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

September 8, 1980

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

Dear Dr. Ahearne:

SUBJECT: ADDITIONAL ACRS COMMENTS ON HYDROGEN CONTROL AND IMPROVEMENT OF CONTAINMENT CAPABILITY

We have responded in a letter of this date to your request for comments on the questions raised by Commissioner Gilinsky in his letter of August 7, 1980. In our discussions accompanying the preparation of that response, it became evident that Commissioner Gilinsky's questions need to be considered within a broader context.

In our letter to you dated December 13, 1979, entitled, "Report on TMI-2 Lessons Learned Task Force Final Report," we stated the following concerning "reliability assessments":

> "The ACRS strongly supports the application of reliability assessments to final designs. The Committee supports the Integrated Reliability Evaluation Program (IREP) which is being initiated by the Office of Nuclear Regulatory Research. However, the Committee does not agree that the proposed IREP will fully satisfy the need. The ACRS recommends that the NRC develop a program in which licensees acting individually or jointly develop reliability assessments of their plants, in addition to the NRC IREP, which should be performed concurrently.
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> "If the reliability assessments were performed in the manner proposed above, it would accelerate obtaining potentially significant safety information and expedite the development of the basis for changes, should they be necessary. It would also provide the operating organizations with better technical insight into the safety of their plants and would provide the benefits to be derived by separate studies of system reliability."

In addition, concerning the topic entitled, "Design Features for Core-Damage and Core-Melt Accidents," we stated the following:

> "The ACRS supports this recommendation. However, the Committee believes that the recommendation should be augmented to require concurrent design studies by each licensee of possible hydrogen control and filtered venting systems which have the potential for mitigation of accidents involving large scale core damage or core melting, including an estimate of the cost, the possible schedule, and the potential for reduction in risk."

The NRC Staff appeared to support this latter recommendation in Task II.B of the Action Plan. However, in the interim rule on degraded core cooling proposed by the NRC Staff in August 1980 and approved for public comment on September 4, 1980, only the study of measures for hydrogen control are requested, leaving other questions of possible improvements in containment design for a rulemaking which appears likely to take some years.

With regard to the reliability assessment of plants in operation or under construction, the NRC Staff appears to be satisfied with an IREP which is moving much more slowly than was being projected in December 1979, when we recommended a major acceleration of such efforts.

If one considers the potential for improving the safety of light water reactors, we believe such consideration will not provide a basis for the rather different priority and emphasis that the NRC is placing on hydrogen control in contrast to the priority and emphasis it is giving to reliability assessment of final design and to a more general approach to improving containment capability.

For many reasons, we believe it is difficult to demonstrate with a high degree of confidence that the frequency of severe core damage or core melt for reactors in operation or under construction is so low that it is not prudent to aggressively pursue measures both to prevent serious accidents and to mitigate them. We believe that the recommendations quoted above from our letter dated December 13, 1979 should be adopted and given priority by the NRC.

Sincerely,

Milton S. Plesset

Milton S. Plesset
Chairman

References

1. Letter from Commissioner V. Gilinsky to M. Plesset, Chairman, Advisory Committee on Reactor Safeguards, dated August 7, 1980

2. Letter from M. Carbon, Chairman, Advisory Committee on Reactor Safeguards, Subject: Report on TMI-2 Lessons Learned Task Force Final Report, dated December 13, 1979