

Interrogatories

CONTENTION 11 (ALARA)

1. Identify and describe in detail all analyses, statements and conclusions contained in Chapters 11 and 12 of the PSAR with which you are in disagreement. The response to this interrogatory must include a detailed description or explanation of all bases for Intervenor's disagreement.

a. As to each such analysis, statement or conclusion, describe all analyses performed by Intervenor's which support Intervenor's position.

b. Identify any documents which support the bases for Intervenor's disagreement.

2. Identify and describe in detail all analyses, statements and conclusions contained in Chapters 11 and 12 of the SER with which you are in disagreement. The response to this interrogatory must include a detailed description or explanation of all the bases for Intervenor's disagreement.

a. As to each such analysis, statement or conclusion describe all analyses performed by Intervenor's which support Intervenor's position.

b. As to each such analysis, statement or conclusion, identify any documents which support Intervenor's position.

3. State whether Intervenor's agree with the source terms contained in Chapter 11 and 12 of the PSAR.

a. If Intervenors disagree with any of the source terms, describe in detail the bases for the disagreement including a description of any changes in methodology or data which Intervenors believe would be appropriate.

b. Identify any documents which support Intervenors' response to this interrogatory.

4. In considering occupational exposures at CRBRP, identify the nuclides which Intervenors believe are of importance.

a. As to each nuclide identified above, state the basis for Intervenors' belief that it is of importance in considering occupational exposures at CRBRP.

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

5. State whether Intervenors believe that Reg. Guides 8.8 and 8.19 provide appropriate methods, approaches and objectives for ensuring that occupational radiation exposures at CRBRP will be as low as is reasonably achievable.

a. If Intervenors disagree, describe in detail the methods, approaches, and objectives which Intervenors believe should be used for ensuring that occupational radiation exposures at CRBRP will be ALARA. The answer to this interrogatory must include a detailed description of the bases for Intervenors' alternate methods, approaches or objectives.

b. If Intervenors agree with any or all of the methods, approaches, and objectives, identify specifically those with which Intervenors agree.

c. Identify all documents which support Intervenor's response to this interrogatory.

6. Identify any design objectives or limiting conditions contained in 10 C.F.R. § 50, Appendix I which Intervenor believes may not be appropriately applied to CRBRP.

a. As to each design objective or limiting condition identified above, describe in detail the basis for Intervenor's belief that it cannot be applied to CRBRP.

b. Describe in detail any alternate design objectives or limiting conditions which Intervenor contends should be applied to CRBRP, including the basis for the alternative.

c. Identify any documents which support Intervenor's response to this interrogatory.

7. State whether Intervenor agrees that the calculation of public exposures over a 50 mile radius from CRBRP is appropriate for purposes of determining that radiation exposures to the public are ALARA.

a. If Intervenor disagrees, identify the geographic area which Intervenor believes should be considered and describe in detail the basis for that geographic area.

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

8. State whether Intervenor agrees that in calculating public exposures, a fifty year dose commitment factor is appropriate for purposes of determining that radiation exposures to the public due to normal operation of CRBRP are ALARA.

a. If Intervenor's disagree, identify the dose commitment period which Intervenor's believe should be considered and describe in detail the basis for that period.

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

9. State whether Intervenor's agree that no plutonium will be released offsite during normal operation of CRBRP including expected operational occurrences.

a. If Intervenor's disagree, describe the precise events which Intervenor's believe will result in the release of plutonium and describe the release pathway which will result in the offsite release of plutonium during normal operation of CRBRP.

10. State whether Intervenor's agree that about 90 percent of the tritium generated at the reactor will diffuse through the cladding into the sodium coolant, where it will be removed by sodium cold traps.

a. If Intervenor's disagree, describe in detail the basis for the disagreement and specify the percentage of tritium which Intervenor's contend will be removed by sodium cold traps.

b. Identify any documents which support Intervenor's response to this interrogatory.

