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TUCSON, ARIZONA 85721

COLLEGE OF ENGINEERING
DEPARTMENT OF NUCLEAR ENGINEERING 3 PM 4 00 July 3, 1980

NUCLEAR REG. COMM.
FISORNY COMMITTEE ON
FACTORY SAFEGUARDS

Dr. William Kerr
Nuclear Engineering Department
University of Michigan
Ann Arbor, MI 48103

Dear Bill:

I will make an attempt to respond to your request for input information from Class IX Subcommittee consultants regarding the budget items specifically. I plan to follow up with additional remarks on the Z/IP study and the specifics of the Class IX accident technical assignment later. I understand the need for budget comments is pressing. Under the circumstances the reasons behind some of the comments made may be only incompletely justifiable at this time. Likely further studies by the subcommittee will in some cases further justify some of the comments and in other cases we may find that some re-evaluation is necessary. Nevertheless, I will try to make an appraisal based on what we have.

The climate in which the current budget proposals are being put together is a rather bewildering combination of circumstances and concerns. Certainly it appears that a large and possibly Damoclean reduction in the LM²BR effort is in order. However, we are assured that the activities in this budget category are in any case quite applicable to the Class IX accident prevention and mitigation effort and that a redirection of the facilities and personnel in this area to consider light water reactor problems will now have to be formally recognized in the budget as well as in fact.

At the same time the stated intent in arriving at a rule making position regarding Class IX accidents over the next couple of years, and the likelihood that Z/IP type probabilistic risk assessments will be required of an ever lengthening list taken from the operating reactor community, makes the availability of the kind of information that is promised from the proposed research program a most precious commodity. Finally, the response of the utilities to the Z/IP program is financially large and within the scope of technical information currently available, generally quite impressive from the technical point of view. In these analyses, as well as in the post TMI reviews of that accident, there are genuine holes in the technical bases available to support the studies. The proposed program as recommended purports to address many of these unanswered questions on a timely basis. In this whole spectrum of post-TMI, Z/IP studies, and Class IX rule making preparations, I am most impressed by the performance of the utilities. I have the impression that they are spending a lot of money while directly trying to respond to questions

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that have been raised by the NRC and others. Certainly the acceptance of the probabilistic risk assessment task as a utility responsibility for the Z/IP study represents a significant increase in the expense and magnitude of technical resources that must be committed by the utilities. Furthermore, while the rule making process may sometimes appear slow, it is by nature an inexorable process, and when completed seems almost indelible. Thus, it would appear that a commitment to prompt attention to the areas of technical uncertainty will be both to behave in a manner which is a responsible response to the present level of utility commitment and to provide a timely response of input to the rule making process.

I must also express my general agreement with Dr. Kelber's comments regarding the importance of "keeping the team together." I recognize the often illusory nature of such statements, but it is true that the team he is talking about is experienced in working on the kinds of problems that are pervasive in the Class IX accident prevention and mitigation task. It is important to reflect that while we may not believe that things move very rapidly, we should ask how many would have seriously wagered five years ago that debris bed cooling experiments using the right materials would be currently going on. With these general remarks in mind, I will make a few specific comments.

The fuel melt behavior problem is indeed basic to the Class IX accident mitigation effort and indeed the early stages of fuel melt behavior are important in evaluating the efficacy of intervention at that stage. To not have an appropriate effort in this area is to introduce a high level of speculation as input into investigations in other areas. Accordingly, I believe an effort of the size suggested by RSR is necessary to meet the technical needs and prudent in providing direction to subsequent tasks in the program. This is the largest single area under contention at the present time and really represents the crucial issue insofar as the overall budget.

The request for fission product release and transport studies is modest, considering that significant experiments are being introduced into the program.

Severe accident mitigation is a relatively new task which was given increased impetus in the Z/IP study and the expected needs of the degraded core cooling rule making process. Given the interest that exists and the fact that the program comes from a standing start, the level seems appropriate.

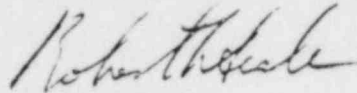
The rest of the items in the detailed budget involve larger considerations which lie beyond the scope of the Class IX subcommittee charge; therefore, I will not comment on them specifically.

I suspect that the truth regarding what we know about how degraded core lies somewhere between the range of opinions that have been stated in the subcommittee meetings. We don't know as much as the optimists would have us believe, but we do know a good bit more than we knew five years ago--

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certainly more than was known at the time of the Ergen Committee. The complex processes have been broken down into appropriate sub-problems and some revealing experiments are in the midst of design or on the threshold of being carried out. I think it is likely that the over all program will cost more than the price tag presently advertised, but I am convinced that the long term price tag, if the fuel melt behavior task isn't conducted in a very deliberate fashion, will be even greater due to the failure to have the answers that would come from the fuel melt behavior program. It appears that NRR and the utilities are in support of these proposed efforts and it is evident that to infringe upon their progress would be in the long run more expensive.

Very truly yours,



Robert L. Seale
Professor and Head
Department of Nuclear Engineering

RLS/dg