



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

SL-0449

PDR 5/8/97

May 3, 1997

The Honorable Shirley Ann Jackson
Chairman
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Dear Chairman Jackson:

SUBJECT: SUMMARY REPORT - FOUR HUNDRED FORTIETH MEETING OF THE
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS, APRIL 3-4,
1997, AND OTHER RELATED ACTIVITIES OF THE COMMITTEE

During its 440th meeting, April 3-4, 1997, the Advisory Committee on Reactor Safeguards (ACRS) discussed several matters and completed the following reports. In addition, the Committee authorized Dr. Larkins, Executive Director, to transmit the memoranda noted below:

REPORTS

- Proposed Regulatory Guidance Related to Implementation of 10 CFR 50.59 (Changes, Tests and Experiments) (Report to Shirley Ann Jackson, Chairman, NRC, from R. L. Seale, Chairman, ACRS, dated April 8, 1997)
- Risk-Based Regulatory Acceptance Criteria for Plant-Specific Application of Safety Goals (Report to Shirley Ann Jackson, Chairman, NRC, from R. L. Seale, Chairman, ACRS, dated April 11, 1997)
- Establishing a Benchmark on Risk during Low-Power and Shutdown Operations (Report to Shirley Ann Jackson, Chairman, NRC, from R. L. Seale, Chairman, ACRS, dated April 18, 1997)

MEMORANDA

- Proposed Rule - Financial Assurance Requirements for Decommissioning Nuclear Power Reactors (Memorandum to L. Joseph Callan, Executive Director for Operations, NRC, from John T. Larkins, Executive Director, ACRS, dated April 8, 1997)
- Proposed Rulemaking Plan for Amendments to Subpart H and Appendix A to 10 CFR Part 20--Respiratory Protection (Memorandum to L. Joseph Callan, Executive Director for Operations, NRC, from John T. Larkins, Executive Director, ACRS, dated April 8, 1997)

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- Proposed Rulemaking Plan for Emergency Planning Requirements for Permanently Shutdown Nuclear Power Plant Sites (Memorandum to L. Joseph Callan, Executive Director for Operations, NRC, from John T. Larkins, Executive Director, ACRS, dated April 11, 1997)

HIGHLIGHTS OF KEY ISSUES CONSIDERED BY THE COMMITTEE

1. Proposed Regulatory Approach Associated with Steam Generator Integrity

The Committee heard a briefing by and held discussions with representatives of the staff regarding the proposed regulatory approach for addressing steam generator integrity. Based on the draft risk assessment and draft regulatory analysis, the staff is reconsidering whether rulemaking is the best approach for addressing steam generator integrity concerns. The staff stated that one alternative is to impose mandatory compliance backfit and voluntary risk assessment requirements through the generic letter process. The staff is preparing a memorandum to the Commission which would describe the staff alternative to steam generator integrity rulemaking.

Conclusion

This briefing was for information only. The Committee expressed an interest in reviewing and commenting on the staff's memorandum to the Commission.

2. Consequences of Reactor Water Cleanup System Line Break Outside Containment

During the review of the advanced boiling water reactor design, the ACRS identified safety-related deficiencies in the reactor water cleanup system (RWCS). The ACRS requested that the NRC staff perform a study to investigate the consequences of an unisolated RWCS pipe break outside primary containment at operating boiling water reactors. The staff completed its draft report on this issue; however, the report is undergoing internal NRR review. The Committee plans to review the proposed final report of this study after it has been completed by the staff.

Conclusion

This briefing only covered the status of the report of the study, without detailed discussion of the technical description and the results of the study. The Committee plans to review the proposed final report at a future ACRS meeting.

3. Subcommittee Report

Dr. T. Kress, Chairman of the Thermal-Hydraulic Phenomena Subcommittee, provided a report on the results of the Subcommittee's March 28, 1997 meeting. The Subcommittee met to review the methodology proposed by the Westinghouse Electric Corporation for the modeling of the AP600 long-term cooling (LTC) accident analysis, using its COBRA/TRAC code. In particular, Westinghouse was interested in obtaining the Subcommittee's initial reaction to the viability of its so-called window approach used in the LTC methodology.

Dr. Kress noted that the question posed by the Subcommittee at this meeting was, "Is the window approach acceptable for modeling of the LTC scenario?" The Subcommittee concluded that this approach is viable. Nevertheless, some issues require additional work by Westinghouse. In particular, since Westinghouse has to couple the COBRA/TRAC code with its containment code (GOTHIC) for the LTC analysis, questions remain regarding the conservatism assumed in the COBRA/TRAC calculations and the associated uncertainties.

