + 2

The following pages are being sent from the Westinghouse Energy Center, East Tower, Monroeville, PA. If any problems occur during this transmission, please call:

WIN: 284-5125 (Janice) or Outside: (412)374-5125.

COMMENTS:
Tom
THE ATTACHED MARKUP OF THE PMS ITAR SECTION SHOULD RESOLVE
OPEN ITEM 1044 AGAINST CHAPTER 7. WE ARE CHANGING "W STATUS"
TO "CONFIRM W". PLEASE CALL AND TELL US WE CAN CHANGE "NRC
STATUS" TO "ACTION N" OR "CONFIRM W"
cc: SCHREIBER CUMMINS MCINTYRE NYDES DEUTSCH WINTERS




2.5.2 Protection and Safety Monitoring System

Design Description

The protection and safety monitoring system (PMS) initiates reactor trip and actuation of engineered safety features in response to plant conditions monitored by process instrumentation and provides safety-related displays. *The functional arrangement of the PMS is depicted in Figure 2.5.2-1.*

1. The PMS has the equipment identified in Table 2.5.2-1.

2. The seismic Category I equipment, identified in Table 2.5.2-1, can withstand seismic design basis dynamic loads without loss of safety function.

[Revise item 3 and add new item 4 as shown on change attachment]

3. The Class 1E equipment, identified in Table 2.5.2-1, can withstand the electromagnetic interference (EMI) and radio frequency interference (RFI) conditions that would exist before, during, and following a design basis accident without loss of safety function for the time required to perform the safety function.

5. ~~4~~ a) The Class 1E equipment, identified in Table 2.5.2-1, is powered from their respective Class 1E division.

b) Separation is provided between PMS Class 1E divisions, and between Class 1E divisions and non-Class 1E cable.

6. ~~5~~ The PMS provides the following safety-related functions:

a) The PMS initiates an automatic reactor trip, as identified in Table 2.5.2-2, when plant process signals reach specified limits.

b) The PMS initiates automatic actuation of engineered safety features, as identified in Table 2.5.2-3, when plant process signals reach specified limits.

c) The PMS provides manual initiation of reactor trip and selected engineered safety features as identified in Table 2.5.2-4.

7. ~~6~~ The PMS provides the following nonsafety-related functions:

a) The PMS provides process signals to the plant control system (PLS) through isolation devices.

b) The PMS provides process signals to the data display and processing system (DDS) through isolation devices.



PROTECTION AND SAFETY MONITORING SYSTEM
SECTION 2.5.2

Design Description

REVISE ITEM NUMBER 3 TO BE AS FOLLOWS:

3. The Class 1E equipment, identified in Table 2.5.2-1, has electrical surge withstand capability (SWC), and can withstand the electromagnetic interference (EMI), radio frequency interference (RFI), and electrostatic discharge (ESD) conditions that would exist before, during, and following a design basis accident without loss of safety function for the time required to perform the safety function.

ADD THE FOLLOWING NEW ITEM NUMBER 4:

4. The Class 1E equipment, identified in Table 2.5.2-1, can withstand the room ambient temperature, humidity, and mechanical vibration conditions that would exist before, during, and following a design basis accident without loss of safety function for the time required to perform the safety function.

REVISE ITEM NUMBER 9b (formally item 8b) TO BE AS FOLLOWS:

9. b) The PMS two-out-of-four initiation logic reverts to two-out-of-three coincidence logic if one of the four channels is bypassed. The PMS automatically produces a reactor trip or engineered safety feature initiation upon an attempt to bypass more than two channels of a function that uses two-out-of-four initiation logic.

REVISE AND EXPAND ITEM NUMBER 11 (formally item 10) AS FOLLOWS:

11. The PMS hardware and software is developed using a planned design process which provides for specific design documentation and reviews during the following life cycle stages:
- a) Design requirement phase
 - b) Definition phase
 - c) Development phase
 - d) Test phase
 - e) Installation phase
 - f) Operation and maintenance phase.
12. The PMS software is designed, tested, installed, and maintained using a process which incorporates a graded approach according to the software's relative importance to safety and specifies requirements for:
- a) Software management including documentation requirements, standards, review requirements, and procedures for problem reporting and corrective action
 - b) Software configuration management including historical records of software and control of software changes
 - c) Verification and validation including requirements for reviewer independence.