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

December 13, 1979

The Honorable Peter A. Bradford
Commissioner
U. S. Nuclear Regulatory Commission
Washington, DC 20555

Subject: IDENTIFICATION OF NRC REGULATORY REQUIREMENTS WHICH NEED CHANGING

Dear Mr. Bradford:

Your memorandum of September 28, 1979 requests ACRS views on whether the lack of a specific procedure for identifying rules and regulations which need revision has inhibited the Committee. In addition, you asked that the Committee identify any rules and regulations which need to be addressed promptly in order to ensure public health and safety.

In the evaluation of nuclear safety, ACRS review is normally directed to an area of technical interest or concern rather than a specific rule or regulation which may need changing. Resolution of the topic in question may warrant a change in regulatory policy or requirements which in turn can lead to the need for a change in NRC regulatory guides, the NRC Standard Review Plan, or Branch Technical Positions as well as the regulations themselves. The Committee is therefore not in a position to identify specific regulations which need changing. We can however cite several examples of safety related areas which have a direct bearing on the adequacy of NRC regulatory requirements. To the extent practical, we believe that resources should be directed toward making appropriate modifications in relevant regulatory requirements consistent with the recommendations of the Committee in previous reports, letters and memoranda which have addressed these matters in some detail. References to these previous documents are included in the Attachment.

Examples of safety related areas include:

I. Consideration of Accidents Beyond the Limits of the Regulatory Design Basis (including emergency procedures beyond the LPZ);

II. More Widespread Use of Probabilistic Analysis in Decision Making within NRC (including reexamination of the single-failure criterion);

III. Prompt Resolution of ATWS;

IV. The Requirement of Plant Design Changes to Reduce the Possibility and Consequences of Sabotage;

V. Changes in Commission Regulations Providing a Well-Defined Basis on which to Withhold Plant Security Information;

VI. The Introduction into the Licensing Process of Systems Interaction Analysis, not Limited by the Constraints of the Single Failure Criterion, and Including the Effect of Malfunctions of Equipment Heretofore Considered as Non-safety-Related;

VII. Additional Consideration of Small Break LOCA and the Reliability of ECCS;

VIII. Improved Monitoring and Display of Plant Status Information to Assist the Operators in Evaluating and Dealing with Anomalous or Unanticipated Situations;

IX. Reliability Requirements for Systems Important to Plant Safety Including those not Identified as Engineered Safety Features;

X. Systematic Evaluation Program;

XI. Backfitting Criteria;

XII. Feedback of Operating Experience;

XIII. Improvements in Operator Training and Licensing.

Although the ACRS is not inhibited by the lack of a specific procedure from making recommendations it considers appropriate, the lack of adequate "follow-up," including allocation of appropriate NRC resources to do related analysis, evaluation, and research, has in some cases had an inhibiting effect on the Committee in its ability to formulate recommendations regarding specific technical issues. A well defined procedure for ACRS participation in rulemaking would be useful in understanding the roles and responsibilities of the ACRS and the NRC Staff in this area.

The Committee would be pleased to discuss these items in more detail if you desire.

Sincerely,

Max W. Carbon
Chairman

Attachment:
List of Significant References in Support of ACRS Recommendations

LIST OF SPECIFIC REFERENCES IN SUPPORT OF ACRS RECOMMENDATIONS

I) Consideration of Accidents Beyond the Limits of the Regulatory Design Basis

A. Instrumentation to follow the course of a serious accident

1. Letter, Mangelsdorf to Muntzing, August 14, 1973, "Instrumentation to Diagnose the Course of a Serious Accident."

2. "Status of Generic Items Relating to Light-Water Reactors: Report No. 4", April 16, 1976 - Item II-11, Instruments to Follow the Course of an Accident.

3. Report, Moeller to Rowden, October 22, 1976 "Report on Three Mile Island Nuclear Station Unit 2."

4. "Report on Selected Safety Issues Related to Light Water Reactors - Issues 16-27", February 23, 1977, Process Variables During Accidents.

5. Report, Carbon to Hendrie, August 13, 1979, "Short-term Recommendations of TMI-2 Lessons Learned Task Force."

B. Means for Retaining Molten Fuel or a Molten Core

1. Report, Okrent to Seaborg, October 12, 1966, "Report on Reactor Safety Research Program."

2. Memo, Fraley to Shaw, January 11, 1971, "ACRS Comments on a Core Retention System to Mitigate the Consequences of a Core Meltdown."

3. NUREG-0496, "1978 Review and Evaluation of the Nuclear Regulatory Commission Safety Research Program," December 1978, page 3-3.

