



UNITED STATES
NUCLEAR REGULATORY COMMISSION
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
WASHINGTON, D. C. 20555

SL-0412

PDR 3/25/94

December 8, 1993

The Honorable Ivan Selin
Chairman
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Chairman Selin:

SUBJECT: SUMMARY REPORT - FOUR HUNDRED THIRD MEETING OF THE ADVISORY COMMITTEE ON REACTOR SAFEGUARDS, NOVEMBER 4-6, 1993, AND OTHER RELATED ACTIVITIES OF THE COMMITTEE

During its 403rd meeting, November 4-6, 1993, the Advisory Committee on Reactor Safeguards (ACRS) discussed several matters and completed the following reports:

Reports

- Draft Final Report of the PRA Working Group (Report to Chairman Selin from J. Ernest Wilkins, Jr., ACRS Chairman, dated November 10, 1993)
- Draft Commission Paper, "Policy and Technical Issues Associated with the Regulatory Treatment of Non-Safety Systems in Passive Plant Designs" (Report to Chairman Selin from J. Ernest Wilkins, Jr., ACRS Chairman, dated November 10, 1993)
- NRC Confirmatory Test Program in Support of the AP600 Design Certification (Report to Chairman Selin from J. Ernest Wilkins, Jr., ACRS Chairman, dated November 18, 1993)
- Computers in Nuclear Power Plant Operations (Report to Chairman Selin from J. Ernest Wilkins, Jr., ACRS Chairman, dated November 16, 1993)
- SECY-93-289, "Issuance of the Draft Preapplication Safety Evaluation Report (PSER) for the Power Reactor Innovative Small Module (PRISM) Liquid-Metal Reactor" (Report to Chairman Selin from J. Ernest Wilkins, Jr., ACRS Chairman, dated November 10, 1993)

HIGHLIGHTS OF KEY ISSUES CONSIDERED BY THE COMMITTEE

1. Draft Final Report of the PRA Working Group

The Committee was briefed by and held discussions with representatives of the Office of Nuclear Regulatory Research (RES) and NUMARC on the draft final report that had been prepared and the proposed recommendations with

9403310163 931208
PDR ACRS
SL-0412 PDR

DESIGNATED ORIGINAL

Certified By

EMB

RSO/110

respect to the use of PRA by NRC. The Committee also was briefed by a member of the senior NRC staff in regard to the activities for the proposed directions for current and future uses of PRA within the agency.

Conclusion

The Committee provided a report on this matter dated November 10, 1993, to Chairman Selin.

2. Preapplication Safety Evaluation Report (PSER) for the PRISM Design

The Committee discussed and commented on the NRC staff's draft PSER for the Power Reactor Innovative Small Module (PRISM) liquid-metal-cooled reactor design, NUREG-1368. During the meeting, the members heard briefings from the NRC staff and representatives of General Electric Nuclear Energy (GE) and Argonne National Laboratories on the heat removal system, positive void reactivity coefficient, gas expansion modules for sodium, and thermal conductivity of the molten metal fuel.

Conclusion

The Committee provided a report on this matter dated November 10, 1993, to Chairman Selin.

3. Regulatory Treatment of Non-Safety Systems (RTNSS)

The Committee was briefed by and held discussions with representatives of the NRR staff on the draft Commission paper, "Policy and Technical Issues Associated with the Regulatory Treatment of Nonsafety Systems in Passive Plant Design." The NRR staff discussed eight issues specific to RTNSS for passive LWR designs.

Conclusion

The Committee provided a report on this matter dated November 10, 1993, to Chairman Selin.

4. Safeguards and Security Requirements

The Committee reviewed and commented on the proposed Commission paper SECY-93-270, "Proposed Amendments to 10 CFR Part 73 to Protect Against Malevolent Use of Vehicles at Nuclear Power Plants," and safeguards and security requirements for the GE ABWR design. The Committee approved a report on the proposed amendments to 10 CFR Part 73 to protect against malevolent use of vehicles at nuclear power plants. [Subsequent to the meeting, the members agreed to discuss this report further during the 404th full Committee meeting.]

Conclusion

The Committee will continue discussion of a report on this subject.

5. Design Certification Material for ABWR

The Committee reviewed Chapter 7, "Instrumentation and Control Systems," of the Standard Safety Analysis Report for the ABWR design and Certified Design Material for the Instrumentation and Control Systems, Human Factors, Radiation Protection, and Piping Design. Representatives of the NRC staff and GE participated.

Conclusion

The Committee agreed to defer consideration of a report on this matter until the next full Committee meeting.

