



Franklin Research Center
A Division of The Franklin Institute

February 8, 1982

RECEIVED
ADVISORY COMMITTEE ON
REACTOR SAFEGUARDS, U.S.N.R.

Dr. Max W. Carbon
Professor and Chairman of
Nuclear Engineering Dept.
Engineering Research Building
University of Wisconsin
Madison, WI 53706

FEB 18 1982
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7, 8, 9, 10, 11, 12, 1, 2, 3, 4, 5, 6

Subject: CRBR Subcommittee Meeting, February 2-3, 1982
Washington, D.C.

Dear Dr. Carbon:

This was the first meeting after the review had been interrupted in 1977.

Staff showed the NRR CRBR review organization, set up as a Program Office with licensing and technical review sections.

This review represents the effort toward CP, hence emphasis is placed on criteria rather than on the design approval. Unusual aspect about this review is that significant amount of hardware has already been manufactured.

Two letters summarize the prior history:

1. Denise to Caffey letter (May 6, 1976) provides guidance to the applicant relative to the safety approach, site source term and containment functional requirements.
2. Gamill to Caffey letter (Nov. 19, 1978) provides staffs assessment of the review status at that time.

A significant modification of the design was the change of the core from homogeneous to heterogeneous. This appears to improve breeding ratio and to provide arguments for reduction of the energy release in the case of a CDA. Questions relative to the pressure built-up and leakage rate from the containment after CDA are difficult to resolve and even the factors affecting this result are not all fully understood.

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Dr. Max W. Carbon
University of Wisconsin

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It was agreed that the NRC staff with its contractors will look at the CDA in detail and bring to this Subcommittee a summary describing CDA's problem related status and the list of the important issues yet to be addressed. Target date of May 1, 1982 for Staff technical evaluation of CDA was set.

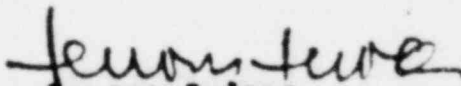
A number of items to be addressed by staff and by applicant were discussed. As a minimum I would suggest that the following question be transmitted to the staff for consideration (this is in addition to the CDA, and the criteria-principal and special).

1. Definition of the construction status of safety related systems and components. This discussion should include reference to the criteria and specifications these components were designed to satisfy.

2. Natural circulation - discussion of basis for conclusion that natural circulation will take place in various loops. Summary of analysis done to date, discussion of tests (such as FFTF and why are the FFTF results applicable to CDA) should be made part of the response.

3. Provide discussion of residual heat removal systems in various modes of operation. This discussion should show heat balances at various points in the system, identify the conditions for operation of heat sinks (such as need for off-site-power, Diesel powered, passive, etc.). The heat balances should be shown as snapshots in time and at the onset of Steady State operation, indicating how much time is needed to reach the Steady State and the temperature reached in various locations at the heat transport equilibrium state.

Very truly yours,


Lenore Sudans
Senior Vice President

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cc: E. Igne, ACRS