Docket file
52-003

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

July 31, 1997

APPLICANT: Westinghouse Electric Corporation

FACILITY: AP600

SUBJECT: SUMMARY OF JULY 8, 1997, MANAGEMENT MEETING WITH WESTINGHOUSE TO DISCUSS DESIGN CERTIFICATION ISSUES FOR THE AP600

The subject meeting was held on July 8, 1997, in the Rockville, Maryland, office of the Nuclear Regulatory Commission (NRC) between representatives of Westinghouse and the NRC staff. Attachment 1 is a list of meeting attendees. Attachments 2 and 3 are the handouts provided by the staff and Westinghouse respectively during the meeting.

The purpose of the meeting was to discuss the status of the AP600 review and to develop the agenda for the upcoming July 9, 1997, senior management meeting (SMM). Westinghouse presented dates for their remaining known submittals (Attachment 3) and indicated that their last submittal was scheduled for mid-August. However, because the SRM from the Commission on the need for the AP600 to have a containment spray had just been released, Westinghouse did not have a definitive date for submitting their containment spray design to the staff. Westinghouse agreed to provide a date to the staff as soon as possible. The staff then presented a chapter by chapter status of the review (Attachment 2) and a status of the top 27 technical issues. The staff stated that the safety evaluation report dates were estimates and that the staff was in the process of developing a detailed schedule for the completion of the review. During these discussions, several action items were identified for the staff and for Westinghouse to pursue.

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Highlights of the discussion and the action items resulting from the discussion are as follows:

The staff indicated that they were developing a position for the acceptability of using non-safety-related coatings inside containment, and a response to Westinghouse's proposal concerning the level instruments used for the core makeup tank (CMT). In addition, the staff indicated that several other letters would be forwarded to Westinghouse in the near future on their quality assurance program, the need to use the ARCON code to calculate chi/Q, and the code classification of the high pressure portions of the chemical and volume control system. The staff agreed that a schedule would be developed with Westinghouse for the completion of the review. The review of WGOTHIC was identified as one of the critical path items and it was decided that specific milestones for this review needed to be developed with Westinghouse. The staff also agreed to keep Westinghouse informed of the status of the review for the level 2 probabilistic risk assessment (PRA) and the shutdown PRA.

Westinghouse agreed to provide the staff with a schedule for submitting a comparison between the AP600 design and the Electric Power Research Institute utility requirements document. In addition, Westinghouse agreed to look at the criteria for specifying instrumentation requirements rather than actual instruments in response to the staff's concerns about the CMT level instrument. Westinghouse also agreed to work with the staff on scheduling a meeting on the main control room habitability design.

The staff was concerned that, in some areas, Westinghouse was not responsive to positions that were sent to them by the staff. Westinghouse agreed to place increased attention on their responses such positions.

At the end of the meeting, the staff and Westinghouse agreed that a synopsis of the status of the NRC review, a synopsis of the status of the top 27 technical issues, and fire protection would be the topics of discussion at the July 9, 1997, SMM. A draft of this meeting summary was provided to Westinghouse to allow them the opportunity to comment on the summary prior to issuance.

Original signed by
Dino C. Scaletti FOR

Joseph M. Sebrosky, Project Manager
Standardization Project Directorate
Division of Reactor Program Management
Office of Nuclear Reactor Regulation

Docket No. 52-003

Attachments: As stated

cc w/atts: See next page

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WESTINGHOUSE AP600 MANAGEMENT
MEETING ATTENDEES
JULY 8, 1997

NAME	ORGANIZATION
BOB VIJUK	WESTINGHOUSE
BRIAN MCINTYRE	WESTINGHOUSE
BART COWAN	ECKERT SEAMANS (WESTINGHOUSE)
CHARLES THOMPSON	DOE
ED RODWELL	EPRI
BOB MAIERS	PENNSYLVANIA-BUREAU OF RADIATION PROTECTION
MARYLEE SLOSSON*	NRR/DRPM
SEYMOUR H. WEISS	NRR/DRPM
TED QUAY	NRR/DRPM/PDST
TOM KENYON	NRR/DRPM/PDST
BILL HUFFMAN	NRR/DRPM/PDST
DIANE JACKSON	NRR/DRPM/PDST
JOE SEBROSKY	NRR/DRPM/PDST

*PART TIME

Attachment 1

NRC HANDOUTS PROVIDED DURING JULY 8, 1997, MANAGEMENT MEETING

Attachment 2

AP600 MANAGEMENT MEETING
July 8, 1997

I.	Introduction	NRC/W
II.	Status of Westinghouse submittals	W
III.	Status of NRC review	NRC
IV.	Status of Top 27 Technical Issues	NRC/W
V.	Selection of items to be discussed with Senior Managers	NRC/W

Chapter 1

- Major Issues:
  - Compliance with the EPRI URD
  - Exemptions
  - Interface Requirements
- Draft SER to be completed in September.

Chapter 2

- **Unresolved Issues:**
  - **Site parameter definition of shallow soil sites**
  - **Geotechnical/geological evaluation and investigation**
- **Westinghouse is to submit revised responses to RAIs based on telephone conference call in June.**
- **Most draft SERs completed but with open items. SERs expected to be completed in August.**

Chapter 3

- **Major Unresolved Issues:**
  - **Shallow soil sites**
  - **Basemat (construction sequence)**

- **Final audit(s) needed - Expected in July - August**

- **Most draft SERs completed; several with open items; others in progress. All draft SERs expected to be completed in August.**

Chapter 4

- **No open items.**
- **Draft SER sections completed.**

Chapter 5

- Open item on the use of Code Case N-284, Revision 1. Westinghouse has addressed issue in SSAR Revision 14. The staff is reviewing the Westinghouse SSAR change.