11. Identify any design alternatives not presently incorporated in CRBRP which Intervenor's contend should be incorporated in CRBRP's design in order to meet the ALARA objective.

a. As to each design alternative, describe the purpose of the alternative, the cost of the alternative and the likely

reduction in radiation exposure which will result if the alternative is incorporated in the CRBRP design.

b. Are Intervenor aware of any design alternatives, other than those identified in Regulatory Guide 1.110 which they contend should be incorporated in CRBRP's design in order to meet the ALARA objective?

c. Identify all documents which support Intervenor's response to this interrogatory.

12. Describe in detail any procedures not already planned for CRBRP which Intervenor contend should be implemented in order to ensure that occupational radiation exposures at CRBRP are ALARA.

a. As to each such procedure, describe the cost of implementation and the likely reduction in radiation exposures which would result from its implementation at CRBRP.

b. Identify all documents supporting Intervenor's response to this interrogatory.

13. Describe in detail Intervenor's understanding of the controlling mechanisms and rates for the movement of fission products, plutonium, and corrosive products in CRBRP from the sodium coolant to the cover gas during normal operation.

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

14. State whether Intervenor believe that significant (non-negligible) direct radiation exposure ("shine" exposure) is likely to occur either on-site or off-site as a result of normal operation of CRBRP, including expected operational occurrences.

a. If so, describe in detail the sequence of events which would lead to significant (non-negligible) direct radiation exposure during normal operation, including expected operational occurrences.

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

15. Describe in detail the dosimetric models which Intervenor believes should be used for each organ in calculating occupational and public exposures due to normal operation of CRBRP including expected operational occurrences.

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

16. State whether Intervenor disagrees with the calculation of releases due to liquid radwaste, gaseous radwaste or solid radwaste contained in the PSAR.

a. If so, describe in detail the basis for Intervenor's disagreement including a description of any analysis performed by Intervenor, if any.

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

17. State whether Intervenor agrees that the cold boxes planned for CRBRP to control releases represent the most advanced state of technology.

a. If Intervenor disagrees, describe the technology which Intervenor believes should be incorporated in CRBRP in place of the cold boxes for controlling releases.

b. Identify all documents which support Intervenor's

response to this interrogatory.

18. Identify all documents which Intervenor intend to rely upon at the Construction Permit hearing in addressing Contention 11 (ALARA).

19. Identify all experts Intervenor intend to call as witnesses at the Construction Permit hearing on Contention 11 (ALARA).

a. As to each such expert, provide the following information:

- (1) educational background;
- (2) employment background;
- (3) a listing of all nuclear plants reviewed by the expert for purposes of ALARA;
- (4) a listing of all hearings in which the expert appeared as an ALARA witness;
- (5) a listing of all articles, books studies or other documents prepared by the expert on the ALARA objective.

20. With regard to Dr. Thomas Cochran, provide the information requested in Interrogatory 19.

Response

Intervenor hereby withdraw Contention 11(a) from consideration at the CP licensing stage; consequently, responses to these interrogatories are not given. Intervenor reserve the right to raise limited ALARA issues at the Operating License (OL) hearing; for example, regarding establishment of dose guidelines for

female workers to protect the fetus, and establishment of age-specific occupational dose guidelines to reduce genetic and somatic risks. We believe these are more appropriate OL, rather than CP, issues.

CONTENTION 9 (Emergency Planning)

Interrogatory

21. Identify any statements, analyses, or conclusions in the PSAR, Chapter 13, Emergency Planning, with which Intervenor's disagree.

a. As to each statement, analysis or conclusion identified above, describe in detail the basis for Intervenor's disagreement.

