No. 95-66 FOR IMMEDIATE RELEASE
Tel. 301/415-8200 (Thursday, May 18, 1995)

NOTE TO EDITORS:

The Nuclear Regulatory Commission has received from its independent Advisory Committee on Reactor Safeguards (ACRS) the attached report, in letter form, that comments on regulatory reform initiatives and the National Performance Review Phase II.

In addition, the NRC's Executive Director for Operations has received two letter reports from the ACRS. They provide comments on a proposed final generic letter, 95-XX, "Voltage-Based Repair Criteria for Westinghouse Steam Generator Tubes," and a review of best-estimate codes for evaluation of emergency core cooling system performance.

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Attachments:
As stated

May 10, 1995

The Honorable Ivan Selin, Chairman
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Dear Chairman Selin:

SUBJECT: REGULATORY REFORM INITIATIVES AND NATIONAL PERFORMANCE REVIEW PHASE II

During the 421st meeting of the Advisory Committee on Reactor Safeguards, May 4-6, 1995, we discussed the status of the ongoing Regulatory Reform Initiatives Program (RRIP) and the activities regarding the National Performance Review Phase II (NPR II). During this meeting, we had the benefit of discussions with representatives of NRR, RES, the NRC NPR II Steering Committee, and the Nuclear Energy Institute (NEI). We also had the benefit of the documents referenced. The purpose of our report is to provide comments in a timely manner on the activities of the NPR II Steering Committee.

The NPR II effort draws on the RRIP. The RRIP, which includes elements of the Regulatory Impact Survey (1989), the Regulatory Review Group (RRG) Study (1993), and the RRG Implementation Plan (1994), anticipated the regulatory review aspects of the NPR II requirements. The Cost-Beneficial Licensing Actions and the Requirements Marginal-to-Safety programs demonstrate NRC's commitment to effective and cost-beneficial regulation. As the result of these activities, the NPR II Steering Committee is well positioned to provide specific and detailed recommendations to address the Phase II review of existing regulations.

The NPR II also requests a review of the agency mission and an examination of the possible devolution of selected responsibilities to state or local authorities. These issues are being integrated into the Steering Committee recommendations.

The Steering Committee provided us with an outline of the approach to be taken in response to all three areas of concern to the NPR II review. The Steering Committee is tasked to identify burdensome, outdated, marginal-to-safety, overly prescriptive, and overlapping regulations, and to recommend appropriate changes. A review of the functions of the NRC and the efficiency of their implementation will be included.

In response to the request by the Steering Committee, we offer the following comments on its proposed program:

- Those rules and regulations that rely on input from other agencies (such as EPA, NCRP, DOE, DOD, DOS, and DOT) should be identified for future reconciliation with any changes that may arise from those agencies. An obvious example is the NRC interaction with EPA and NCRP on 10 CFR Part 20.

- The Steering Committee report should make it clear that the NRC had launched its intensive review of regulations well before the beginning of NPR II.

- As NRC scrutinizes its regulations, it is imperative that criteria be established for the tradeoff between the requirements of the NRC public health and safety mandate and the goals of the NPR II.

The NEI presented a compilation of proposed changes to regulations that appear to contribute to the objectives of the NPR II study. While we have not reviewed the NEI proposal in detail, we believe the staff should give it appropriate consideration during the course of the NPR II study.

We wish to be informed of the results of the NPR II study.

Sincerely,

T. S. Kress
Chairman, ACRS

References:
1. Letter dated March 6, 1995, from NRC Chairman Ivan Selin, to Alice M. Rivlin, Director, Office of Management and Budget, regarding Nuclear Regulatory Commission's National Performance Review Phase II options paper
2. Memorandum dated March 7, 1995, from James M. Taylor, Executive Director for Operations, NRC, to K. Cyr, OGC, et al., Subject: National Performance Review Phase 2
3. Letter dated April 3, 1995, from William H. Rasin, Nuclear Energy Institute, to Jack Roe, Director, NRC NPR II Steering Committee, Subject: National Performance Review -- Phase 2
4. SECY-95-089 dated April 10, 1995, Memorandum from James M. Taylor, Executive Director for Operations, NRC, for the Commissioners, Subject: Semiannual Status Report on the Implementation of Regulatory Review Group Recommendations
5. U.S. Nuclear Regulatory Commission Administrative Letter 95-02 dated February 23, 1995, from Eugene V. Imbro, Office of Nuclear Reactor Regulation, Subject: Cost Beneficial Licensing Actions
6. ACRS report dated July 15, 1993, from J. Ernest Wilkins, Jr., Chairman, ACRS, to Ivan Selin, Chairman, NRC, Subject: Regulatory Review Group Report