- Most remaining issues involve RTNSS and the shutdown evaluation report items.

- Open issue to be resolved regarding the mix of Leak Detection instrumentation for the AP600.

- Some draft SERs to projects with open items. All draft SERs expected in August.

Chapter 6

- Unresolved issues:
  - Proposed resolution to containment spray design.
  - Open item on the classification of containment coatings. Staff is still reviewing this issue.
  - Open issues regarding the main control room habitability system. Major issue on the design air flow rate, C02 levels, temperature and humidity levels are still under staff and Westinghouse discussions.
  - Items which involve the acceptability of WGOTHIC may have major holes in SER.
- Some draft SERs to projects with open items. All draft SERs expected in September.

Chapter 7

- **Unresolved issues:**
  - **ITAAC-related issues which are under discussion**
  - **I&C logic & recent changes in SSAR identified to Westinghouse end of June 1997**
- **Draft SER input received in January 1997 with open items. Revised SERs expected in August/September.**

Chapter 8

- **Draft SER input has been submitted to projects with some open items. Open items subsequently resolved. Staff will update draft SER input in August.**

Chapter 9

- Major Unresolved Issue:
  - Fire Protection does not meet post-fire shutdown state and shutdown capability.
- HVAC RAI responses received July 3 and are under review. SSAR update expected in revision 15.
- SERs completion based on Westinghouse SSAR revision. Draft SERs expected approximately in September - October.

Chapter 10

- Westinghouse to submit turbine overspeed trip design change to include both a mechanical trip and electrical trip. Changes expected in draft in late-July and in final form in Revision 15 of SSAR.

- SERs completion based on Westinghouse SSAR revision. Draft SERs expected in Septen ber - October.

Chapter 11

- Unresolved Issues:
  - Acceptability of 0.25% fuel failure for solid radioactive waste system
  - Acceptability of storage capacity for solid radioactive waste
- SSAR markups received July 3 and are under review. SSAR update expected in Revision 15.
- SERs completion based on Westinghouse SSAR revision and responses. Draft SER expected in August.

Chapter 12

- **Major Remaining Issue: Location of radiation monitors in fuel handling area. Staff reviewing submittal.**

- **SER [illegible]ted approximately in July.**

Chapter 13

- Remaining Issues: Equivalency to 10 CFR 73.55
- Meeting/telecon to be held in mid-July to discuss Westinghouse's proposed resolutions to issues.
- Draft SER expected approximately in September.

Chapter 14 (Initial Test Program)

- Major Unresolved Issues:
  - Status of issues given to Westinghouse in a 6/25/97 letter
  - While continued dialogue should be able to resolve most of these issues, there are some issues (e.g., first plant only testing) that may require senior management involvement.
- SER to projects estimated to be the end of September

Chapter 14 (Certified Design Material)

- **Major Unresolved Issues:**
  - **Westinghouse has recently submitted the majority of the material needed by the staff to perform a review including: an extensive revision to the certified design material, responses to RAIs, and a revision to the SSAR to support the changes to the CDM.**
  - **The staff is in the process of developing a review schedule. There maybe some conflicts with some groups between writing the SERs for their respective areas and reviewing the CDM at the same time.**
- **SER schedule has not been determined due to unresolved issues**

Chapter 15

- Major Unresolved Issue:
  - Gap in break spectrum coverage for AP600 (i.e., breaks between 0.55 ft^2 and 1 ft^2)
  - Awaiting RAI responses on aerosol removal in containment and EQ in containment
  - Dispersion methodology and code
- Staff review in progress. RAIs are being issued as necessary. SER input expected in September.

Chapter 16

16.1 Tech Specs

- A number of issues are still being discussed between various technical branches and Westinghouse on tech specs.

- SER input to projects within one month of technical staff issue resolution. PDST is conservative estimating that tech spec technical issues will be resolved by September and the SER input to projects expected in October.

16.2 D-RAP

- Revision 14 of the SSAR contains significant revisions to D-RAP to address staff issues. SER input to projects estimated in August assuming all comments acceptably resolved in recent revision.

Chapter 17

- **Draft SER to projects 30 days after final QA inspection. Final QA inspection tentatively expected to occur sometime in early September. Current QA concerns and status of the WGOTHIC review could impact this date.**

- **Draft SER input provided to projects. Open issue on including computerized procedures as part of AP600 design certification.**

Chapter 19

- SER input for the majority of the level 1 PRA scheduled for end of July. SER input for level 2/3 PRA scheduled for August/September time frame

- Major Unresolved Issues:

  - For level 1 PRA the any unresolved issues will be identified in the SER. SER may also contain additional level 1 insights.

  - Potential resource impact for completing the shutdown portion of the PRA by the end of July

  - The staff is disappointed in the submittal from Westinghouse concerning level 2 risk insights

  - For severe accidents, the staff is reviewing submittals and RAI responses concerning in-vessel retention, in-vessel steam explosions, and ex-vessel phenomena (see top 27 for details).

  - Resolution of SMA issues and final audit is needed.

Chapter 20

- Major Unresolved Issue:
  - Westinghouse must update WCAP-13559 "Operational Assessment for AP600" to address open items as well as to incorporate bulletin and generic letters issued since the last revision. As stated in DSER open item 20.7-1 the "...inclusion of new bulletins and generic letters should continue until the draft SER for the AP600 design is issued."
- Some draft SERs received with open items. Westinghouse has been informed of the open items.
  - Schedule for the completion of the review in other areas is on a staggered basis with a target date of completion the September/October time frame.