4. NUREG-0603, "Comments on the NRC Safety Research Program Budget," July 1979, page 1-5.

C. Consideration of Evacuation Plans Outside the Part 100-Defined LPZ

1. Reports to the Chairman, AEC on: Newbold Island 1 and 2, July 17, 1973; Seabrook 1 and 2, December 10, 1974.

2. Letter, Kerr to Gossick, December 10, 1975, "Report on Review of Siting Policies for Licensing Nuclear Facilities."

D. Means to Deal with Large Accumulations of Hydrogen or Other non-Condensible Gases

1. Memoranda on "Status of ACRS Recommendations," as follows:

Fraley to Rusche, March 14, 1977, page 4
Case to Fraley, July 1, 1977, page 6
Fraley to Case, January 18, 1978, page 1
Case to Fraley, April 18, 1978, page A-2, A-3

2. Report, Carbon to Hendrie, April 7, 1979, "Interim Report on Recent Accident at the Three Mile Island Nuclear Station Unit 2."

II) More Widespread Use of Probabilistic Analysis in Decision Making Within NRC

A. Letter, Moeller to Gossick, July 14, 1976.

B. NUREG-0392, "Review and Evaluation of the Nuclear Regulatory Commission Safety Research Program," December 1977 - page 9.6.

C. Report, Carbon to Hendrie, May 16, 1979, "Interim Report No. 3 Three Mile Island Nuclear Station Unit 2."

D. NUREG-0603, "Comments on the NRC Safety Research Program Budget," July 1979, Section 1.2.11.

III) Prompt Resolution of ATWS; in Particular, the Installation of Recirculation Pump Trips in BWRs

A. Report, Hendrie to Seaborg January 27, 1970, "Report on Palisades Plant."

IV) The Requirement of Plant Design Changes to Reduce the Possibility and Consequences of Sabotage

A. Report, Moeller to Rowden, August 17, 1976; "Design Provisions for Protection Against Sabotage."

B. Report, Moeller to Rowden, September 16, 1976, "Clarification of August 17, 1976 ACRS Report on Design Provisions for Protection Against Sabotage."

C. NUREG-0496, "1978 Review and Evaluation of the Nuclear Regulatory Commission Safety Research Program " - page 10-3.

V) Changes in Commission Regulations Providing a Well-Defined Basis on Which to Withhold Plant Security Information

A. Report, Bender to Hendrie, August 18, 1977, "Nuclear Plant Security."

VI) The Introduction into the Licensing Process of Systems Interaction Analysis, not Limited by the Constraints of the Single Failure Criterion, and Including the Effect of Malfunctions of Equipment Heretofore Considered as Non-safety Related

A. Letter, Stratton to Muntzing, November 8, 1974, "System Analysis of Engineered Safety Systems."

B. Letter, Bender to Gossick, June 17, 1977, "Review of Systems Interaction."

C. Report, Carbon to Hendrie, May 16, 1979, "Interim Report No. 3 on Three Mile Island Nuclear Station Unit 2."

D. Letter, Carbon to Gossick, October 12, 1979, "Systems Interactions Study for Indian Point Nuclear Generating Unit No. 3."

E. Memo, Igne to ACRS Members, October 18, 1979, "Evaluation of Potential Interactions Due to High Energy Line Breaks at Salem 2."

VII) Additional Consideration of Small Break LOCA and the Reliability of ECCS

A. Report, Carbon to Hendrie, April 7, 1979, "Interim Report on Recent Accident at the Three Mile Island Nuclear Station Unit 2."

VIII) Improved Monitoring and Display of Plant Status Information to Assist the Operators in Evaluating and Dealing with Anomalous or Unanticipated Situations

A. Memo, Fraley to Commissioners, April 18, 1979, transmitting "Recommendations of the NRC Advisory Committee on Reactor Safeguards regarding the March 28, 1979 Accident at the Three Mile Island Nuclear Station Unit 2."

B. Report, Carbon to Hendrie, May 16, 1979, "Interim Report No. 2 on Three Mile Island Nuclear Station Unit 2."

IX) Reliability Requirements for Systems Important to Plant Safety Including those not Identified as Engineered Safety Features

A. Letter, Moeller to Gossick, July 14, 1976.

B. Letter, Bender to Gossick, March 15, 1977, "Reliability of Power Supplies."

C. Letter, Bender to Gossick, May 15, 1977, "Auxiliary System Reliability."

D. Memo, Fraley to Gossick, March 14, 1979, "Requirements for Shutdown and Decay Heat Removal Using Safety Grade Equipment."

E. Report, Carbon to Hendrie, May 16, 1979, "Interim Report No. 3 on Three Mile Island Nuclear Station Unit 2."

X) Systematic Evaluation Program

A. Report, Okrent to Seaborg, June 14, 1966, "Periodic, Comprehensive (Ten-Year) Review of Operating Power Reactors."

B. Report, Bush to Seaborg, November 17, 1970, "Safety of Operating Reactors."

C. Report, Carbon to Hendrie, October 11, 1979, "Systematic Evaluation Program."

XI) Backfitting Criteria

A. Report, Carbon to Hendrie, May 16, 1979, "Report on Quantitative Safety Goals."

XII) Feedback of Operating Experience

A. "Review of Licensee Event Reports (1976-1978)," NUREG-0572.

XIII) Improvements in Operator Training and Licensing

A. Report, Carbon to Hendrie, May 16, 1979, "Interim Report No. 3 on Three Mile Island Nuclear Station Unit 2."