

RELEASED CORRESPONDENCE

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April 25, 1983

UNITED STATES OF AMERICA '83 APR 25 P4:28
NUCLEAR REGULATORY COMMISSION

BEFORE THE
ATOMIC SAFETY AND LICENSING BOARD

OFFICE OF SECRETARY
DOCKETING & SERVICE
BRANCH

In the Matter of)	
)	
UNITED STATES DEPARTMENT OF ENERGY)	
)	
PROJECT MANAGEMENT CORPORATION)	Docket No. 50-537
)	
TENNESSEE VALLEY AUTHORITY)	
)	
(Clinch River Breeder Reactor Plant))	
)	

APPLICANTS' ELEVENTH SET OF INTERROGATORIES
AND REQUEST FOR ADMISSIONS
TO NATURAL RESOURCES DEFENSE COUNCIL, INC.
AND THE SIERRA CLUB

Pursuant to 10 C.F.R. § 2.740b, the United States Department of Energy and Project Management Corporation, for themselves and on behalf of the Tennessee Valley Authority (the Applicants), submit the following interrogatories to Intervenors, Natural Resources Defense Council, Inc. and the Sierra Club. These interrogatories must be answered fully, within 14 days, in writing and under oath, by one or more representatives of NRDC or the Sierra Club who have personal knowledge of the matters herein.

Unless otherwise indicated, the interrogatories relate to the Clinch River Breeder Reactor Plant design and/or analyses.

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In addition to providing the direct answer to each interrogatory, where applicable, please provide the following:

(a) Identify all documents and studies, and the particular parts thereof, relied upon by Intervenors, now or in the past, which serve as the basis for the answer. In lieu thereof, at Intervenors' option, a copy of such document and study may be attached to the answer.

(b) Identify principal documents and studies, and the particular parts thereof, specifically examined but not cited in (a). In lieu thereof, at Intervenors' option, a copy of each such document and study may be attached to the answer.

(c) Identify by name, title and affiliation the primary Intervenor employee(s) or consultant(s) who provided the answer to the question.

(d) Identify the expert(s), if any, which Intervenors intend to have testify on the subject matter questioned, and state the qualifications of each such expert. This answer may be provided for each separate question or for a group of related questions. This answer need not be provided until Intervenors have in fact identified the expert(s) in question or determined that no expert will testify, as long as such answer provides reasonable notice to Applicants.

ADMISSIONS

1. Applicants' Reliability Program is described in Appendix C to the PSAR and Appendix C of the SER.

2. The Probabilistic Risk Assessment Program plan to be implemented for CRBRP is described in Appendix D of the SER.

3. Intervenors do not have any specific disagreement as to the adequacy of the scope, content, or methodology of the Reliability Program plan described in the PSAR and the SER.

4. Intervenors do not have any specific disagreement as to the adequacy of the scope, content, or methodology of the Probabilistic Risk Assessment Program plan described in the SER.

5. Intervenors disagree with the timing of the PRA Program plan.

6. Intervenors' sole basis for disagreement with the PRA Program plan is that Intervenors believe the PRA must be completed prior to the issuance of a construction permit.

7. Intervenors are not aware of any accident possibilities of greater frequency or consequence than the accident scenarios analyzed by Applicants and Staff in the PSAR and SER, respectively, other than CDA's.

8. Intervenors have done no analysis of any CRBRP accident possibilities of greater frequency or consequence than the accident scenarios analyzed by Applicants and Staff in the PSAR and SER respectively.

9. Intervenors have done no analysis which establishes that it is not possible to obtain sufficient failure mode data pertinent to CRBR systems to validly employ Fault Tree and Event Tree analysis in predicting the probability of CDAs.

10. Intervenors have done no analysis of the probability of CDAs at CRBRP.

11. Intervenors have done no analyses of credible failure modes and human elements.

12. Intervenors have done no analysis demonstrating that CDAs should be considered DBAs.

13. There is no regulatory requirement mandating completion of a PRA prior to issuance of a construction permit.

14. There is no statutory requirement mandating completion of a PRA prior to the issuance of a construction permit.

15. There is no NRC policy requiring completion of a PRA prior to issuance of a construction permit.

16. There is no regulatory requirement mandating completion of a PRA as a prerequisite to the issuance of a construction permit.