Chapter 21

- Westinghouse to submit final WGOTHIC report and RAI responses by July 18. At present, the acceptability of WGOTHIC computer code's ability to predict containment performance is questionable.

- PXS testing and scaling issues mostly resolved. Staff is still waiting for final PIRT/Scaling report to close-out remaining issues. In addition, staff is also expecting PRHR ROSA data analyses from Westinghouse shortly.

- LOFTRAN draft SER to projects with several opens items which have been communicated to Westinghouse. Only significant item is verification of the PRHR heat transfer correlation against ROSA data.

- NOTRUMP draft SER scheduled to projects in August.
- WCOBRA/TRAC LBLOCA draft SER in September.
- WCOBRA/TRAC LTC draft SER in July.
- WGOTHIC draft SER expected in November.

Miscellaneous SER Inputs

- **ERGS SER input expected in August.**
- **Shutdown evaluation report SER input expected in September.**
- **RTNSS SER input expected in September.**

Staff and Westinghouse Action Required

1. Content of the SSAR - Level of Detail and Adequacy of Figures

- Westinghouse provided a written response and updated SSAR in Revisions 13 and 14.
- Westinghouse to submit additional revision based on telephone conference call in June in Revision .5.
- Staff is reviewing current changes and draft markup revisions for Revision 15.

5. Soil/Structure/Seismic Interactions

- Westinghouse revising RAI responses as discussed in a telephone conference call in June.
- Westinghouse completed its re-analysis for seismic due to post 72-hour actions. Audit of calculations expected in July or August.

Staff and Westinghouse Action Required

7. DBA Radiological Consequences

- The staff is awaiting RAI responses on aerosol removal in containment (10/96) and EQ in containment (8/96).
- Westinghouse submitted information on 4/17/97 on Westinghouse input assumptions for calculation of aerosol removal coefficients in containment.
- The staff informed Westinghouse that use of NUREG/CR-5055 dispersion methodology was unacceptable and recommended that Westinghouse use the newly-developed ARCON96 code during a June 1997 meeting. Westinghouse is evaluating its options.

Staff and Westinghouse Action Required

11. Systems Reliability of Hydrogen Mitigation Systems

- A meeting between Westinghouse and the staff was held on 5/20/97 to review remaining open items on use of PARs for AP600 DBA hydrogen control. Westinghouse has the following remaining areas to address for the use of PARs:

  - Demonstrating a well mixed environment
  - Concerns about mixing above 135 foot elevation
  - Concerns about mixing below 135 foot elevation
  - Environmental Qualifications
  - Technical Specifications
  - Battelle Testing
  - Compliance with regulations
  - Debris clogging of PARs
  - Location of PARs relative to pipe breaks

- Westinghouse is preparing a major revision to SSAR section 6.2.4 to address the issues above. Westinghouse stated that a markup of the revision should be sent to the staff by week of 7/7/97.

Staff and Westinghouse Action Required

11. Systems Reliability of Hydrogen Mitigation Systems - cont.

- A position letter on technical specifications controls for hydrogen igniters was issued on 4/3/97 which Westinghouse responded to in a 6/24/97 letter. Westinghouse does not believe hydrogen igniters meet the inclusion criteria for technical specifications, however, Westinghouse did propose short term availability controls. These controls are similar to what the staff believes Westinghouse will propose for RTNSS controls. The staff is currently evaluating Westinghouse's position.

16. Initial Test Program

- Westinghouse responded to the majority of the staff's comments on 5/9/97. Staff's response provided in 6/25/97 letter

- Approximately 25 issues remain open. While continued dialogue should be able to resolve most of these issues, there are some issues (e.g., first plant only testing) that may require senior management involvement.

Staff and Westinghouse Action Required

17. Code Documentation and Qualification (V&V of Codes)

NOTRUMP

- Westinghouse submitted remaining outstanding RAI responses on the NOTRUMP Final Validation Report on 6/17/97.
- Staff received final revision of NOTRUMP validation report on 7/7/97.
- Staff should have draft SER completed in August.

LOFTRAN

- Most open items for LOFTRAN are resolved.
- On 5/9/97, the staff provided Westinghouse with PRHR heat transfer data from several ROSA tests for use in making (blind) predictions of ROSA test data using the LOFTRAN heat transfer correlation. The staff is waiting for the results of the ROSA data analyses to complete its LOFTRAN assessment.
- A draft of the LOFTRAN SER has been completed.

Staff and Westinghouse Action Required

17. Code Documentation and Qualification (V&V of Codes) - cont.

WCOBRA/TRAC - LBLOCA

- Westinghouse has replied to all the staff's RAIs on this application of the code.
- The staff is reviewing the RAI responses.

WCOBRA/TRAC - Long Term Cooling

- Westinghouse has replied to all the staff's RAIs on this application of the code.
- The staff is completing its technical review of the application of WCOBRA/TRAC to AP600 long term cooling analyses.

WGOTHIC

- Schedule impact issue

Staff and Westinghouse Action Required

18. Chapter 15 Accident Analysis

- Westinghouse completed all Chapter 15 documentation with revision 13 of SSAR which was received by the staff on 6/13/97 (except Revision 1 of WCAP-14601 on accident evaluation models which is due by 7/14/97).

- The staff is in the process of reviewing this material.