The Subcommittee also expressed consternation regarding the approach elected by Westinghouse to address this matter; i.e., use of a complex code not suitable for the specific modeling problem at hand (i.e., quasi steady-state conditions). Extensive Committee discussion ensued regarding this issue. Dr. Powers suggested that the Committee pursue with the NRC Office of Nuclear Regulatory Research the issue of the development of analytical tools that will be appropriate to the specific problem at hand.

Conclusion

The Thermal-Hydraulic Phenomena Subcommittee plans to continue its discussion of this matter after Westinghouse has completed additional work.

4. Proposed Regulatory Guidance Related to Implementation of 10 CFR 50.59 Requirements

The Committee heard presentations by and held discussions with representatives of the NRC staff regarding SECY-97-035, "Proposed Guidance Related to Implementation of 10 CFR 50.59 (Changes, Tests and Experiments)." The Committee discussed the staff's approach to clarifying guidance for implementing 10 CFR 50.59 and the options proposed by the staff for resolving the policy issues.

The Committee held discussions with representatives of the Nuclear Energy Institute (NEI) regarding SECY-97-035, and

guidance in NSAC-125, "Guidelines for 10 CFR 50.59 Safety Evaluations." The guidance in NSAC-125 is being used by the industry but is not endorsed by the NRC. Representatives of NEI also discussed draft guidelines specified in NEI 96-07, "Guidelines for 10 CFR 50.59 Safety Evaluations," in which NEI proposes to improve on the guidance in NSAC-125.

Conclusion

The ACRS provided a report to Chairman Jackson dated April 8, 1997, on this matter.

5. Boraflex Degradation in Spent Fuel Pool Storage Racks

The Committee heard a briefing by and held discussions with representatives of the NRC staff regarding the resolution of issues associated with the degradation of boraflex coupons used in spent fuel pool storage racks as well as the licensee responses to Generic Letter 96-04, "Boraflex Degradation in Spent Fuel Storage Racks." The Committee and the NRC staff discussed the subcriticality criteria for unborated and borated spent fuel pool water, and the industry and Electric Power Research Institute efforts to measure, calculate, and address the effects of boraflex degradation on spent fuel criticality over the long term.

Conclusion

This briefing was for information only. No Committee action was required.

6. Use of Potassium Iodide After a Severe Accident

The Committee heard presentations by and held discussions with representatives of the staff, NEI, and the State of Illinois concerning the staff's position on a petition for rulemaking filed by a private citizen to reevaluate the policy regarding the use of potassium iodide (KI) after a severe accident at a nuclear power plant.

The staff briefed the Committee on the proposed Commission paper which provides a resolution to the petition for rulemaking. The petitioner requested that the Commission amend its regulations 10 CFR 50.47(b)(10) to specify that the prophylactic use of KI for the general population within the plume exposure pathway Emergency Planning Zone (EPZ) for each licensed nuclear power reactor be identified as one of the "range of protective actions" required to be set forth in State and local emergency plans.

In 1996, the Federal Radiological Preparedness Coordinating Committee convened an ad hoc Subcommittee to review new information and comments on this matter from interested parties. The Subcommittee stated that without changing the Federal policy, and interceding in the State's prerogative to make its own decision on whether or not to use KI, the Federal Government (NRC, or through FEMA, etc.) should fund the purchase of a KI stockpile for any State that, hereafter, decides to incorporate its use as a protective measure for the general public. However, it is the staff's position that a revision to the regulations is unwarranted because the approach of stockpiling KI and advising States of the availability of the stockpile substantially addresses the fundamental concerns behind the petition, without the burden associated with requiring changes in all State and local emergency plans. The staff believes that given these circumstances, unlike those which existed at the time of the Three Mile Island accident, KI could be made available if needed in the future. As a result, the staff recommends that the petition for rulemaking be denied.

Representatives of NEI and the State of Illinois concurred with the staff's recommendation that the petition be denied and that States and localities be allowed to decide when to include KI in their emergency plans for general public use. The stockpiling or predistribution of KI for the general public will not add any significant health and safety benefit to the adequate level of protection currently provided by existing emergency preparedness at and around commercial nuclear power plants.

Conclusion

The Committee plans to discuss a proposed report on this matter during its May 1-3, 1997, meeting.

