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SUMMARY/MINUTES
OF THE ACRS SUBCOMMITTEE MEETING ON
THE SAFETY RESEARCH PROGRAM
APRIL 10, 1985
WASHINGTON, DC

INTRODUCTION

The ACRS Subcommittee on the Safety Research Program held a meeting on Wednesday, April 10, 1985 at 1717 H Street, N.W., Washington, D.C., to discuss a draft report on the NRC Safety Research Program. The entire meeting was open to public attendance. Mr. Sam Duraiswamy was the cognizant ACRS Staff engineer for this meeting. A tentative presentation schedule for the meeting is included in Attachment A. A list of documents submitted to the Subcommittee is included in Attachment B.

ATTENDEES

ACRS: C. P. Siess (Subcommittee Chairman), W. Kerr, J. C. Mark,
C. Michelson, D. Okrent, F. J. Remick, D. A. Ward,
D. W. Moeller (part time), and P. G. Shewmon (part time)

S. Duraiswamy (Cognizant ACRS Staff)

Principal
NRC Speakers: C. Kelber, G. Marino

EXECUTIVE SESSION

Dr. Siess, the Subcommittee Chairman, convened the meeting at 8:35 a.m. and stated that the purpose of the meeting was to discuss Draft 2 of the report entitled, "NRC Safety Research Program," dated December 19, 1984, that was prepared by the Office of Nuclear Regulatory Research (RES) Staff. He said that the Subcommittee had received neither written comments nor requests for time to make oral statements from members of the public.

RES PRESENTATION - DR. C. KELBER

Dr. Kelber said that the purpose of the "NRC Safety Research Program" report is to provide a basis for determining the future size and direction of the safety research program of the NRC. He stated that Based on past experience, the following are anticipated:

- ° As new plants come on line, significant new engineering problems will arise at about the same rate as in the past several years.

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- ° As new standard plants are presented for licensing review, new detailed research investigations will be needed to avoid generic deficiencies.

Therefore, the Staff believes strongly that a base level of funding at about \$165 million/year for a stable, continuous NRC research program is necessary to continue to enable rapid and successful resolution of regulatory problems as they arise. He said that the broad areas within which such problems are expected to arise in the future are as follows:

- ° Mechanisms and significance of aging and degradation in service.
- ° Complex operational and thermal-hydraulic transients.
- ° Risk from severe accidents and the regulatory implications.
- ° Plant operations and risk assessment.
- ° Seismic analysis of designs.
- ° Technical basis for regulation of Low- and High-Level Waste disposal.

Dr. Kelber stated that recently Dr. Ross has sent a letter to the National Research Council requesting their assistance to perform an independent review of the NRC research. If the National Research Council agrees to perform such a review, it is expected to be completed within 9 to 12 months.

DISCUSSION OF THE NRC SAFETY RESEARCH PROGRAM REPORT

The Subcommittee discussed with the RES Staff the need for a Base NRC Research Program and their justifications for such a program included in the Draft NRC Safety Research Program report.

Subcommittee Questions, Comments, Suggestions, and Requests

Some of the questions, comments, suggestions, and requests of the Subcommittee made during the course of the meeting are given below.

Dr. Siess asked how much safer are the plants going to be, and how much benefit is going to accrue to the public and/or utilities, if the existing source term is reduced. Dr. Kelber responded that it might help develop an effective containment criterion for severe-accident cases. As far as enhancing the public safety is concerned, he believes that it will help establish a better basis for emergency actions during a severe-accident case.

Dr. Siess commented that although a reduced source term might help change the evacuation zone, he does not believe that it would improve the public health and safety. He wondered how the NRC could make a strong case for continuing research in this area, especially in view of severe budget constraints.

Dr. Okrent commented that several times in the past the ACRS had recommended that the Staff perform necessary studies to look at what escapes from the containment and at what rate in the event of a severe accident. But, so far no such studies have been done. If something along that line had been done as recommended by the ACRS, he believes that several problems could have been avoided.

With reference to the statement made by Dr. Kelber that, as new standard plants are presented for licensing review, new detailed research investigations will be needed to avoid generic deficiencies, Dr. Okrent asked whether any such investigations had been done for GESSAR-II. Dr. Kelber responded that he believes that something has been done along that line, but he is not sure of the details. He said that Mr. Gillespie would be able to provide the details on this matter.

Indicating that, at an ACRS Subcommittee meeting held in March 1985, one of the representatives of the General Electric (GE) Company said they did not consider Event V in the GESSAR-II design based on the IDCOR conclusion that it cannot happen physically, Dr. Okrent said that he would be interested in knowing whether the NRC Staff agrees with the statement made by the repre-

sentative of GE. Dr. Kelber stated that he would also be interested in knowing whether the Staff agrees with this statement. He mentioned that the Office for Analysis of Operational Data (AEOD) has recently issued a memo on the question of the possibility of Event V in BWRs and he believes that it will be looked at by the Staff.

Mr. Michelson requested a copy of the AEOD memo. (It has been sent to all ACRS Members.)

After further discussion, Dr. Siess commented that the NRC Safety Research Program report seems to be dealing with the ongoing research rather than a base program of research; in his opinion, a clear distinction is not made between these two. If this report is intended to provide arguments for a base program, it should list problem areas rather than the ongoing research. Further, it seems that whenever the research budget is cut, decisions are normally made to continue the ongoing research and to defer or cancel new research that is yet to be started. If this practice continues, he believes that new programs dealing with new issues will never get started. He expressed concern about the lack of attention paid by the Commission to the ACRS comments. He wondered whether the Commission actually discusses the ACRS comments with the Staff prior to making the decisions related to NRC research.