- The staff has issued some additional RAIs based on its review of the revised Chapter 15 analyses to date.

Staff and Westinghouse Action Required

23. External Cooling of the Reactor Pressure Vessel/Severe Accidents

- The status of the reports associated with the IVR issue follows:

IVR main report: Westinghouse has responded to the majority of the RAIs in this area. The staff review confirms the effectiveness of external reactor vessel cooling for the "final bounding state." The staff continues to have some concerns with the IVR report including:

- "stratified intermediate states" that could pose a greater threat to the reactor pressure vessel (RPV) than the "final bounding state" evaluated in the report

- damage to the structural integrity of the RPV thermal insulation (by hydrodynamic loads) that could degrade ex-vessel heat removal capability

Residual concerns/uncertainties to be addressed by reliance on results of ex-vessel calculations.

Staff and Westinghouse Action Required

23. External Cooling of the Reactor Pressure Vessel/Severe Accidents - cont.

Reports on IVSE: The staff is evaluating Westinghouse's 6/13/97 submittal that provided responses to the staff's concerns, a revision to the reports, and resolution of the peer review comments.

Exvessel Phenomena: Westinghouse is in the process of responding to staff RAIs concerning core concrete interaction. The staff is evaluating Westinghouse's recent submittals and RAI responses concerning ex-vessel steam explosions.

26. Technical Specifications Review

- Position letter on optimized technical specifications issued on 3/27/97.
- Westinghouse letter dated 6/6/97 provided Westinghouse response to staff position letter. The staff has reviewed this response and has additional comments which are being prepared for issuance to Westinghouse.
- Numerous additional technical branch issues are still in the process of being resolved between the staff and Westinghouse.

Staff Action Required

6. Site-Soil Variability (Basemat)

- The staff is reviewing Westinghouse's proposal for construction sequence and geotechnical investigation provided by Westinghouse.

- The resolution of the basemat is linked to the shallow soil site issue.

13. Spent Fuel Pool Cooling System

- Staff review in progress. Final acceptability of the SFP is linked to resolution of dose calculations for control room habitability.

Staff Action Required

20. Integrated Use of PRA Insights

- Westinghouse must use insights from the sensitivity, uncertainty, and importance analyses in an integrated fashion, in conjunction with assumptions from the entire PRA, to identify design certification and operational requirements (such as ITAAC, RAP, TSs, administrative controls, procedures) as well as COL and interface requirements.

Status

- The staff is in the process of writing the draft SER for the majority of the level 1 PRA. Any open items from this SER will be forwarded to Westinghouse for resolution in accordance with current staff practice.

- There is a potential schedule impact concerning the shutdown portion of the PRA, and the draft SER for this portion of the PRA maybe delayed.

- Potential changes to the level 1 insights due to the staff's review will also be forwarded to Westinghouse for resolution.

- Staff is reviewing RAI responses on SMA. Final audit needed.

Staff Action Required

22. Shutdown and Low Power Operations

- Westinghouse submitted a major portion to the shutdown evaluation report on 4/18/97.
- On 6/6/97, Westinghouse submitted the remaining information related to the shutdown evaluation report.
- The staff is preparing RAIs for submittal to Westinghouse.

24. Containment Bypass/SGTR

- Westinghouse submitted a revised SGTR analysis on 3/24/97.
- Staff resolution of this issue is based on satisfactory assessment of the NOTRUMP - MAAP benchmarking report which is still under review.

25. Adverse Systems Interactions

- Westinghouse issued final ASI report to incorporate staff comments on 5/9/97
- Issues related to the focused PRA evaluation (e.g., SGTR and RCP common mode failure) are still under review by the staff.

Westinghouse Action Required

8. Prevention and Mitigation of Severe Accidents

- Westinghouse needs to develop proposal to address June 30, 1997 SRM.

12. Fire Protection Program

- Westinghouse preparing responses and design changes in response to staff position papers on issued in May and June, except for two issues.
- Two major issues: AP600 post-fire endstate and shutdown capability.

14. Overspeed Protection

- Westinghouse informed the staff that they will revise its design with both an electrical trip and mechanical trip. This is expected in mid-July and SSAR Revision 15.

Westinghouse Action Required

15. Proposed AP600 Security Plan

- The revised Security Report was received on 2/28/97.
- The staff identified key concerns with Westinghouse's proposal during a May 13, 1997 meeting.
- A meeting/telecon will be held in mid-July to discuss Westinghouse's proposed resolutions to the issues.

Technically Resolved

4. Leak-Before-Break Design Criteria For FW Piping System

- This issue is resolved.

10. Containment Isolation

- This issue is technically resolved based on Westinghouse letter dated 4/22/97

19. Westinghouse's Proposed LCO 3.0.3

- Westinghouse has agreed to incorporate the standard LCO 3.0.3 wording into the AP600 technical specifications.
- This issue is technically resolved.

27. Quality Classification of Systems

- Pending SSAR (Revision 14) changes, this issue is resolved.

2. Regulatory Treatment of Non-Safety Related Systems (RTNSS)

The RTNSS process, defined in SECY-94-084, involves a two step process which involves, (1) identification of systems subject to RTNSS and, (2) defining the appropriate regulatory oversight for the RTNSS identified systems.

The remaining effort in these areas has a potential for schedular impact and will need continued management attention:

Passive System Thermal-Hydraulic Performance Reliability (Key Issue 21)

The status of this review is discussed in the follow-on slide.

