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

April 17, 1980

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

SUBJECT: NUREG-0660, "NRC ACTION PLANS DEVELOPED AS A RESULT OF THE TMI-2 ACCIDENT," DRAFT 3

Dear Dr. Ahearne:

The ACRS reported on its review of the Near-Term Operating License Items of NUREG-0660 on March 11, 1980 and completed its review of Draft 3 of the Action Plan during its 240th meeting, April 10-12, 1980. The Committee had the benefit of discussions with the NRC Staff. A Subcommittee met with the NRC Staff to review the Plan on April 1 and 2, 1980, and also met with representatives of the General Electric Company and the Vermont Yankee Nuclear Power Corporation on April 2, 1980.

The Committee believes that the Plan, as represented by the third draft, is a generally well-balanced document that establishes reasonable priorities. The ACRS recognizes that it would be impractical for the NRC Staff to expand the descriptions in NUREG-0660 to convey the detailed scope of each listed item; however, the Committee wants to be sure that sufficient emphasis is being placed on particular aspects of some of the items listed.

The ACRS believes the Plan to be deficient in the following aspects:

- Task II.C.1 "Reliability Engineering and Risk Assessment - Initial Integrated Reliability Evaluation Program (IREP)"

  In its report of March 11, 1980 on NTOL requirements, the ACRS commented favorably on the IREP program as it was then described. However, the Committee also recommended that the NTOL plants as well as current licensees be concurrently required to perform IREP-like studies on an expedited but practical schedule. The ACRS wishes to reiterate that recommendation.

- Task IV.A "Strengthen Enforcement Process"

  The Committee believes that the need to implement and enforce 10 CFR 21 is an important lesson that should be learned from the TMI-2 accident.

  The first paragraph of the Introduction to Chapter I of NUREG-0660 states, "The result of every investigation of the accident at TMI-2 has been the conclusion that, although many factors contributed to the accident, the major contributing factor was the manner in which the plant was operated

both before and during the accident." The Committee agrees that this is the tenor of the conclusions of the investigatory reports, and also agrees that appropriate action by the operators would have averted the accident. The Committee believes, however, that greater recognition should be given to the probability that the accident would have been averted if the licensee had been warned that, under the circumstances of the initiating transient, indications could lead operators to take incorrect action. There had been some recognition of this possibility both within and outside the NRC, and the transcript and exhibits of the President's Commission report (but not the reported conclusions) show that this problem had been discussed at a decision-making level by the NSSS vendor as a result of a warning by one of his engineers.

The Committee recognizes that vendors are justified, in some cases, in assuming the responsibility for deciding whether a safety issue exists. However, when an issue of this significance is raised by competent and responsible engineers, including those at a supervisory level, the Committee believes that NRC should be made a party to the decision. In this case, it is reasonable to suppose that notification to NRC of a serious concern expressed by vendor personnel would have prompted NRC participation, including an expedited review of a similar warning by an NRC engineer, and would have led to an order to the TMI-2 licensee that should have averted the accident. The Committee believes that the industry has, in general, acted in a responsible manner in notifying NRC of potential safety issues as they arise, but it believes that real NRC control of reporting procedures is necessary. The Committee believes this should be specifically listed as a Priority Group 1 item in Section III of NUREG-0660.

The ACRS understands that this matter is to be addressed as a sub-item of Task IV.A but is concerned that preoccupation with the operators' role in the TMI-2 accident tends to de-emphasize the urgency of enforcement with respect to vendors and architect engineers.

The following items may be covered by the Plan or by non-TMI-2 generic items, but are listed as items that the ACRS believes should receive early attention:

- The ACRS supports the recommendation of the Office of Standards Development that the Action Plan should include a task which considers the possible establishment of classes of equipment between those most important to safety and those least important to safety.

- The Action Plan includes several tasks which bear on means of shutdown heat removal such as the auxiliary feedwater system and the feed and bleed method. However, the Action Plan appears to lack a coordinated effort to evaluate shutdown heat removal requirements in a comprehensive manner, thereby permitting a judgment of adequacy in terms of overall system requirements. The Committee recommends the development of such a function.

The ACRS has noted in previous letters that it is important that the improvements in safety proposed as a result of the TMI-2 accident be considered in a broad perspective and that other matters of importance to safety receive proper priority. The ACRS wishes to make several comments in this regard.