Dr. Siess solicited comments from the Subcommittee on the adequacy of the Draft NRC Safety Research Program report and other related matters.

Dr. Okrent commented that he believes that there is a need for some kind of base research program in NRC. However, he is not sure of the funding level for such a program. Further, the report does not discuss the issue that if there were a base program, there would be perturbations of that program in the future in order to deal with some unexpected specific events. In his opinion, the report does not define clearly a base program. He believes that the overall NRC research should include a base program plus other major items of research.

Dr. Okrent said that regulatory agencies in several other countries perform less research than the NRC. He believes that in several areas the NRC could have rested with the existing regulations, and let the industry perform necessary research to demonstrate that something different from the regulation is acceptable.

Dr. Kerr commented that the ACRS should provide some suggestions to the Staff as to what the base program should include. Further, he believes that the ACRS should comment on whether there should be more Staff with research background to perform certain research in-house or whether they should be chiefly a research management group.

Mr. Ward expressed concern about the NRC's decision to cancel all research in the human factors area. He stated that although the Institute of Nuclear Power Operations (INPO) is doing some work in this area, it is not research. He believes that the NRC should provide leadership in areas that are not pursued by the industry. He suggested that it would be helpful if the topics on Plant Operations and Risk Analysis are discussed separately in the NRC Safety Research Program report.

Dr. Shewmon commented that it would have been better if the Staff had based its argument for a base program by stating that there will be a continuing need for expertise in several areas and the best way to maintain such expertise is through a stable research program.

Mr. Michelson also expressed concern about not performing any research in the human factors area. He commented that it seems that the terminology "Standard Plant" used by the Staff in the NRC Safety Research Program report is actually intended to mean "Standard Design". He suggested that the Staff try to use the right terminology to avoid confusion.

The Subcommittee decided that the ACRS should write a letter to the EDO on the adequacy of the NRC Safety Research Program report. Dr. Siess said that

he would prepare a draft and submit to the full Committee for consideration during the April 1985 ACRS meeting.

FUTURE MEETING

The next Safety Research Program Subcommittee meeting is scheduled for May 8, 1985 to discuss the NRC Safety Research Program and budget for FY 1987. The Subcommittee decided to hear a brief presentation by Mr. Gillespie on research priorities at this meeting.

Dr. Siess thanked all participants and adjourned the meeting at 2:45 p.m.

NOTE: Additional meeting details can be obtained from a transcript of this meeting available in the NRC Public Document Room, 1717 H Street, N.W., Washington, D.C., or can be purchased from ACE-Federal Reporters, 444 North Capitol Street, Washington, D.C. 20001, (202) 347-3700.

April 5, 1985

TENTATIVE PRESENTATION SCHEDULE
ACRS SUBCOMMITTEE MEETING ON THE
SAFETY RESEARCH PROGRAM
APRIL 10, 1985
ROOM 1046, 1717 H STREET
WASHINGTON, DC

ACRS Contact: Sam Duraiswamy (634-3267)

<u>ITEM</u>	<u>SPEAKER</u>	<u>TOTAL PRESENTATION TIME</u>	<u>ACTUAL TIME</u>
1. Introduction	Chester Siess	15 mins.	8:30a - 8:45a
2. Purpose of the Report	Charles Kelber	15 mins.	8:45a - 9:00a
3. Anticipated Research Needs	Charles Kelber	30 mins.	9:00a - 9:30a
4. Research Impact	Charles Kelber	60 mins.	9:30a - 10:30a
--- BREAK ---		15 mins.	10:30a - 10:45a
5. Research in Support of Rulemaking	Charles Kelber	30 mins.	10:45a - 11:25a
6. International Relationships	Charles Kelber	15 mins.	11:15a - 11:30a
7. Conclusions About Future Direction	Charles Kelber	60 mins.	11:30a - 12:30p
8. Priority Considera- tions	Frank Gillespie (Deferred)	30 mins.	12:30p - 1:00p
--- LUNCH ---		60 mins.	1:00p - 2:00p
9. General Discussion - Subcommittee Remarks	Subcommittee	60 mins.	2:00p - 3:00p
ADJOURN			3:00p

ATTACHMENT A

ATTACHMENT B

LIST OF DOCUMENTS SUBMITTED TO THE
SUBCOMMITTEE

1. Draft 2 of the NRC Safety Research Program report dated December 19, 1984.
2. Portion of the 293rd ACRS meeting transcript related to Mr. Dircks' request for ACRS comments on the NRC Base Research Program report.
3. Portion of the December 12, 1984 Safety Research Program Subcommittee meeting minutes pertinent to the discussion of Draft 1 of the NRC Safety Research Program report.
4. Memo from S. Duraiswamy to D. Ross, dated December 21, 1984, transmitting the comments provided by Dr. Moeller on Draft 1 of the NRC Safety Research Program report.
5. Letter from D. Ross, NRC, to R. Kasper, Commission on Physical Sciences, Mathematics, and Resources, National Research Council, dated February 25, 1985.
6. Presentation Material provided by C. Kelber during the April 10, 1985 Subcommittee meeting.