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

ACRS-0924

March 18, 1981

Mr. William J. Dircks
Executive Director for Operations
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

SUBJECT: ACRS COMMENTS ON THE OFFICE OF STANDARDS DEVELOPMENT'S RESPONSE TO ACRS COMMENTS AND RECOMMENDATIONS LISTED IN THE ACRS LETTER ON REGULATORY GUIDE 1.97, REVISION 2, DATED NOVEMBER 10, 1980

References:
1. Letter from M. Plesset, ACRS, to W. Dircks, EDO, NRC dated November 10, 1980, Subject: Regulatory Guide 1.97, Revision 2, "Instrumentation for Light-Water-Cooled Nuclear Power Plants To Assess Plant And Environs Conditions During And Following An Accident"

2. Memorandum from G. Arlotto, OSD, NRC to R. Fraley, ACRS dated January 23, 1981, Subject: Regulatory Guide 1.97, "Instrumentation For Light-Water-Cooled Nuclear Power Plants To Assess Plant and Environs Conditions During and Following An Accident"

Dear Mr. Dircks:

In Reference 1, the ACRS concurred in the regulatory positions in Modified Draft 3 of Regulatory Guide 1.97, Revision 2, with one comment, one exception, and one recommendation. These were numbered items 1, 2 and 3, respectively, of Reference 1.

In Reference 2, Mr. Arlotto addressed the response of the Office of Standards Development to the three items in Reference 1. Our further comments on these responses are given below, numbered to correspond with both references.

1. The Staff response to item 1 is satisfactory.

2. We believe that the Staff action in response to item 2 was not responsive to our exception. The requirements for installed instruments to measure, transmit, and display radiation exposure rates in the environs of the plant were stated to be deficient in that they provided inadequate guidance of the type to be expected in a Regulatory Guide. This deficiency applied to the requirements for the instruments no matter what their intended use. Consequently, elimination of these instruments from the list of Type C variables while retaining them in the list of Type E variables does not remove or alleviate the deficiency in the requirements. Our recommendation in Reference 1 has not been resolved.

3. In November 1980, we felt that the time provided for implementation of Regulatory Guide 1.97, Revision 2 was barely adequate, especially if the additional guidance and additional requirements to be provided in NUREG-0696 were to be delayed. At that time, we were told that NUREG-0696 would be issued within a few weeks. In Reference 2, two and a half months later, we have been told that NUREG-0696 will be issued "within a few weeks". In view of this delay, we believe now, even more strongly than before, that the implementation schedule for Regulatory Guide 1.97, Revision 2 is clearly inadequate.

Sincerely,

J. Carson Mark
Chairman

Enclosures:
Reference 1
Reference 2

cc: H. Denton, NRR
R. G. Smith. OSD
G. Arlotto, OSD
W. M. Morrison, OSD
S. J. Chilk, SECY

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

November 10, 1980

Mr. William J. Dircks
Executive Director for Operations
U. S. Nuclear Regulatory Commission
Washington, DC 20555

SUBJECT: REGULATORY GUIDE 1.97, REVISION 2, "INSTRUMENTATION FOR LIGHT-WATER-COOLED NUCLEAR POWER PLANTS TO ASSESS PLANT AND ENVIRONS CONDITIONS DURING AND FOLLOWING AN ACCIDENT"

Dear Mr. Dircks:

During its 247th meeting, November 6-8, 1980, the ACRS completed its review of Revision 2 to Regulatory Guide 1.97. This Guide was reviewed by the Regulatory Activities Subcommittee during its November 5, 1980 meeting. We concur in the regulatory positions embodied in Modified Draft 3, dated November 6, 1980, with the following exceptions and comments:

1. Our concerns regarding the potential usefulness of core thermocouples in BWRs have been resolved to some extent in view of the limited results of a study made by the General Electric Company and presented by the NRC Staff at the meeting. In this regard, the Staff has indicated that the vertical location of these thermocouples in the core has not yet been decided on. From the limited amount of information available to us, it appears that a location close to the top of the core may be desirable, but further detailed consideration of how the information from these instruments will be used will be required before the optimum location or locations can be determined.

2. The requirements for installed instruments to measure, transmit, and display radiation exposure rates in the environs of a plant are deficient in that they provide inadequate guidance. Until suitable guidance, in the form of objectives or performance criteria or in prescriptive terms can be provided, we recommend that these requirements be deleted from the Guide. Once such guidance is available, it can be provided to licensees and applicants in a supplement to the Regulatory Guide, in the Standard Review Plan, in a Branch Technical Position, or by other suitable means.

3. The proposed implementation schedule appears to be barely adequate to permit the design, procurement, qualification, and installation of these instruments in a manner that will not degrade the safe operation

of the plants. Moreover, the design of these instruments is closely linked to and may be influenced by the manner and extent to which they are utilized in the Safety Parameter Display System, Onsite Technical Support Center, Nearsite Emergency Operations Facility, and Nuclear Data Link. For this reason, it is essential that the requirements for these systems, now only tentatively prescribed in NUREG-0696, be decided upon and promulgated promptly. If this cannot be done, the implementation schedule for the Regulatory Guide should be modified accordingly.

Additional comments by Mr. Myer Bender, ACRS Member, are presented below.

Sincerely,

Milton S. Plesset

Milton S. Plesset
Chairman

Additional Comments by Mr. Myer Bender, ACRS Member

While I agree in principle with the requirements of Regulatory Guide 1.97, Revision 2, the Guide has some serious weaknesses that will detract from its value. Not enough thought has been given to the ranges needed for effective use of instruments. In many cases, including the primary coolant system pressure, the ranges are beyond those of use in normal operation and require a separate set of instruments whose reliability is not assured by normal attention as a part of routine operation. The "qualification" requirements are especially of concern because they lead to demands for redundancy, safety system interconnection or isolation, and environmental testing for equipment that has little value for accident diagnosis purposes. Recognizing that one of the lessons from TMI-2 was to avoid confusion due to an excessive number of unusable and confusing instrument displays that hide important diagnostic information, efforts should be made to further reduce the number of instruments and their specialized characteristics required by this Guide through more use of operational instruments and displays already in place. Improved capability could be provided through emergency hookup provisions or by more discriminate selection of parameters of diagnostic value.

References:

1. Regulatory Guide 1.97, Revision 2, Draft 3, dated November 6, 1980, "Instrumentation for Light-Water-Cooled Nuclear Power Plants to Assess Plant and Environs Conditions During and Following an Accident."
2. "Functional Criteria for Emergency Response Facilities," NUREG-0696 dated July 1980 prepared by the Office of Nuclear Reactor Regulation, U. S. Nuclear Regulatory Commission.