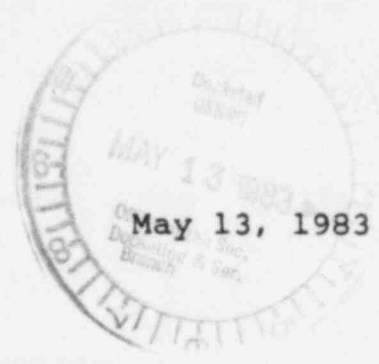


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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:
Marshall E. Miller, Chairman
Gustave A. Linenberger, Jr.
Dr. Cadet H. Hand, Jr.

In the Matter of)
)
)

UNITED STATES DEPARTMENT OF ENERGY)
PROJECT MANAGEMENT CORPORATION)
TENNESSEE VALLEY AUTHORITY)

(Clinch River Breeder Reactor Plant))
)
)

Docket No. 50-537

RESPONSE OF INTERVENORS,
NATURAL RESOURCES DEFENSE COUNCIL, INC., AND THE SIERRA CLUB,
TO NRC STAFF'S SECOND SET OF CONSTRUCTION PERMIT
INTERROGATORIES AND REQUEST FOR ADMISSIONS

Pursuant to 10 CFR §2.740b, and in accordance with the
Board's Construction Permit Scheduling Order of March 29, 1983,
Intervenors, Natural Resources Defense Council, Inc., and the
Sierra Club, hereby respond to NRC Staff's Second Set of
Construction Permit Interrogatories and Request for Admissions,
dated April 27, 1983.

DS03

General Answers

- (a) Direct answers are provided below.
- (b)-(c) Documents other than the PSAR and SER are identified below in the direct response to each question.
- (d) Dr. Thomas B. Cochran is the primary Intervenor employee who provided the answer to each question.
- (e) Intervenors intend to continue their analysis of the SER, PSAR, underlying and related documents.
- (f) Intervenors have not yet identified any such experts.

INTERROGATORIES

General Interrogatory

Intervenors' response to Interrogatories #1(a)-1, 1(a)-2, 1(b)-2, 3(b)-7, 3(b)-8, 3(b)-9, 3(b)-10, 3(b)-11, 3(c)-8, 3(c)-9, 3(c)-10, 3(d)-3, and 3(d)-4 of the NRC Staff First Set of Construction Permit Interrogatories and Requests for Admissions, dated April 8, 1983, stated that these interrogatories could not be answered at this time because Intervenors have not completed their review of the SER. When will Intervenors complete their review of the SER? At that time, please answer the above-listed interrogatories.

General Response

Intervenors cannot say at this time when their review will be complete. Intervenors will complete as much review as

possible prior to filing CP testimony. We have asked the Board for additional time.

Contention 1(b)

Interrogatory

1(b)-1. Clarify Intervenors' response to Interrogatory

1(b)-3 of the NRC Staff First Set of Construction Permit Interrogatories by listing and describing specific methodologies which exemplify the "Scientific method."

Response

1(b)-1. An example of such a methodology would be the approach taken to determine whether one can achieve a violent molten fuel-coolant interaction in a CDA environment in the CRBR. The possibility of MFCI was recognized from evidence involving steel and water. Various hypotheses were proposed to predict the conditions under which violent MFCI might occur where molten fuel and liquid sodium come into contact, e.g., the hypotheses of Fauske and Board and Hall. Experiments were performed to test the hypotheses. New hypotheses were proposed based on new experimental data. Additional tests were performed. The process is continued until one has high confidence that one can predict the events within the prescribed degree of accuracy desired.

Interrogatory

1(b)-2. Intervenors' response to Interrogatory 1(b)-15 of the NRC Staff First Set of Construction Permit Interrogatories stated that Intervenors were unable to find their March 12, 1982, letter and, therefore, unable to respond. That letter is attached to this discovery request. Please answer Interrogatory 1(b)-15.

Response

1(b)-2. No decision has yet been made regarding what information Intervenors will rely upon in this regard beyond evidence presented in Intervenors LWA-1 testimony.

Interrogatory

1(b)-3. What particular features of the CRBR design form the basis of Intervenors' answer to Interrogatory 1(b)-13 of NRC Staff First Set of Construction Permit Interrogatories?

Response

1(b)-3. Primarily the reliance on the vent/purge system to accommodate CDAs. See our LWA-1 testimony.

Contention 3(b)

Interrogatory

3(b)-1. Describe what would, in NRDC's judgment, constitute a sufficiently comprehensive analysis of potential accident initiators, sequences and events to ensure enveloping the DBA spectrum for CRBR?

Response

3(b)-1. Intervenors contend that a necessary but not sufficient condition is a comprehensive PRA. A comprehensive analysis would include other review procedures as well. The analysis must be thorough and accurate.

Interrogatory

3(b)-2. List and describe in detail the "potential common mode system failures" which Intervenors believe require a "comprehensive PRA and common cause failure mode and effects analysis" to be performed, in order to demonstrate that CDAs are not credible, as noted in Intervenors' response to Interrogatory 3(b)-7 of the Staff's First Set of Construction Permit Interrogatories.

Response

3(b)-2. These are any of the common cause failures that affect the overall probability of a CDA. A more complete set of such failures is likely to be revealed in the course of performing a comprehensive PRA. Intervenors cannot predict the outcome of the PRA.

Interrogatory

3(b)-3. Do Intervenors believe it is not possible to demonstrate that CDAs are not credible, as implied in Intervenors' response to Interrogatory 3(b)-7 of the Staff's First Set of Construction Permit Interrogatories?