6. AP600 Confirmatory Test Program/Modifications to the ROSA Facility

The Committee reviewed and commented on the adequacy of the proposed test matrix and modifications and additions to the ROSA test facility prior to initiation of this NRC test program being conducted in support of the AP600 design certification review.

Conclusion

The Committee provided a report on this matter dated November 18, 1993, to Chairman Selin.

7. Westinghouse Experimental Programs Related to the AP600 Passive Plant Design Certification

Dr. Catton, Chairman of the Thermal Hydraulic Phenomena Subcommittee, noted that the NRC staff and Westinghouse Electric Corporation (W) have done excellent jobs with regard to W-sponsored experimental test program located at the Oregon State University. Dr. Larry E. Hochreiter, Consulting Engineer, Westinghouse Electric Corporation, discussed the W-sponsored AP600 test and analysis program, including the status of the major design certification tests. The W staff concluded that the test data will verify its standard safety analysis report codes and that the AP600 design certification test/ analysis program is extensive and is responsive to the concerns. A list containing the description of about 60 tests already completed and/or planned in support of the AP600 design certification effort was provided to the Committee.

Mr. Alan E. Levin, Reactor Systems Branch, NRR, discussed the status of the NRC's review of the W experimental test program. The staff's concerns and open issues have been transmitted to W. Representatives of W expressed a willingness to meet with the staff and work toward the resolution of these matters.

Conclusion

This was an information briefing only [A portion of this session was closed (from 11:25 a.m. to 12:05 p.m. on Friday, November 5, 1993) to

discuss information deemed proprietary by W (5 U.S.C. 552b(c)(4)). The Thermal Hydraulics Phenomena Subcommittee is scheduled to meet in Pittsburgh, Pennsylvania, in February 1994, to discuss related matters.

8. Technical Training Programs

The Committee heard a briefing by and held discussions with representatives of the NRC's Office for Analysis and Evaluation of Operational Data (AEOD) on the technical training programs being developed by AEOD and administered by the Technical Training Center in Chattanooga, Tennessee.

Mr. Edward Jordan stated that the AEOD expects to ask the Committee to review its training program needs survey and that this survey is expected to be in final form in early 1994.

Conclusion

This briefing was for information only. No action was taken by the Committee.

9. Reconciliation of ACRS Comments and Recommendations

The responses of the Executive Director for Operations (EDO) to the comments and recommendations included in previous ACRS reports were discussed as follows:

- EDO letter, dated October 13, 1993, responding to the ACRS report dated September 20, 1993, concerning ACRS Comments on the Proposed Rule Amending Fracture Toughness Requirements for Light Water Reactor Pressure Vessels, Proposed Rule Regarding Requirements for Thermal Annealing of Reactor Pressure Vessels, and Draft Regulatory Guide on Format and Content of Application for Approval for Thermal Annealing of Reactor Pressure Vessels.

Conclusion

The above EDO letter satisfactorily addressed the Committee's comments.

- EDO letter, dated October 29, 1993, responding to the ACRS report dated September 22, 1993, concerning ACRS Comments on Proposed Generic Letter Regarding Removal of Accelerated Testing and Special Reporting Requirements for Emergency Diesel Generators from Plant Technical Specifications.

Conclusion

The Committee believes that the EDO's response did not satisfactorily address the Committee's comments. The Committee will consider this issue further during the next full Committee meeting. Ms.

Helen Pastis stated that she would bring this issue to the attention of the EDO.

10. NRC Digital Systems Reliability and Nuclear Safety Workshop, September 13-14, 1993, at Crown Plaza Hotel, Rockville, Maryland

Dr. Harold W. Lewis, Chairman of Subcommittee on Computers in Nuclear Power Plant Operations, reported on his impressions of this workshop.

Conclusion

The Committee provided a report on this matter dated November 16, 1993, to Chairman Selin.

11. Subcommittee Meetings

During the period from October 8 to November 3, 1993, the following Subcommittee meetings were held:

- Advanced Boiling Water Reactors - October 26-27, 1993

The Subcommittee began its review of the NRC staff's Final Safety Evaluation Report for the GE Advanced Boiling Water Reactor design.

- Thermal Hydraulic Phenomena - October 28, 1993

The Subcommittee reviewed selected aspects of the NRC-sponsored ROSA-V confirmatory test program being developed in support of the W AP600 passive nuclear power plant design certification effort. Specific review topics were the test matrix and facility design modifications, including instrumentation and controls. The Subcommittee also discussed the status of the RES contract with Purdue University to perform integral thermal-hydraulic testing in support of the GE SBWR passive plant design.