May 15, 1995

Mr. James M. Taylor
Executive Director for Operations
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Dear Mr. Taylor:

SUBJECT: PROPOSED FINAL GENERIC LETTER 95-XX, "VOLTAGE-BASED REPAIR CRITERIA FOR WESTINGHOUSE STEAM GENERATOR TUBES"

During the 421st meeting of the Advisory Committee on Reactor Safeguards, May 4-6, 1995, we discussed the subject generic letter. During this meeting, we had the benefit of discussions with representatives of the NRC staff, the Nuclear Energy Institute, and the Southern Nuclear Operating Company. We also had the benefit of the documents referenced.

We provided comments on a draft version of the generic letter in our report dated September 12, 1994. A number of changes have been made in the generic letter as a result of public comments. These changes do not affect our technical assessment that the generic letter provides an acceptable approach to ensure the integrity of tubing subject to axially oriented outside diameter stress corrosion cracking in Westinghouse steam generators with drilled-hole support plates.

In our September 12, 1994 report, we noted that the database for the present empirical correlations of burst pressure, leakage, and bobbin coil voltage appears to be only marginally adequate. Because of this, we believe the staff decision to retain the conservative lower voltage limits of 2 volts for 7/8-inch diameter tubing and 1 volt for 3/4-inch diameter tubing until more experience is gained with the application of the criteria is prudent and appropriate.

In our previous report, we noted that the concern raised in the differing professional opinion on the calculation of the radiological releases during a main steamline break appeared to warrant further consideration. This issue has not yet been resolved, but we believe that timely implementation of the generic letter should proceed to prevent unnecessary tube repairs and reduce staff resources associated with plant-specific reviews. However, the radiological release issue should be addressed in the proposed rule on steam generator tube maintenance and surveillance.

Dr. William Shack did not participate in the Committee's deliberations regarding this matter.

Sincerely,

T. S. Kress
Chairman, ACRS

References:

1. Memorandum dated April 6, 1995, from Brian Sheron, Director, Division of Engineering, NRR, to John Larkins, Executive Director, ACRS, Subject: ACRS Review of Generic Letter (GL) 95-XX, "Voltage-Based Repair Criteria for Westinghouse Steam Generator Tubes"
2. ACRS Report dated September 12, 1994, from T. S. Kress, Chairman, ACRS, to Ivan Selin, Chairman, NRC, Subject: Proposed Generic Letter 94-XX, "Voltage-Based Repair Criteria for Westinghouse Steam Generator Tubes"

May 17, 1995

Mr. James M. Taylor
Executive Director for Operations
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Dear Mr. Taylor:

SUBJECT: REVIEW OF BEST-ESTIMATE MODELS FOR EVALUATION OF EMERGENCY CORE COOLING SYSTEM PERFORMANCE

During the 421st meeting of the Advisory Committee on Reactor Safeguards, May 4-6, 1995, we discussed the methodology being applied by NRR for reviewing the acceptability of best-estimate calculations of emergency core cooling system (ECCS) performance in accordance with the revisions made to 10 CFR 50.46 (ECCS Rule). Our Subcommittee on Thermal Hydraulic Phenomena held a meeting on May 2, 1995, to discuss this matter. During these meetings, we had the benefit of discussions with representatives of NRR and the Westinghouse Electric Corporation. We also had the benefit of the documents referenced.

A historical impediment to the use of best-estimate predictions of plant behavior following a large-break LOCA was the lack of a method for determining the accuracy of the predicted peak cladding temperature. In a September 16, 1986 report, the ACRS made the following comment:

> "The acceptability of realistic evaluation models rests on the development of a satisfactory methodology for determination of the code overall uncertainty. . . . We recommend that the methodology used to evaluate uncertainty be subjected to peer review."

This was done and the ACRS reviewed and endorsed the resulting Code Scaling, Applicability, and Uncertainty (CSAU) evaluation methodology. It is our view that the CSAU methodology provides a well-structured, traceable, and practical technical basis for quantifying best-estimate code uncertainty. It was the development and demonstration of the CSAU methodology that allowed the successful promulgation of the revision to the ECCS Rule.