17. There is no statutory requirement mandating completion of a PRA as a prerequisite to the issuance of a construction permit.

18. Under current NRC regulatory and statutory requirements, it is not necessary to complete a PRA prior to issuance of a construction permit.

19. The exclusive licensing basis for nuclear plants is contained in current NRC regulatory requirements.

20. Current NRC regulatory requirements contemplate a deterministic approach for reviewing design and operation of a nuclear power plant.

21. Probabilistic risk assessment is not a required part of the deterministic approach for reviewing design and operation of a nuclear power plant contained in NRC regulatory requirements.

22. The Commission considers PRA's to be merely adjuncts to the established regulatory process and NRC's reactor safety regulations in 10 C.F.R. Chapter I.

23. The NRC has not developed any requirements for compliance with any numerical safety goal design objectives that might be approved for individual licensing reviews.

24. Existing NRC requirements are adequate to protect the public health and safety.

25. Existing probabilistic risk analyses for individual nuclear power plants that have already been completed should not be used to draw inferences regarding bottom line safety conclusions at CRBRP.

26. Quantative design objectives are not substitutes for existing NRC regulations.

27. Existing NRC regulations do not provide for quantitative design objectives.

28. The exclusive licensing basis for nuclear power plants is conformance to deterministic NRC regulatory requirements.

29. The qualitative safety goals and quantitative design objectives contained in the Commission's Policy Statement 47 Fed. Reg. 7023 (Feb. 17, 1982) do not require the performance of probabilistic risk assessments by applicants or licensees during the evaluation period.

30. Existing NRC regulatory requirements, which do not require a PRA prior to issuance of a CP, are adequate for purposes of licensing CRBRP construction.

31. NRC deterministic regulatory requirements used for purposes of analyzing the safety of nuclear power plants are adequate for purposes of licensing CRBRP construction.

32. The NRC Staff's deterministic analysis of CRBRP safety is adequate for purposes of licensing CRBRP construction.

33. Intervenors believe that a comprehensive PRA must be completed prior to issuance of a construction permit before one can reliably conclude that a CDA is not credible.

34. Intervenors believe that a comprehensive PRA cannot be completed until the CRBRP reliability test program is completed.

35. The basis for Intervenors' contention 1(b) is that the reliability test program must be completed in order to perform a comprehensive PRA.

36. The basis for Intervenors' contention 3(b) that "neither Applicants nor Staff's analysis of potential accident initiators, sequences, and events are sufficiently comprehensive to assure that analysis of the DBAs will envelope the entire spectrum of credible accident initiator sequences and events" is that CDA's can only be excluded as DBA's after completion of a comprehensive PRA.

37. The basis for Intervenors' contention 3(d) that "neither Applicants nor Staff have adequately identified and analyzed the ways in which human error can initiate, exacerbate or interfere with the mitigation of CRBRP accidents" is that a comprehensive PRA has not been performed for CRBRP.

38. The mechanisms and/or sequences of events by which sodium concrete interactions at CRBR may result are fully described in the SER, Appendix A.

39. The only initiators, sequences, and/or events not enveloped by Applicants' design basis accidents which could lead to reduced heat removal from the core or excess heat generation in the core are core disruptive accidents.

40. Assuming HCDAs are not DBAs, Applicants' and Staff's design basis accidents envelop all potential accident initiators, sequences, events and consequences.

41. Applicants and Staff have adequately analyzed sodium concrete interactions.

42. Applicants and Staff have properly applied the experimental data base to their analysis of sodium concrete interactions.

43. Applicants and Staff's analyses of sodium concrete interactions use reaction rates which exceed experimentally observed values.

44. Intervenors do not contest the applicability of the experimental data used by Applicants and Staff in their analysis of sodium concrete interactions.