- In its report of December 13, 1979 on the TMI-2 Lessons Learned Task Force Final Report and its report of December 17, 1979 on A Review of NRC Regulatory Processes and Functions (NUREG-0642), the ACRS recommended the development of more effective methods of uncovering design errors. The Committee believes that resources should be allocated to initiate the formulation of an appropriate approach.

- The ACRS has previously noted the need to reconsider the present regulatory approach to control systems as they relate to safety. The Rancho Seco transient of March 20, 1978 had provided an important illustration of how control systems can both cause and aggravate transients. The more recent transients at Oconee on November 10, 1979 and Crystal River on February 26, 1980 add further emphasis. The NRC Staff has initiated efforts to correct the specific issues raised by these transients. However, the ACRS wishes to reiterate its belief that there is also need for a broad study which reevaluates in a systematic way the regulatory approach to what have been previously considered non-safety systems, controls, and instrumentation. The ACRS recommends that an appropriate resource level be allocated to this important task.

- The ACRS recommends that the Regulatory Staff review its current priorities on unresolved safety issues and generic items to see whether the priorities established prior to the TMI-2 accident are still valid. Although the NRC Staff had earlier expected that the demands of the Task Action Plan would delay significant work on the DC power issue, the Staff advised the ACRS at its April 1980 meeting that this issue would now be elevated in priority and receive early attention. The ACRS strongly supports a high priority for resolution of this issue.

- The ACRS believes that, in preparation of the Action Plan, insufficient attention was given to both general and specific policy questions which require consideration in connection with near-term construction permits. The Committee recommends that the appropriate resources be devoted to this matter in a timely fashion. In a similar vein, the ACRS recommends that the NRC initiate appropriate efforts on the development of safety criteria for LWRs for which construction permits have not yet been requested, including consideration of the potential augmentation in safety that might accrue from the development of a limited number of standard plant designs.

Several items of the Action Plan include sub-items relating to research needs and programs. These have not been reviewed in detail but will be reviewed and commented on, as appropriate, as part of the Committee's annual review of the NRC Research Program.

Subject to the foregoing comments, and those in its March 11, 1980 report on NTOL requirements, the ACRS finds that Draft 3 of NUREG-0660 with modifications that the ACRS understands will be incorporated into Draft 4, is a satisfactory plan for dealing with issues identified as a result of the TMI-2 accident. As the Plan develops, the ACRS will continue its interest in relative priorities among pre-TMI-2 and post-TMI-2 items.

Sincerely,

Milton S. Plesset

Milton S. Plesset
Chairman

References:

1. U. S. Nuclear Regulatory Commission, "NRC Action Plans Developed as a Result of the TMI-2 Accident" USNRC Report NUREG-0660, Draft 3, March 5, 1980.

2. Atomic Industrial Forum, Inc. letter dated February 22, 1980 forwarding "Report to the AIF Policy Committee on Follow-Up to the Three Mile Island Accident by the Working Group on Action Plan Priorities and Resources."

3. U. S. Nuclear Regulatory Commission memorandum dated April 1, 1980 for Chairman Ahearne from W. J. Dircks, Subject: "ACRS Report on Near-Term Operating License Requirements."

4. U. S. Nuclear Regulatory Commission memorandum dated March 26, 1980 for W. J. Dircks from R. J. Budnitz, Subject: "Management Review of Draft 3 of TMI Action Plan."

5. U.S. Nuclear Regulatory Commission memorandum undated for W. J. Dircks from Victor Stello, Jr., Subject: "Management Review of Draft 3 of TMI-Action Plan."

6. U.S. Nuclear Regulatory Commission memorandum dated April 1, 1980 for W. J. Dircks from Harold R. Denton, Subject: "NRR Management Review of Draft 3 of TMI Action Plan."

7. U. S. Nuclear Regulatory Commission memorandum dated March 27, 1980 for W. J. Dircks and R. J. Mattson from R. B. Minogue, Subject: "SD Comments and Resource Information for Draft 3a of TMI Action Plan."

8. General Electric Company letter dated March 7, 1980 to John F. Ahearne, Chairman NRC, Subject: "BWR Mark I & II Containment Inerting."