Response

3(b)-3. Intervenors cannot answer this interrogatory, since we do not know whether this Interrogatory is specific to CRBR and what time period is being addressed. Intervenors do not make this claim for all reactor types.

Interrogatory

3(b)-4. Define "common course failure mode and effects analyses," as used in Intervenors' response to Interrogatory 3(b)-7 of the Staff's First Set of Construction Permit Interrogatories.

Response

3(b)-4. There is a typographical error in Intervenors' response to 3(b)-7 of the First Set of Interrogatories. It should read "common cause failure and failure mode and effects analyses." These terms are defined in WASH-1400 and numerous documents on PRA.

Contention 3(c)

Interrogatory

3(c)-1. Are sodium-concrete interactions associated with core meltdown (following loss of core geometry) the only sodium-concrete interactions which Intervenors assert in Contention 3(c) have not been adequately analyzed by the Staff? If not, please list all sodium-concrete interactions, together with the mechanisms and or sequence of events by which these interactions will occur, which Intervenors contend have not been adequately analyzed by the Staff.

Response

3(c)-1. Yes.

ADMISSIONS

General Admission

Intervenors' response to Admissions 2, 11, 12, 25, 32, 33, 34, 35, and 40 of the NRC Staff First Set of CP Interrogatories and Requests for Admissions, dated 4/8/83, stated that these admissions could not be answered because Intervenors have not completed their review of the SER. In some cases (Admissions 32, 33, 34, 35, and 40) the answer was to be provided as part of the CP testimony. Intervenors are requested to commit to providing answers to these Admissions by May 10, 1983, which is the closing date for discovery as set by the Board in its Construction Permit Scheduling Order.

General Response

Intervenors have not yet completed a review of the SER and cannot answer these admissions. We have asked the Board for additional discovery time.

Admission

1) A probabilistic risk assessment "PRA" is a "scientifically validated procedure," as that term is defined by Intervenors in their April 22, 1983, response to Interrogatory 1(a)-9 of the Staff's First Set of Construction Permit Interrogatories.

Response

1) Intervenors deny this statement. A PRA, for example, that ignores the effects of common cause failures or does not utilize accurate input data would hardly qualify as a scientifically validated procedure.

Admission

2) The CRBR PRA, as described in PSAR Appendix J and SER Appendix D, is a "scientifically validated procedure," as that term is defined by Intervenors in their April 22, 1983, response to Interrogatory 1(a)-9 of the Staff's First Set of Construction Permit Interrogatories.

Response

2) Intervenors can neither admit nor deny this statement, since our analysis of the SER is not complete.

Admission

3) Completion of a PRA for CRBR prior to issuance of the construction permit is not the only acceptable way of ensuring that the PRA results are factored into the design.

Response

3) Intervenors admit this statement.

Admission

4) The Staff's requirement (as stated in the CRBR-SER Appendix C and D) that the CRBR reliability assessment and PRA

must be completed on a time scale which permits impacting the CRBR design, will ensure that the results of the CRBR reliability assessment and PRA are factored into the design.

Response

4) Intervenors deny this statement, since Applicants may not comply with Staff's requirement, and the results of the PRA and CRBR reliability assessment may not be factored into the design regardless of when they are completed.

Admission

5) "Irreversible physical movement of fuel and/or fuel cladding," as that term is used by Intervenors in their response to Interrogatory 3(c)-3 of NRC Staff's First Set of Construction Permit Interrogatories, does not include permanent cladding strain in the CRBR fuel cladding due to the occurrence of the CRBR design basis accidents listed in Section 15 of the CRBR SER, NUREG-0968.

Response

5) Intervenors can neither admit nor deny this statement, since we have insufficient information and have not completed our analysis of NUREG-0968.

Admission

6) The potential for occurrence of human error at CRBR is roughly comparable to that at LWRs.

Response

6) Intervenors can neither admit nor deny this statement without a clearer definition of "roughly." Intervenors note that experience with CRBR is less than that with LWRs and this could impact the relative potential for human error.

Admission

7) Comprehensive probabilistic risk assessment can demonstrate that CDAs are not credible for CRBR.

Response

7) Intervenors can neither admit nor deny this statement. PRA can be used to determine whether or not CDAs are credible, but Intervenors are unable to predict the conclusion of a comprehensive PRA.

Admission

8) The Reactor Safety Study, WASH-1400, was based on two plants, Surry Unit 1 and Peach Bottom Unit 2, which were starting or about to start operation at the time the study was performed.

Response

8) Intervenors admit this statement.

Admission

9) Probabilistic risk assessments can be utilized in the ongoing design and development of nuclear power plant systems, including those for CRBR.

Response

9) Intervenors admit this statement.

Admission

10) It has not been the industry practice to complete the design of nuclear power plant systems before construction is initiated for the nuclear power plant.

Response

10) Intervenors admit this statement.

Admission

11) The Staff does not require that nuclear power plant systems be completely designed prior to issuance of a construction permit for that plant.

Response

11) Intervenors can neither admit nor deny this statement, since it calls for a legal conclusion.

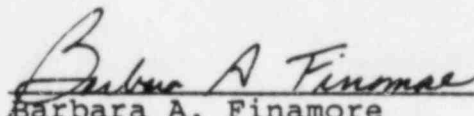
Admission

12) It is feasible to make improvements in CRBR plant systems prior to the completion of construction of CRBR.

Response

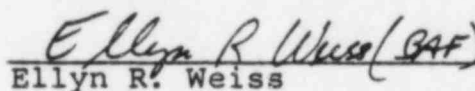
12) Intervenors admit this statement.

Respectfully submitted,



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Dated: May 13, 1983