- Computers in Nuclear Power Plant Operations/Ad Hoc Subcommittee on Design Acceptance Criteria (Joint Meeting) - November 2, 1993

The Subcommittees reviewed Chapter 7, "Instrumentation and Control Systems," of the Standard Safety Analysis Report and associated Certified Design Material (Tier 1) for the ABWR design, and related matters.

- SAFEGUARDS AND SECURITY - November 3, 1993

The Subcommittee reviewed the proposed Commission paper on Internal Threat, SECY-93-270, "Proposed Amendments to 10 CFR Part 73 to Protect Against Malevolent Use of Vehicles at Nuclear Power Plants," and safeguards and security requirements for the GE ABWR design.

- Planning and Procedures - November 3, 1993

The Subcommittee discussed proposed ACRS activities, practices and procedures for conducting the Committee business, and organizational and personnel matters relating to ACRS and its staff.

12. Future ACRS Activities

In regard to the review of an anticipated draft Commission paper on ALWR Policy Issue -Source Term, Dr. Kress concluded that the review of this matter would not require a subcommittee meeting. The Committee concurred.

13. Future Meeting Agenda

The Committee agreed to consider the following during the 404th ACRS Meeting, December 9-11, 1993, Bethesda, Maryland:

Proposed Supplement to Generic Letter 86-10 on Fire Endurance Testing - Review and comment on the proposed supplement to Generic Letter 86-10 on Fire Endurance Testing, and the technical differences between NUMARC and the NRC staff on the NUMARC test program related to the thermo-lag fire barrier. Representatives of the NRC staff and industry will participate.

EPRI Passive LWR Requirements Document - Discuss proposed ACRS report on the EPRI Passive LWR Requirements document. Representatives of the NRC staff will participate, as appropriate.

ABWR Certified Design Material - Review and comment on the Certified Design Material for the ABWR in the areas of piping design, human factors, and radiation protection. Representatives of the NRC and GE staff will participate.

ABWR and SBWR Water-Level Instrumentation - Review and comment on the NRC staff's recommendation that diversity of reactor pressure vessel water-level measurement be required for the ABWR and SBWR. Representatives of the NRC staff and industry will participate.

Insights Gained from the NRC Staff Reassessment of the Fire Protection Program - Hear a briefing by and hold discussions with representatives of the NRC staff on the lessons learned from the staff's recent reassessment of the fire protection program. Representatives of the industry will participate, as appropriate.

Report on the Extended Station Blackout Event at Narora Atomic Power Station (India) (Open/Closed) - Hear a briefing by and hold discussions with representatives of the NRC staff on the lessons learned from the severe turbine building fire that resulted in an extended station blackout on March 31, 1993, at the Narora Atomic Power Station (India).

Status of Individual Plant Examination (IPE) Program - Hear a briefing by and hold discussions with representatives of the NRC staff on the

December 8, 1993

status of the IPE program, the methodologies used by the licensees in performing IPEs and the insights gained from these studies, and the use of the IPE/IPEEE programs to resolve generic issues.

First-of-a-Kind Engineering - Hear a briefing by and hold discussions with representatives of the DOE and EPRI on a program at Advanced Reactors Corporation in the area of first-of-a-kind engineering.

Resolution of ACRS Comments and Recommendations - Discuss responses from the NRC Executive Director for Operations to recent ACRS comments and recommendations.

Report of the Planning and Procedures Subcommittee (Open/Closed) - Hear a report of the Planning and Procedures Subcommittee on matters related to the conduct of ACRS business.

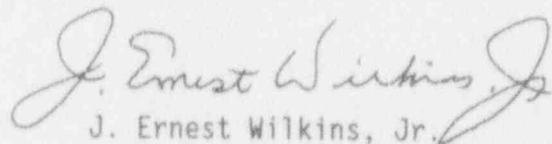
ACRS Subcommittee Activities - Hear reports and hold discussions regarding the status of ACRS subcommittee activities, including reports from the Subcommittees on Advanced Boiling Water Reactors and ABB-Combustion Engineering Standard Plant Designs.

Future Activities - Discuss topics proposed for consideration by the full Committee during future meetings.

Election of Officers (Open/Closed) - Elect new officers (Chairman, Vice-Chairman, and Member-at-Large to the Planning and Procedures Subcommittee) for calendar year 1994.

Miscellaneous - Discuss miscellaneous matters related to the conduct of Committee activities and complete discussion of matters and specific issues that were not completed during previous meetings, as time and availability of information permit.

Sincerely,


J. Ernest Wilkins, Jr.
Chairman