General RTNSS Status

Based on meetings between Westinghouse and NRC on 4/3/97 and 5/6/97, the staff has been informed that Westinghouse is developing administrative availability controls on DAS, the standby diesel-generators, RNS and some additional systems (such as hydrogen igniters and post-72 hour equipment). The staff issued a letter on 6/9/97 providing conditions under which it would find such an approach acceptable.

The staff believes that such an approach could significantly simplify the review in this area and is waiting for Westinghouse's submittal.

21. Passive System Thermal-Hydraulic Performance Reliability

Westinghouse has stated that the AP600 can respond in an acceptable manner to risk-significant PRA accident sequences by using only passive safety systems, and that, as a result, no regulatory oversight of active, non-safety-related systems is required. To support this statement, Westinghouse has used a DBA analysis code (NOTRUMP) to perform sensitivity studies on risk-significant, low margin, accident sequences from the focused PRA. The sensitivity studies use conservative, bounding inputs and assumptions, and demonstrate that there are large margins to core damage. The analyzed sequences have been selected using the PRA thermal-hydraulic computer code (MAAP4) to "screen" sequences from the focused PRA. The margins approach is undertaken in lieu of attempting to quantify thermal-hydraulic uncertainties in the PRA, related to passive system performance.

Status

- The MAAP4 benchmarking report was received April 18, 1997.
- T-H uncertainty report was received by the staff on 6/24/97.
- Staff review in progress. Issues may be contingent on the administrative availability controls Westinghouse is planning to propose to the staff.

9. Post-72 Hour Support Actions

The passive safety systems are designed with sufficient capability to mitigate all design basis events for 72 hours without operator actions and without non-safety-related onsite or offsite power. For long-term safety (post-72 hours), the AP600 design includes safety-related connections for use with transportable equipment and supplies to provide the extended support actions for safety-related functions.

In SECY-96-128, the staff stated that local communities struggling with disaster response should not be given the additional burden of providing for nuclear power safety. The staff recommended the Commission approve the position that the site be capable of sustaining all design basis events with onsite equipment and supplies for the long term. After 7 days, replenishment of consumables such as diesel fuel oil from offsite suppliers can be credited. On 1/15/97, the Commission issued an SRM approving the staff's position.

Status

- Westinghouse has revised the AP600 SSAR to include the Post-72 hour design changes and completed most of the supporting analyses (seismic assessment and control room dose analyses).

- The staff is still reviewing the Post-72 hour design changes and is reviewing recent supporting analyses provided by Westinghouse. The staff has issued several comment letters and continues to assess the Westinghouse responses.

9. Post-72 Hour Support Actions - cont.

Issue

- Westinghouse has indicated that the Post-72 hour equipment will be analyzed to remain functional following safe shutdown earthquake (SSE) loads but does not need to be classified as Seismic Category I per GDC-2. In addition, Westinghouse does not believe that the Post-72 hour equipment needs to be designed to withstand tornado loadings or missiles per GDC-2.

- The staff has developed a position letter on the seismic, tornado wind, and missile analyses criteria for Post-72 hour equipment. This letter (just issued on 7/7/97) states that the Post-72 hour equipment should be analyzed using the same methods as used for Seismic Category II SSCs. The Post-72 hour equipment should also be designed to withstand severe Category 5 hurricanes (wind speeds of greater than 155 mph) including the effects of sustained winds, maximum wind gusts, and associated wind-borne missiles.

- Other Post-72 hour related issues still under review by the staff:

  - Seismic analyses of the Post-72 hour design changes to the PCCS tank.
  - Main Control Room Dose Rate Calculational Methodology.
  - Acceptability of Spent Fuel Pool boiling as the safety related way of heat removal.
  - Acceptability of the Main Control Room Habitability System Human Factors Environment.

3. Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC)

Status

- Westinghouse has recently submitted the following documents:
  - Revision 3 to the Certified Design Material (5/19/97)
  - Response to the majority of the RAIs (6/16/97)
  - Revision 13 to the SSAR which supports changes to the CDM (6/13/97)
  - A table that cross-references important design parameters to their treatment in Tier 1 (6/20/97)
- Major Changes to the Certified Design Material and SSAR
  - Additional systems added to address staff's concern
  - Piping ITAAC added that is significantly different that the evolutionary plants'
  - Radiation Protection approach that is significantly different that the evolutionary plants'

3. Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC) - cont.

- Changes to the SSAR made to support the ITAAC including a revision to SSAR Chapter 14.3 and changes made to individual SSAR chapters to support numbers given in the ITAAC

- An internal meeting with the task group leaders was held on 7/2/97 to discuss the ITAAC. The staff is in the process of developing a review schedule. There maybe some conflicts with some groups between writing the draft SERs for their respective areas and reviewing the ITAAC at the same time.

17. Code Documentation and Qualification (V&V of Codes) - WGOTHIC

FROM LAST SMM

- Final reports need to disposition all of the staff's comments. A milestone of 5/30/97 is useful only if this is adequate time for Westinghouse to prepare high quality submittals.

Status

- The WGOTHIC review is behind schedule, based upon the November 1996 schedule. Submittals are approximately 3-4 months late.

- Westinghouse submitted new information on May 23, 1997. Two-dimensional model used in addition to WGOTHIC is needed to remain below one-half of design pressure after 24 hours.

- Recent reports and RAI responses continue to be of poor quality. Based on reports today (all but one "final"), the staff may not be able to determine if WGOTHIC can adequately predicts containment performance.

- Draft SER expected in November.

