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

July 14, 1976

The Honorable Morris K. Udall, Chairman
Subcommittee on Energy and the Environment
Committee on Interior and Insular Affairs
United States House of Representatives
Washington, DC 20515

Dear Congressman Udall:

At its 195th meeting on July 8-10, 1976, the Advisory Committee on Reactor Safeguards (ACRS) considered the points raised in your June 14, 1976, letter on the Reactor Safety Study (RSS, WASH-1400, NUREG 75/014). The ACRS reviewed the draft version of the Reactor Safety Study in late 1974 and early 1975 and submitted a report to the Nuclear Regulatory Commission on April 8, 1975. A copy of the ACRS report is attached.

Your letter identified eleven issues on which you requested comment and the Committee is pleased to respond to issues 1, 3, 4, 6, 8, 9 and 10. However, extensive time and effort would be required by the ACRS to respond adequately to the other topics and the needed effort would have to be factored into overall considerations of other ACRS functions, including mandatory review of applications for construction permits and operating licenses for commercial nuclear power plants.

The Committee's responses follow:

1. "The extent that the NUREG 75/014 fault-tree analysis adds to understanding of the likelihood of major nuclear reactor accidents."

The ACRS believes that the fault-tree methodology used in the Reactor Safety Study to develop comparative and quantitative risk assessments for postulated accident sequences represents a valuable contribution to the understanding of the likelihood of major nuclear reactor accidents.

3. "Adequacy of data base for NUREG 75/014 type fault-tree analysis."

As noted in our report of April 8, 1975, the ACRS believes that a better data base will be required to evaluate the validity of the RSS's quantitative estimates of the likelihood of low probability high consequence events, and recommends that current efforts to compile, categorize and evaluate nuclear and other applicable industrial experience be extended in breadth and depth to improve the data base for further studies of this type.

4. "Sensitivity of NUREG 75/014 conclusions to differences in reactor design, in site characteristics, in local meteorological conditions and in population distributions."

All of the factors noted above will have some effect on the probability or consequences of a serious accident. The Committee has recommended that the methodology of the Study be applied to other types and designs of reactors, other site conditions and other accident initiators and sequences. If this is done, it will provide greater insight into the sensitivity of differing reactor designs and safety features.

6. "Adequacy of NUREG 75/014 methodology to take account of gradual degradation of plant safety over plant lifetime."

The Committee believes the methodology is capable of taking into account wear out of components and degradation of equipment over the lifetime of the plant but an appropriate data base needs to be developed.

8. "Need for periodic updating of NUREG 75/014 to take account of new data."

The Committee believes that a continuing effort is desirable in the application of the methodology developed by the Reactor Safety Study not only to factor in new data but also to consider design variations and new concepts.

9. "Need for continuing analysis of NUREG 75/014 for purposes of delineating areas of research and data collection."

The Committee believes that the NUREG 75/014 methodology should be used to aid in delineating areas for further research. Special emphasis should be given to quantification of the initiators, probabilities, and consequences of core melting.

10. "The extent to which NUREG 75/014 can be used to aid development of regulatory policies concerning design, construction, and operations."

The Committee has recommended to the NRC that many of the techniques used in the Study can and should be used by the reactor designers to improve safety and by the NRC Staff as a supplement to their safety assessment.

Sincerely yours,

Dade W. Moeller

Dade W. Moeller
Chairman

Attachment:
Ltr. to Hon. W. Anders from D. W. Moeller, dtd 4/8/75 re: WASH-1400

[*] See pages 3625-3626, Volume VI