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11/9/60

MEMORANDUM FOR CHAIRMAN McCONE  
COMMISSIONER GRAHAM  
COMMISSIONER OLSON  
COMMISSIONER WILSON

SUBJECT: REPORT OF AD HOC COMMITTEE ON REACTOR SAFETY CRITERIA

In December, 1959, I appointed an Ad Hoc Committee to consider what steps could be taken to facilitate development of reactor safety criteria, taking into account suggestions made by the ACRS in its letter of November 16, 1959 (attached as Appendix A).

Attached (as Appendix B) is the report of the Ad Hoc Committee, the recommendations of which are cited below along with comments on each.

"1. We recommend that there be established rules, which may of necessity involve some degree of arbitrariness, by which sites that would be considered acceptable for locations of reactors can be selected."

A draft regulation containing more precise criteria than those issued for comment in May, 1959 is in the final stages of preparation. It was sent to the ACRS for comment. The ACRS comments are contained in letter dated October 22, 1960 (AEC-R 2/16, 10/28/60).

"2. We recommend that the AEC does not at this time attempt to standardize the technical design and construction specifications and procedures for reactors or for the various components of reactors."

I fully concur in the recommendation that there be no attempt to standardize technical design specifications in such a way as to freeze the technology. However, there is a need to develop criteria or guides which, while not attempting to tell applicants how to do their designs, will tell them as precisely as we can how we will view their designs. This is discussed further below.

"3. We recommend that there be initiated a continuing effort within the AEC on the collection and organization of safety guides, or state-of-the-art practices on reactors and reactor components and on a systematic tabulation of safety performance objectives for reactors and reactor components and that these be made available as guides to the nuclear community, but not at this time as regulations."

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Work along these lines began some months ago. A draft regulation on site criteria, noted above, has been developed. Similar work was initiated on containment, control systems, control rods, monitoring systems, waste disposal systems, and operating organization and procedures. Refinement of these earlier efforts has been concentrated in the Special Projects Branch recently established in the Division of Licensing and Regulation.

"4. We recommend that, to inform the general public and to assist applicants in the preparation of information required in support of license applications, there be prepared an explanation of the AEC licensing procedures and a guide or set of instructions, with appropriate illustrations and examples, on the preparation of hazards summary reports, which, to some extent, should follow a standard pattern."

Part of the continuing effort cited in the previous comment was along the lines of this recommendation. The site criteria regulation will contain considerable guidance of the type recommended. An extensive revision of Part 50 containing sections which would amplify and clarify the procedures and requirements has been drafted. This draft regulation also contained sections relating to matters which have been of moment in recent hearing proceedings and is under revision in the light of recent developments; the Commission's decision in the VEBR case will encompass the questions of change procedures and technical specifications and will provide guidance to applicants in those areas.

"5. We recommend that the safety research projects of the AEC, scattered among many administrative units, be brought under the surveillance and co-ordination of one appropriately located person having sufficient authority and staff to achieve appropriate scope and coherence in the program."

The problem here arises from the size and scope of the AEC program, the channelization that occurs from the project approach as compared to the functional approach, and the compounding of these with time lag and classification problems. "The safety research projects" cited are often not recognized as such but rather as a part of a project to develop a better fuel element, component, etc. I doubt the practicability of a co-ordinator if this involved dual administration by imposing a functional approach over a project approach. It is a fact, however, that there is generated in the course of individual projects information of value to the Division of Licensing and Regulation and ACRS in the safety analysis of specific projects and to the kind of effort suggested in Recommendation 3. What is needed is a comparison of existing data and programs with needs or gaps as they appear in the course of hazards evaluations, after which specific steps to augment existing safety research programs can be proposed. Maintaining a continuing effort in this area has been assigned to the Special Projects Branch mentioned above.

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"6. We recommend that the Nuclear Safety Journal receive full-time direction, and support from some appropriate person on the staff of the Commission, that it be increased in frequency to at least 6 issues per year and that it be expanded to include in each issue authoritative monographs or review articles on pertinent reactor safety topics prepared by experts in the field."

The essential point in this recommendation is that there should be freer and more comprehensive flow of information from research projects and experience gained in reactor operation to the nuclear community and it is recommended that the Nuclear Safety Journal is an appropriate medium for this communication. Another recommendation is that monographs on reactor safety ought to be prepared and published, on which point the Committee is unanimous. There is a difference within the Committee on the mechanics and timing owing to disagreement as to the worth of such monographs to the development of criteria. I intend to discuss with the Office of Technical Information and the Division of Licensing and Regulation and other interested staff members the preparation of a set of monographs on pertinent reactor safety topics. The majority report of the Ad Hoc Committee recommends that these monographs be prepared as part of a stepped-up program of publication of the Nuclear Safety Journal. Dr. T. J. Thompson in his separate report recommends that these monographs be prepared as an independent project on somewhat of a crash basis. The choice of methods for this program will require further study by the staff.

"7. We recommend that means be found for making widely available the discussions of the Commission and its Hearing Examiners and the AEC staff analyses and evaluations of safety aspects of projects considered in the regulatory process, and that consideration be given to making more accessible the hazards summary reports."

The applicants' Hazards Summary Reports, the Division of Licensing and Regulation staff analyses (testimony in the hearing cases) and the decisions of the Hearing Examiner and the Commission have always been available. The bulk of material involved is formidable but copies can be obtained (1) for the first listed, from the applicant or from the Public Document Room reproduction services and (2) transcripts of hearings, including the detailed AEC staff analyses, from the Alderson Reporting Service, and (3) decisions of Hearing Examiners and the Commission, from the Office of the Secretary. There has been no interest indicated by any technical or trade journal in reproducing these documents, no doubt because of their bulk. Usually the documents listed are cited or extracted by commercial news letters and trade journals so that their existence is broadcast. To insure that their availability as described above is known, appropriate notices will be distributed to that effect.

General Manager

Enclosures:

Appendix A-ACRS ltr 11/16/59  
Appendix B- Report of Ad Hoc Committee, 9/29/60

SEP 29 1960

A. R. Luedecke, General Manager  
U. S. Atomic Energy Commission  
Washington 25, D. C.

Dear General Luedecke:

The persons whose names are listed below, appointed by you in December, 1959, as an Ad Hoc Committee to review the feasibility and desirability of Commission's developing reactor criteria and standards, and other matters related thereto in the regulatory procedures and practices of the AEC, are pleased to send you attached hereto a copy of the Committee's report. Contained therein are an indication of the scope of our inquiry, our recommendations, and a discussion of each recommendation.

On most of the recommendations, there was unanimous concurrence within the Committee, and in no case did more than one or two members hold views differing from those of the majority. Three members of the Committee have written personal comments relating to one or another of the matters considered by the Committee; these are attached as appendices of the report for your information.

In submitting this report it is our hope that the recommendations and discussions contained therein may be of assistance to you and the regulatory program of the Commission.

Sincerely yours,

Clifford K. Beck  
for the Committee

C. Dalzell  
M. C. Leverett  
R. Lowenstein  
M. M. Mann  
W. E. Nyer  
B. Spinrad  
J. H. Sterner  
T. J. Thompson  
F. Western  
H. Worthington  
C. K. Beck, Chairman

*Appendix B*