Westinghouse Electric Corporation is presenting an alternative approach to the CSAU methodology for determining the uncertainty in its best-estimate computer code predictions for both existing plants and the AP600 passive plant design. This best-estimate code is intended to meet the requirement of the ECCS Rule that to a "high level of probability," the ECCS criteria will not be exceeded. Although the ECCS Rule allows alternative approaches, none has been reviewed to date nor have review criteria been developed. If Westinghouse persists in following its present path, it is unclear if the intent of 10 CFR 50.46 will be met. Based on the staff presentations, it appears that adoption of the alternative approach would require a weakening of the acceptance criterion for evaluating uncertainty. We believe the staff should be able to confirm that the Westinghouse uncertainty evaluation conforms to the applicable requirements of 10 CFR 50.46 Paragraph (a)(1)(i) in terms of both high probability and high confidence.

During our meeting, we learned that at least two more applicants are requesting approval of best-estimate computer codes. We do not know how they plan to address the nonexceedance requirement of 10 CFR 50.46. A clear statement is needed from the staff as to what constitutes an acceptable demonstration that the ECCS nonexceedance criterion has been met. We would like to see such a statement before the staff begins its review of these other best-estimate codes.

Several aspects of the current review process that were discussed during our meeting should be noted. The review of the Westinghouse best-estimate code has been under way since 1992. We were told that during this period, there has been no formal documentation of this review. Key elements of the alternative approach proposed by Westinghouse for uncertainty have not been addressed. The material submitted by Westinghouse in support of its best-estimate code application is confusing and difficult to follow.

The staff waits for Westinghouse to present its arguments and then reacts as best it can, using some of the provisions of Regulatory Guide 1.157 to guide the review. This reactive approach is a risky procedure for both Westinghouse and the staff. Furthermore, it is much more resource intensive to both because of the iterative nature of "wait-and-see," followed by rounds of questions and answers. This process is time consuming, unstructured, and difficult to trace.

We recommend prompt attention to these matters.

Sincerely,

T. S. Kress
Chairman, ACRS

<u>References</u>:

1. 10 CFR 50.46(a), as amended through August 31, 1992, Acceptance Criteria for Emergency Core Cooling Systems for Light Water Nuclear Power Reactors

2. U.S. Nuclear Regulatory Commission, Regulatory Guide 1.157, "Best-Estimate Calculations of Emergency Core Cooling System Performance" May 1989

3. Westinghouse Electric Corporation Report Addressing Compliance of the Westinghouse Best-Estimate LBLOCA Code and Methodology described in WCAP-12945-P with NRC Regulatory Positions Described in Regulatory Guide 1.157 (**Westinghouse Proprietary**), transmitted by telecopy from Westinghouse Electric Corporation dated March 31, 1995

4. Table 2.1.2-1, Comparison of Regulatory Guide 1.157 Requirements and Westinghouse's Best-Estimate Large-Break LOCA Model (Draft), transmitted by telecopy from INEL dated March 23, 1995

5. Westinghouse Response to Requests for Additional Information on WCAP-12945-P, Volume 5, COBRA/TRAC Code Qualification Document, transmitted by telecopy from INEL dated April 12, 1995, [Westinghouse Proprietary]

6. U.S. Nuclear Regulatory Commission Report, "Quantifying Reactor Safety Margins - Application of Code Scaling, Applicability, and Uncertainty Evaluation Methodology to a Large-Break, Los-of-Coolant Accident," NUREG/CR-5249, December 1989

7. Letter dated April 24, 1995, from L. W. Ward, INEL, to F. Orr, Office of Nuclear Reactor Regulation, NRC, transmitting Draft Westinghouse Report, "Review and Evaluation, Westinghouse Code Qualification for Best Estimate LOCA Analysis," dated April 24, 1995

8. ACRS Report dated September 16, 1986, from D. A. Ward, Chairman, ACRS, to L. Zech, Jr., Chairman, NRC, Subject: ACRS Comments on the Proposed Revision to the ECCS Rule in 10 CFR 50.46, "Acceptance Criteria for ECCS for Light Water Nuclear Power Reactors," and Appendix K, "ECCS Evaluation Models"

9. ACRS Report dated July 20, 1988, from W. Kerr, Chairman, ACRS, to V. Stello, Jr., Executive Director for Operations, NRC, Subject: Comments on the Staff's Draft Safety Evaluation of the Westinghouse Topical Report, WCAP-10924, "Westinghouse Large-Break LOCA Best-Estimate Methodology"