



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

June 10, 1980

Honorable John F. Ahearne
Chairman
U.S. Nuclear Regulatory Commission
Washington, DC 20555

SUBJECT: REPORT ON NUREG-0667, "TRANSIENT RESPONSE OF BABCOCK & WILCOX-
DESIGNED REACTORS"

Dear Dr. Ahearne:

During its 242nd meeting, June 5-7, 1980, the ACRS completed its review of NUREG-0667. The Committee had the benefit of discussions with the NRC Staff and representatives of the nuclear industry and had received briefings from the NRC Staff during the 240th and 241st meetings of the Committee (April 10-12 and May 1-3, 1980). A Subcommittee meeting on the subject was held on April 29, 1980.

The recommendations of NUREG-0667 are consistent with conclusions reached by the NRC Staff in previous investigations and addressed in Draft 3, NUREG-0660, "NRC Action Plans Developed As a Result of the TMI-2 Accident." The ACRS has commented previously on the Action Plan.

The ACRS agrees in general with the recommendations of NUREG-0667 and believes their implementation will enhance the safety of Babcock & Wilcox (B&W)-designed reactors. The Committee has, however, several comments as follows:

1. The ACRS is concerned that the recommendations in this report show a continuation of a trend by the NRC Staff toward less and less flexibility in the resolution of safety issues. We believe that this trend is evidenced by what we have perceived as increasingly frequent recommendation of prescriptive solutions being offered and insisted on by the NRC Staff. The Committee recognizes that prescriptiveness is sometimes a consequence of lack of initiative on the part of the industry but believes that efforts should be made to encourage the industry to find alternative and potentially better solutions to safety problems.
2. The Committee recognizes the need to develop "fixes" as system deficiencies become apparent, but suggests that the preoccupation with specific problems related to B&W reactor designs not be permitted to detract unduly from attention to generic problems or to matters applicable to other types of light water reactors. For example, development of a seismically qualified dedicated shutdown heat removal system is a project which should be undertaken with a high priority.

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3. In its section on "Instrumentation and Control", the report recommends that power buses and signal paths for nonnuclear instrumentation and associated control systems be separated and channelized to reduce the impact of failure of one bus. The Rancho Seco and Crystal River events demonstrated clearly that the operator can be deprived of critically necessary information in the event of such a failure. However, vulnerability to such loss may not be restricted to B&W nuclear steam supply systems.

Detailed examination will reveal that many plants of even recent design have not included indicating, recording, or other operator information circuitry in the group for which separation and independence are required. We believe that reliable information for the operator is necessary, and more separation may be required. It would seem timely to review possible application of Regulatory Guide 1.75 to these circuits.

Redundant indication and recording, if it means only two trains, leaves the problem of obtaining a proper response when contradictory information is provided. This matter requires further study.

We suggest that the question of off-scale indications by instruments during upset conditions be addressed by the licensees to assure that information vital to the control of the course of an accident not be lost.

4. In its section on "General Areas For Improvement", the report recommends continued study of the criteria for tripping reactor coolant pumps during small-break LOCAs. In many plants tripping the pumps causes loss of the pressurizer spray function, the principal means for reducing system pressure. The study should include evaluation of the benefits of a separate source of spray water to control mild overpressure transients with pumps tripped.

With the reservations and suggestions mentioned above, the ACRS believes that the recommendations of NUREG-0667 should be implemented on a schedule which allows sufficient time for orderly design, installation, and testing of the suggested changes.

Sincerely,



Milton S. Plesset
Chairman