Status of Top 27 Issues

Staff and Westinghouse Action Required: 9 Issues

Staff Action Required: 6 Issues

Westinghouse Action Required: 4 Issues

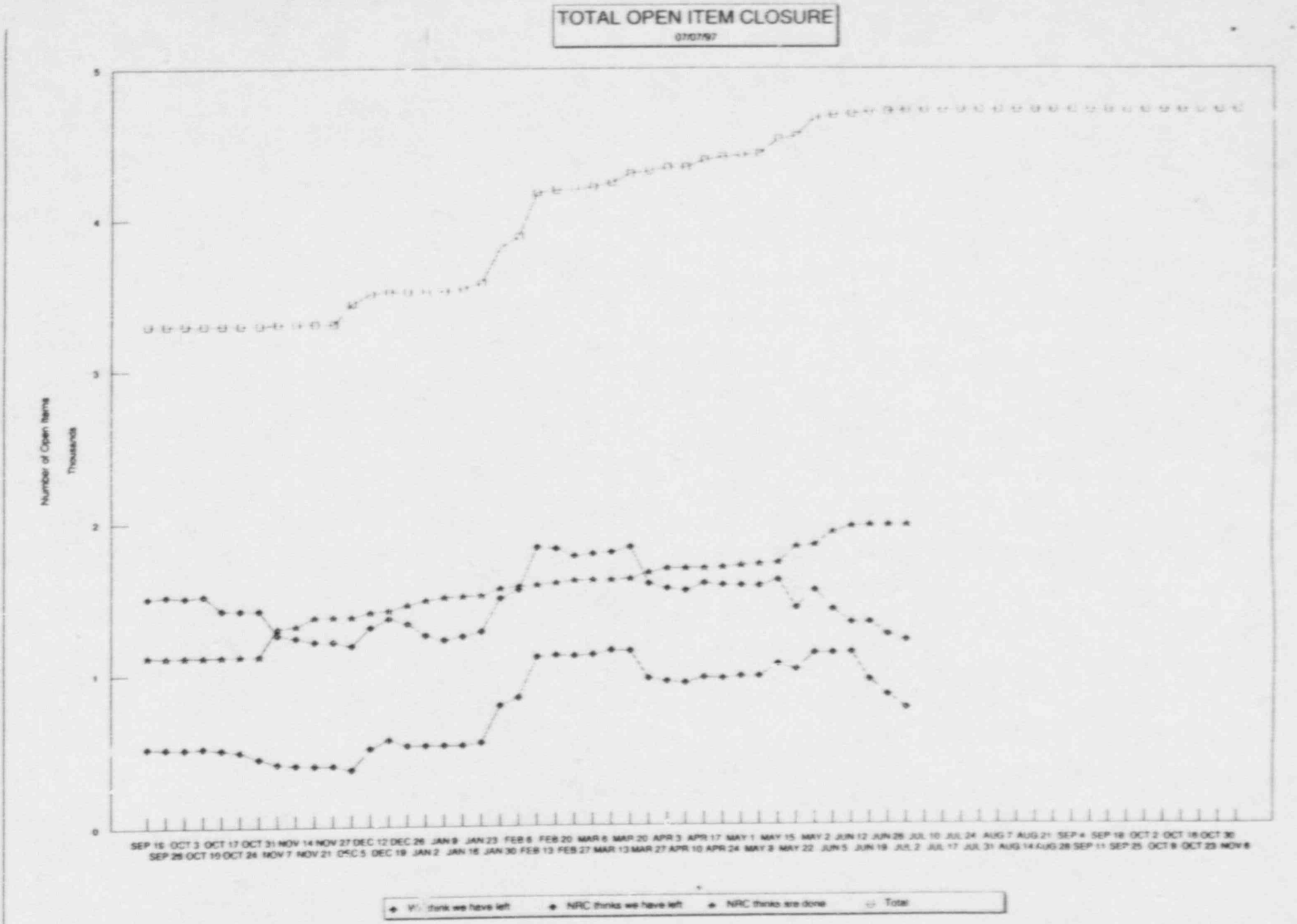
Technically Resolved: 4 Issues

Schedule Impact Issues: 5 Issues

WESTINGHOUSE HANDOUTS PROVIDED DURING JULY 8, 1997, MANAGEMENT MEETING

Attachment 3

ITEM	DATE
SSAR Revision 13	6/13/97
PRA Revision 10	6/27/97
PCS Scaling report RAIs (~75)	6/27/97
NOTRUMP V&V report - Revision 2	7/3/97
Short term availibility controls	7/11/97
PCS Applications report	7/11/97
WCAP-14601 - Analysis Methodology	7/15/97
ECCS PIRT/Scaling report	7/18/97
PRHR validation	7/31/97
SSAR Revision 15	8/8/97
PRA Revision 11	8/8/97


TOTAL OPEN ITEM CLOSURE
07/07/97
Number of Open Items
Thousands
5
4
3
2
1
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SEP 15 OCT 3 OCT 17 OCT 31 NOV 14 NOV 27 DEC 12 DEC 26 JAN 9 JAN 23 FEB 6 FEB 20 MAR 6 MAR 20 APR 3 APR 17 MAY 1 MAY 15 MAY 2 JUN 12 JUN 26 JUL 10 JUL 24 AUG 7 AUG 21 SEP 4 SEP 18 OCT 2 OCT 16 OCT 30
SEP 29 OCT 10 OCT 24 NOV 7 NOV 21 DEC 5 DEC 19 JAN 2 JAN 16 JAN 30 FEB 13 FEB 27 MAR 13 MAR 27 APR 10 APR 24 MAY 8 MAY 22 JUN 5 JUN 19 JUL 2 JUL 17 JUL 31 AUG 14 AUG 28 SEP 11 SEP 25 OCT 9 OCT 23 NOV 6
NRC thinks we have left
NRC thinks are done
Total