45. Intervenors are not aware of any experimental data which shows the values used by Applicants and Staff in their analysis of sodium concrete interactions under predict the reaction rates.

46. Assuming that an HCDA is not a DBA, the bounding loss of pumping power design basis accident is the simultaneous failure of all three pump motors and the subsequent close-down of all three primary pumps.

47. The CRBRP design basis leak represents loss of a very small fraction of the total core flow and thus does not represent a significant reduction of heat removal capability.

48. Assuming an HCDA is not a DBA, the bounding DBA for whole core heat removal due to increased core temperature is the complete and instantaneous stoppage of all heat removal from one intermediate heat exchanger while the reactor is operating at full power.

49. Assuming an HCDA is not a DBA, the bounding DBA which envelops all fuel movement resulting in excessive heat generation is the instantaneous assertion of the maximum possible reactivity from subassembly duct compaction.

50. Other than an HCDA, the only sequence of events which Intervenors believe could challenge the containment at CRBRP would necessarily result from human intervention.

51. Other than HCDA's, Intervenors are aware of no accident initiators sequences or events not included in or enveloped by Applicants design basis accident envelope.

INTERROGATORIES

1. As to any admissions which Intervenors deny, describe or explain in detail the basis for the denial.

(a) Identify all analyses, studies or other data of which Intervenors are aware which support Intervenors' denial.

(b) Identify all documents Intervenors used in responding to this interrogatory.

2. Describe the Reliability Program criteria which Intervenors believe are inadequate.

3. Define the phrase "watered down" as used in Intervenors' Response to Interrogatory 1(b)-9 of Staff's First Set of Construction Permit Interrogatories concerning contentions 1, 2 and 3.

4. Specifically identify each reliability program criteria which Intervenors believe has been "watered down".

5. Specifically identify and describe any and all alternative criteria which Intervenors believe should be used by Applicants in their reliability program.

6. Identify all reliability program criteria which Intervenors believe are "too vague". See Intervenors' Response to Admission 6 of Staff's First Set of Construction Permit Interrogatories and Requests for Admissions to Intervenors.

7. Define the phrase "too vague".

8. As to each criteria which Intervenors believe is "too vague", explain in detail the basis for Intervenors' belief that the criteria is "too vague".

9. Describe in detail any evidence which Intervenors intend to introduce at the construction permit hearings, and which was not produced during the LWA-1 hearings, in support of Intervenors' contention that core disruptive accidents should be included within design basis accidents at CRBRP.

10. Describe in detail any reasons why Intervenors believe that core disruptive accidents should be included as design basis accidents at CRBRP which have not already been included in Intervenors' testimony at the LWA-1 hearings.

11. Describe any analyses of core disruptive accidents performed by Intervenors in addition to Intervenors' testimony introduced at the LWA-1 hearings.

12. Describe in detail any analyses or studies which Intervenor are presently undertaking regarding core disruptive accidents at CRBRP.

(a) If such analyses or studies are not yet complete, provide an estimate of when such analyses or studies will be complete.

13. Identify specifically all errors in the Staff's evaluation of the reliability data for the important safety systems for CRBRP which Intervenor contend they identified at the LWA-1 proceeding. See Intervenor's Response to Admissions 31 of NRC Staff's First Set of Construction Permit Interrogatories and Request for Admissions to Intervenor.

14. Describe in detail all reasons why "Intervenor believe Chapter 15 provides inadequate support" for the conclusion that CDAs should be considered outside the design basis spectrum of accidents. See Intervenor's Response to Admission 36 of NRC Staff's First Set of Construction Permit Interrogatories and Requests for Admissions to Intervenor.

(a) Identify all documented analyses which support Intervenor's belief other than Intervenor LWA-1 Testimony.

(b) Identify all documents which support Intervenor's response to this interrogatory.

15. Describe in detail the basis for Intervenor's statement that "the Staff fails to conservatively analyze CDAs

and their consequences". See Intervenors' Response to Admission 39 Staff's First Set of Construction Permit Interrogatories and Request for Admissions to Intervenors.

