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Docket No.: 50-537

Mr. John R. Longenecker  
Acting Director, Office of the  
Clinch River Breeder Reactor  
Plant Project  
Office of Nuclear Energy  
U. S. Department of Energy  
Washington, D. C. 20545

Dear Mr. Longenecker:

SUBJECT: COMMENTS ON CRBR PROBABILISTIC RISK ASSESSMENT PROGRAM PLAN

This letter transmits our comments on the CRBRP Probabilistic Risk Assessment (PRA) Program Plan submitted by your letter to me of June 21, 1982.

The plan was reviewed and our comments discussed informally with your staff during the PRA interaction meeting held on July 23, 1982. Subject to the enclosed comments, we found the plan to be responsive to the NUREG-0718, II.B.8 PRA requirements.

Sincerely,

Original Signed by  
Paul S. Check

Paul S. Check, Director  
CRBR Program Office  
Office of Nuclear Reactor Regulation

Enclosure:  
As stated

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## ENCLOSURE

### STAFF COMMENTS ON THE CRBR PRA PROGRAM PLAN (DATED 6/21/82)

In accordance with NUREG-0718, Requirement II.B.8, the applicant has submitted the CRBR PRA Program Plan (dated June 21, 1982) for staff review and approval. The following comments relate to the content of the planned program and to the effectiveness with which the program of work can be reviewed by the staff and its contractors on an interactive basis.

1. The plan indicates the PRA program to be a major effort, appropriately directed not only to obtaining a numerical assessment of risk but also to applications that can make the PRA process an effective tool for understanding and improving plant safety, as well as for the continued management of risk. We find the ongoing Phase I program being carried out by groups of specialists highly qualified for the CRBR PRA because of their background of experience in PRA methodology, their earlier work in the CRBRP-1 risk study and attendant knowledge of the plant systems, and their experience in LMFBR safety technology.
2. The subject matter delineated in the plan is appropriate, and with due resource allocation given to each topic, the scope and approach taken in the study appear to be reasonably complete.
3. The plan as presented contains no indication of the relative resource allocation, i.e., what fraction of the total effort is to be devoted to each subtopic. This information is important for NRC's interactive review, in ascertaining the appropriateness of the priorities and overall strategy adopted in carrying out the work.

4. The plan also lacks certain details needed for NRC to evolve a cost-effective review plan. The schedule in Figure 4 of the plan is very broad, making it difficult to allocate resources for the review. For example, we need to know details of when various types and quantities of event trees and fault trees will be available. For review purposes a staged submittal of event/fault trees would be preferable to a presentation and review of all the trees at the same time.
5. While these and other such details on work scope and schedule may reasonably not be fully defined at this stage of the program (or, in any case be subject to modification as the work progresses), NRC's review will be furthered by NRC being kept up to date on the status of work and planned changes in direction through the interactive process, (in particular, the informal Stage - 2 format).
6. The schedule of PRA products, as set forth in Figure 4, does not indicate a preliminary draft stage for health effects (site consequences) or for study applications, nor when the work on external events will be initiated and completed.
7. The evaluation of external events has been elsewhere indicated to be included in Phase 2 of the program. This gives rise to the question of whether the work on external events may not have a delayed impact on the work performed earlier. Thus, the external events box in the flowchart (Figure 1) should feed not only into the core and containment phenomenological boxes, but, at a still earlier PRA stage, feed into the fault tree box and

(conceptually) into the accident initiator box. This question is of special interest in view of the results of recent PRA studies showing the seismic contribution to risk to be significant. Some clarification of this question, as well as on the anticipated level of effort, should be included in the program plan.

8. The plan is generally clear in indicating what will be done; in a number of places, however, the text refers to what can be done rather than what is planned to be done. Clarification of these ambiguities is requested.
9. Section 2.2.3, p. 8: The discussion on avenues should include the point that the choice of avenue would be appropriately justified and documented.
10. Section 2.2.5, p. 8: Uncertainties that are not quantified should be qualitatively discussed.
11. Section 2.2.6.2, p. 9: The discussion does not explain how the failure probabilities will be assigned.
12. Section 2.3.1, p. 12-13: There is inadequate information presented on the phenomenological tasks. Knowledge of the codes (or other analytical means) and data to be used for the core and containment accident modelling is needed for a meaningful review of the plan by NRC. (In this regard, the proposed use of CACECO, as against use of the state of art code CONTAIN, is questioned.)

13. Section 2.4, p. 14: The CRAC-2 analysis of site consequences will also include consequences other than health effects.
14. Section 2.5.0, p. 15: The text refers to application tasks which are being considered. However, because the PRA application tasks are of major importance in helping to ensure that substantive safety benefits can be derived from the overall program, we believe the wording in this plan should reflect a definite commitment to their performance,
15. Section 2.5.1, p. 15: The OAET analysis should also include consideration of the time-related aspects for operator actions, the assessment of priorities on actions, estimates of probability for human error, and number of people required to take action.
16. Section 2.5.5, p. 18: With regard to Item 2, is it planned to have TVA operational staff participate in the PRA study in order to provide for integration of PRA results into the operational framework at an early stage?
17. Section 2.5.2, p. 16: This section of the plan should address the specific issue raised in NUREG-0718, II.B.8(1) that consideration must be given to an additional decay heat removal system whose functional requirements and criteria would be derived from the PRA study.
18. Section 2.7, p. 20-21: What is the time-frame for the work on accident delineation? Also, we request clarification on whether the criteria in Item 1 will be quantitative; what the screening process will be for the DBA envelope; and what is planned to be done with the sequences beyond the design basis? We would like to have a topical report on the accident delineation part of the work.