AP600 SUBMITTAL TRACKING

DRAFT

WEST SUBMIT	DESCRIPTION	NRC RESPONSE
1/22/93	Proprietary information	8/10/95 9/5/96 (partial) 1/10/97 (partial)
9/23/93	RTNSS resolution (WCAP-13856)	1/16/97 -Partial 5/6/97 Mtg 6/9/97
11/2/94	Specific time delay in physically based source term	2/12/97 Mtg
6/13/95	AP600 Emergency Response Guidelines (Rev 0)	4/9/97
8/9/95	AP600 Emergency Response Guidelines (Rev 1)	None
9/18/95	Proprietary information	9/5/96
9/25/95	AP600 feedwater line LBB load combination	5/2/96
9/28/95	In-vessel retention ROAAM report (DOE/ID ??)	5/22/96
12/8/95	MAAP4 benchmarking plan	1/18/96
1/17/96	Seismic margins HCLPF values and methodology	5/30/96 7/29/96
1/23/96	Position paper on in-vessel retention (DOE/ID 10460)	3/20-21/96 mtg 3/10/97
1/23/96	Key elements of AP600 WGOTHIC PCS DBA approach	None SDSER ?
1/31/96	AP600 water coverage model	None SDSER?
2/12/96	WGOTHIC containment model information	None SDSER ?
2/12/96	Accident specifications and methodology and phenomena	None SDSER ?
2/15/96	Conservatism in modeling PCS film	None SDSER ?
2/26/96	Summary of approach to predicting effects of mixing and stratification in containment	Staff writing applic. report chapter

2/29/96	MAAP4 benchmarking presentation	5/21/96
3/5/96	Adverse Systems Interactions Report (WCAP-14477)	10/3/96 12/20/96 TC 1/29/97 TC 1/30/97 TC 2/6/97 2/19/97 TC 3/13/97
3/14/96	Fan Cooler effectiveness	None
3/21/96	Electrical separation requirements	None
3/26/96	QA requirements for RTNSS SSC's	5/6/96
3/27/96	Fuel grid design	5/[illegible]96 TC
3/29/96	AP600 reactor internals flow induced vibration assessment report	8/20/96
4/1/96	LOCA source term model	2/12/97 Mtg
4/1/96	Additional information on fan coolers	None
4/4/96	Large Break LOCA methodology - Treatment of uncertainties	See CAD
4/4/96	Large Break LOCA PIRT	Yes
4/12/96	Return of proprietary information	9/5/96 (Partial)
4/12/96	MAAP 4 benchmarking plan	5/21/96
4/12/96	Man-in-the-loop test plan (WCAP-14346)	None Exp (Draft OK)
4/12/96	Programmatic description of the MMI V&V process (WCAP-14401)	None Exp (Draft OK)
4/16/96	Initial test program (3 sample test abstracts)	4/18/96 Mtg
5/1/96	Draft Tech Specs	5/21/96 Mtg
5/1/96	SSAR Revision 7	Partial
5/3/96	MAAP4 Benchmarking	5/21/96
5/3/96	Tech Spec approach	6/6/96 12/6/96
5/9/96	Setpoint methodology (WCAP-14605)	None

5/14/96	Operational Experience Report Draft (WCAP-14645)	8/12/96
5/14/96	Functional Requirements Analysis and Function Allocation Draft (WCAP-14644)	8/8/96
5/14/96	HRA/HRE Integration Plan Draft (WCAP-14651)	7/3/96 Partial
5/14/96	Input for training of HFE V&V personnel Draft (WCAP-14655)	Complete
5/21/96	PCS film coverage model - Draft report	None
6/8/96	Pilot ITAAC	6/27 DRPM 7/31 SRXB, HICB 8/8 ECGB, EELB 3/4/97 Same branch 4/13/97 SCSB
6/17/96	I&C hardware and software V&V process (WCAP-13383, Rev 1)	?
6/28/96	PRA revision 7	9/18/96 -Fire
6/28/96	Draft Tier 1 material	?
7/1/96	Assessment of Mixing and Stratification effects on AP600 Containment Response - Draft applications report chapter	?
7/1/96	Scaling Analysis for Containment Pressure During a DBA	?
7/1/96	SSAR Revision 8	Partial
7/8/96	Use of 5% damping values for piping stress	Complete
7/8/96	Security Design report, Revision 2, and vulnerability analysis	12/16/96
7/23/96	Steam Explosion ROAAM report (DOE/ID-10541)	3/25/97
7/29/96	T/H uncertainty resolution process	8/27/96 meeting 4/3/97 meeting
8/5/96	Position paper on aerosol removal (Lambda = .6/.8)	8/5/96 Partial 2/12/97 Mtg
8/8/96	Shutdown/Low-power ERGs and background documents (Rev 2, Partial)	4/9/97 - Partial