16. Specifically identify any experimental data which Intervenors believe shows that Applicants and Staff's sodium concrete reaction rates underpredict reaction rates.

(a) If Intervenors are aware of no such experimental data, please so specify.

17. Describe all human errors during reactor operation of which Intervenors are aware which could modify fuel assembly ducts as stated in response to interrogatory 13 of Applicants' Ninth Set of Interrogatories.

(a) Identify all documents which support Intervenors' response to this interrogatory.

18. State whether Intervenors have any basis for concluding that the reactor shut-down systems will not operate as intended.

(a) If Intervenors have such basis, describe it in detail.

(b) Identify all documents which support Intervenors' response to this interrogatory.

19. Do Intervenors have any criticisms of the design of the reactor shut-down systems for CRBRP. If so, describe in detail these criticisms.

(a) Identify all documents which support Intervenor's response to this interrogatory.

20. Do Intervenor's have any criticisms of the design of the shutdown heat removal systems. If so, describe in detail these criticisms.

(a) Identify all documents which support Intervenor's response to this interrogatory.

21. Describe any common cause failures of which Intervenor's are aware which would preclude the direct heat removal system from removing shut-down heat in the event the three heat transport systems are simultaneously incapable of removing the shut-down heat.

22. Describe in detail the basis for Intervenor's statement that "the three primary loops are not diverse."

(a) Identify all documents which support Intervenor's response to this interrogatory.

23. Describe the other "physical phenomena" involved in crack growth referred to in Intervenor's Response 29 to Applicants' Ninth Set of Interrogatories.

24. Describe in detail all ways of which Intervenor's are aware in which human intervention could result in loss of containment as stated in Response 35 to Applicants' Ninth Set of Interrogatories.

25. Do Intervenors agree that it is feasible to design a vent and clean-up system which will perform adequately under CDA conditions.

(a) If Intervenors disagree, describe in detail the basis for Intervenors' disagreement.

(b) Identify all documents which support Intervenors' response to this interrogatory.

26. Do Intervenors agree that the design of the vent and clean-up system for CRBRP as set forth in the SER will perform adequately under CDA conditions.

(a) If Intervenors disagree, describe in detail the basis for Intervenors' belief.

(b) Identify all documents which support Intervenors' response to this interrogatory.

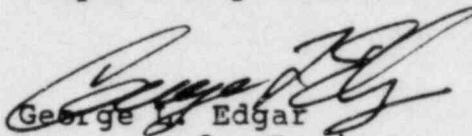
27. Identify the precise analyses in Appendix A of the SER referred to in Intervenors' response to Staff's interrogatory 9-26, NRC Staff's First Set of Construction Permit Interrogatories and Request for Admissions Concerning Contention 9.

28. With regard to Dr. Cochran, Senior Staff Scientist, Natural Resources Defense Council, please provide a specific description of all relevant education and experience which Intervenors believe qualify him as an expert in

- (a) emergency planning,
- (b) CRBRP accident analysis,
- (c) CRBRP HCDA analysis,

- (d) sodium concrete interaction,
- (e) reliability analysis,
- (f) Fault Tree/Event Tree analysis,
- (g) probabilistic risk assessment,
- (h) containment analysis under HCDCA conditions.

Respectfully submitted,



George L. Edgar
Attorney for Project
Management Corporation

b.

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

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USNRC

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UNITED STATES DEPARTMENT OF ENERGY
PROJECT MANAGEMENT CORPORATION
TENNESSEE VALLEY AUTHORITY
(Clinch River Breeder Reactor Plant)

OFFICE OF SECRETARY
DOCKETING & SERVICE
BRANCH

Docket No. 50-537

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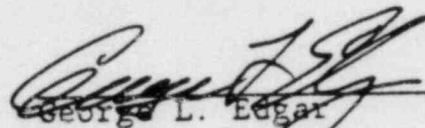
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DATED: April 25, 1983

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