RECONCILIATION OF ACRS COMMENTS AND RECOMMENDATIONS

The Committee discussed the response from the NRC Executive Director for Operations (EDO) dated March 31, 1997, responding to ACRS comments and recommendations included in the ACRS report dated March 19, 1997, on the NRC Office of Nuclear Regulatory Research Program to Demonstrate the Adequacy of the RELAP5 MOD3 Code to Analyze AP600 Passive Plant Behavior.

The Committee decided that it was satisfied with the EDO response.

OTHER RELATED ACTIVITIES OF THE COMMITTEE

During the period from March 6 through April 3, 1997, the following Subcommittee meetings were held:

- Thermal-Hydraulic Phenomena - March 28, 1997

The Subcommittee on Thermal-Hydraulic Phenomena met with representatives of the NRC staff to review the Westinghouse Test and Analysis Program being conducted in support of the AP600 design certification. In particular, the Subcommittee discussed the Westinghouse approach for modeling long-term cooling accident scenarios using its COBRA/TRAC code.

- Planning and Procedures - April 2, 1997

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

LIST OF FOLLOW-UP MATTERS FOR THE EXECUTIVE DIRECTOR FOR OPERATIONS

- The Committee decided not to review the proposed rule pertaining to Financial Assurance Requirements for Decommissioning Nuclear Power Reactors. [A memorandum was sent to L. Joseph Callan, Executive Director for Operations, from John T. Larkins, Executive Director, ACRS, dated April 8, 1997.]
- The Committee decided not to review the proposed rulemaking plan pertaining to Amendments to Subpart H and Appendix A to 10 CFR Part 20 regarding Respiratory Protection. [A memorandum was sent to L. Joseph Callan, Executive Director for Operations, from John T. Larkins, Executive Director, ACRS, dated April 8, 1997.]
- The Committee decided not to review the proposed rulemaking plan pertaining to Emergency Planning Requirements for Permanently Shutdown Nuclear Power Plant Sites. [A memorandum was sent to L. Joseph Callan, Executive Director for Operations, from John T. Larkins, Executive Director, ACRS, dated April 11, 1997.]

PROPOSED SCHEDULE FOR THE 441ST ACRS MEETING

The Committee agreed to consider the following during the 441st ACRS Meeting, May 1-3, 1997:

Design Basis Verification - The Committee will hear presentations by and hold discussions with representatives of the NRC staff regarding the proposed memoranda to the Commission associated with review criteria for design basis verification and other related NRC staff activities. Representatives of the nuclear industry will participate, as appropriate.

Electric Utility Restructuring and Deregulation - The Committee will hear presentations by and hold discussions with representatives of the NRC Staff regarding the proposed final Policy Statement on restructuring and economic deregulation of the electric utility industry. Representatives of the nuclear industry will participate, as appropriate.

Proposed Final Regulatory Guide 1.164, "Time Response Design Criteria for Safety-Related Operator Actions" - The Committee will hear presentations by and hold discussions with representatives of the NRC staff regarding the proposed final Regulatory Guide 1.164. Representatives of the nuclear industry will participate, as appropriate.

Regulatory Effectiveness - The Committee will hear presentations by and hold discussions with the Deputy Executive Director for Operations regarding regulatory effectiveness.

Meeting with the NRC Commissioners - Commissioners' Conference Room, One White Flint North - Meeting with the NRC Commissioners to discuss the following items:

- risk-informed, performance-based regulation and related matters;
- risk-based regulatory acceptance criteria for plant-specific application of safety goals;
- proposed regulatory approach associated with steam generator integrity;
- establishing a benchmark on risk during low-power and shutdown operations;
- status of ACRS review of the National Academy of Sciences/ National Research Council Phase 2 Study Report on Digital Instrumentation and Control Systems;
- Human Performance Program Plan; and
- ACRS report to Congress on Nuclear Safety Research and Regulatory Reform.

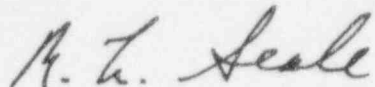
Staff Requirements Memorandum (SRM) on Direction Setting Issue 22, Research - The Committee will discuss issues raised by the Commission in the March 28, 1997, SRM related to research. Representatives of the NRC staff will participate, as appropriate.

Implementation of the Maintenance Rule - The Committee will hear presentations by and hold discussions with representatives of the NRC staff regarding the results of the pilot inspections conducted

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by the staff to monitor the effectiveness of licensees in implementing the Maintenance Rule. Representatives of the nuclear industry will participate, as appropriate.

Sincerely,

A handwritten signature in cursive script, reading "R. L. Seale". The signature is written in dark ink and is positioned above the printed name and title.

R. L. Seale
Chairman