8/9/96	SSAR Revision 9	12/9/96 - ITP 12/19/96 - 18.8.2 Partial
8/9/96	Technical Specifications (Part of SSAR Rev. 9)	12/24/96 - Partial
8/22/96	Chapter 18 and NURFG-0711 elements (WCAPs 14695, 14694, 14396, 14690, 14655, and 14401)	Complete
8/26/96	Policy on SSE ground motion	3/3/97 SMM
8/29/96	Chapter 18, NUREG-0711 Element 10 (WCAP-14701)	Complete
8/29/96	Surface areas for aerosol deposition	10/2/96 2/12/97 Mtg
8/30/96	At-power ERG background documents (Rev 1A)	4/97 - Partial
9/5/96	SRP compliance (WCAP-13054)	None
9/10/96	WGOTHIC applications report (WCAP-14407) w/o Chapt 12	9/13/96 phonecall 11/8/96 Chapt 13 1/31/96 1/29/97, Ch 4,7,9 3/4/97
9/12/96	Operational Assessment Report (WCAP-13559, Rev 1)	6/97
10/9/96	HRA/HRE Integration Plan (WCAP-14651)	12/19/96
10/9/96	Functional Requirements Analysis and Function Allocation (WCAP-14644)	Complete
10/11/96	AP600 to Std Tech Specs roadmap	?
10/16/96	Updated fission product transport calculations and fission product source rates	2/12/97 Mtg
10/21/96	Reactor Internals Flow Inducted Vibration Assessment Program (WCAP-14761)	Complete
10/28/96	PRA Fault Trees (WCAP-13275, Rev 2)	None
10/30/96	WCOBRA/TRAC Applicability to LB LOCA (WCAP-14171, Rev 1)	1/31/97 2/26/97

11/6/96	WCOBRA/TRAC LTC Final Validation Report (WCAP-14776)	3/4/97 3/20/97 4/24/96 ACRS com
11/6/96	Hydrogen igniter power supply	4/3/97
11/6/96	Supporting reports for IVR review	None
11/7/96	Certified Design Material (ITAAC)	11/26/96 General
11/7/96	PRHR Test Report (WCAP-12980, Rev 2)	1/3/97
11/24/96	Sample PRA insights	3/3/97 Mtg
11/24/96	Framework for AP600 Severe Accident Management Guidance (WCAP-13914, Rev 1)	None
11/27/97	Diffusion flame report	2/7/97 phonecall 3/10/97
12/6/96	Test Program Roadmap (WCAP-14772)	?
12/9/96	Accident Specification and Phenomena Evaluation for AP600 Passive Containment Cooling System (WCAP-14811) w/o Chapter 12	3/4/97
12/12/96	Exvessel phenomena	3/21/97 phonecall
12/18/96	NOTRUMP V&V (WCAP-14807) w/o Chapt 8	4/3/97
12/20/96	SSAR Revision 10	Partial
1/10/97	Emergency Response Guidelines, Revision 2	4/9/97 (partial)
1/31/97	NOTRUMP Final Validation Report, (WCAP-14807, Revision 1) Chapter 8	4/3/97
1/30/97	Complete activities for NUREG-0711 (WCAPs 14401 and 14396 Revisions)	Complete
1/31/97	Protection of RTNSS systems from floods and missiles	None
2/7/97	AP600 exemptions from regulations	None
2/7/97	Position paper in support of the assumption of complete mixing of aerosols following a loss of coolant accident	2/12/97 Mtg
2/14/97	AP600 exemptions from regulations	None

2/28/97	AP600 Security Design Report, Revision 3	5/13/97 mtg
2/28/97	Scaling analysis for AP600 Containment Pressure during DBA, (WCAP-14845)	4/18/97 mtg 4/24/97 5/7/97
3/4/97	SSAR Revision 11	Partial
3/5/97	Clime Noding Study, (WCAP-14407, Chapter 12)	?
3/24/97	Multiple Steam Generator Tube Rupture Report	None
4/11/97	PRA revision 9	?
4/15/97	Shutdown Evaluation report (WCAP-14837) w/o 4.8.5	None
4/16/97	MAAP4 benchmarking report (WCAP-14869)	None
4/28/97	Final data report for PCS Large Scale Tests, Phase 2 and Phase 3 (WCAPs 14135, 14138)	None
5/6/97	SSAR Revision 12	Partial
5/7/97	Experimental Basis for AP600 containment vessel heat and mass transfer correlations WCAP-14326, Revision 1	Partial 7/1 mtg
5/9/97	Adverse Systems Interactions Report WCAP-14477, Revision 1	None
5/19/97	Certified Design Material, Revision 3	None
6/9/97	Accident Specification & Phenomena Evaluation for AP600 Passive Containemnt Cooling System (WCAP-14812, Revision 1)	None
6/9/97	Shutdown Evaluation Report (WCAP-14837, Revision 1)	None
6/10/97	SPES-2 Facility Description Report (WCAP-14703, Revision 1)	None
6/13/97	SSAR Revision 13	None
6/18/97	AP600 PRA Thermal Hydraulic Uncertainty Report (WCAP-14800)	Informal
6/20/97	SSAR Table 14.3	Noene

6/20/97	WCOBRA/TRAC OSU Long Term Cooling Final Validation Report (WCAP-14776, Revision 2)	None
6/25/97	Emergency Response Guidelines, Revision 3	None
6/24/97	Scaling Analysis for AP600 Containment Pressure During Design Basis Accidents (WCAP-14845, Revision 2)	None
6/24/97	Designer's Input to Procedure Development for the AP600 (WCAP-14690, Revision 1)	None
6/25/97	SPES-2 Tests Final Data Report (WCAP-14309, Revision 2)	None
6/26/97	Revised DRAP, SSAR section 16.2	None
6/27/97	PRA Revision 10	None
7/1/97	SSAR Revision 14	None
7/1/97	NOTRUMP Final Validation Report for AP600 (WCAP-14807, Revision 2)	None

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