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

Response

To the best of Intervenor's knowledge most of Chapter 13 is irrelevant to Contention 9 (Emergency Planning). Our comments are limited to PSAR Section 13.3. There are many statements on pp. 13.3-1 to 13.3-9 that use the terms "...will be..." or "...will ensure...", or "...will..." Intervenor is unable to either agree or disagree with these statements because they either (a) call for a legal conclusion, (b) are predictive in nature and we have no basis for knowing whether they will occur, or (c) we have insufficient information to make a reasoned judgment. With regard to the remainder of 13-1 to 13-2, and all of pp. 13-10 to 13-13, Intervenor has no basis for agreeing or disagreeing with these sections. Regarding the analysis in

Section 13.3A, our criticisms of the SSST analysis given at the LWA-1 hearings are applicable. In addition, we do not agree that assuming no fallout during cloud passage is necessarily conservative for strong gamma emitters such as Na-24, because of the potentially high dosage associated with groundshine from fallout of these nuclides. Intervenors also note the lack of PAGs for bone exposure. These comments should be considered preliminary as our analysis of PSAR Section 13.3 is not yet completed.

Interrogatory

22. Identify any statements, analyses, or conclusions in the SER, Chapter 13, Emergency Planning, with which Intervenors disagree.

a. As to each statement, analysis or conclusion identified above, describe in detail the basis for Intervenors' disagreement.

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

Response

Based on our preliminary assessment of SER Section 13.3, Intervenors disagree with the statement that: "the plume exposure pathway emergency planning zone (EPZ) established for the CRBR site is about 10 miles in radius." We do not believe this EPZ is established. We disagree with the treatment of CDAs as outside the design basis, and with the radiological analysis of the SSST, as indicated in the LWA-1 proceeding and Intervenors' LWA-1 evidence. We also disagree with the statement that "[t]he use of the SSST is conservative, since it envelopes the most serious design-basis accidents analyzed in the PSAR. Our

disagreement is for reasons detailed in our LWA-1 evidence.

Our comments regarding the predictive statements, e.g. "...will..." in response to Interrogatory 21 apply here as well. Intervenors are unable to agree or disagree with these conclusory statements by the Staff because they call for a legal conclusion or because we have insufficient information to make a reasoned judgment. We don't disagree that the Staff reached these conclusions.

Interrogatory

23. Describe in detail the methodology which Intervenors believe should be used in developing a bone dose value for evacuation Protective Action Guides (PAG).

- a. Describe in detail any analyses, calculations or studies performed by Intervenors in developing a bone dose PAG.
- b. Identify all documents used by Intervenors in responding to this interrogatory.

Response

Intervenors have not yet decided what methodology is appropriate.

Interrogatory

24. Describe in detail the basis for the statement in Contention 9(a) that the PSAR contains "insufficient information."

- a. Describe in detail the information which Intervenors believe was omitted from the PSAR.
- b. Describe in detail the information which Intervenors believe is insufficient in the PSAR.
- c. Identify all documents which support Intervenors' response to this interrogatory.

Response

Intervenors hereby withdraw Contention 9(a) from consideration at the CP licensing stage, and therefore no response is necessary.

Interrogatory

25. Describe in detail the local emergency response needs and capabilities which Applicants have "failed to account properly for" as stated in Contention 9(b).

a. In responding to this interrogatory, separately provide a description of:

(1) the identity of the local communities whose response needs and capabilities were not properly accounted for.

(2) As to each community, the precise needs and capabilities not properly accounted for.

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

Response

Intervenors hereby withdraw Contention 9(b) from consideration at the CP licensing stage, and therefore no response is necessary.

Interrogatory

26. Describe in detail the boundaries for the plume exposure pathway and ingestion pathway EPZ's which Intervenors contend should be adopted at CRBR.

a. Identify any documents supporting Intervenors' response to this interrogatory.

Response

360°. Due to lack of information available on doses and ground contamination levels, a function of distance following CDAS, Intervenors are unable at this time to determine an

appropriate EPZ distance for plume exposure. Intervenors do not object to a 50-mile ingestion EPZ.

Interrogatory

27. Describe in detail any "major impediments to the evacuation or taking of protective action" in the event of an accident at CRBRP. (See Contention 9(c)).

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

Response

The potential for high doses following a CDA prior to completion of evacuation.

(a) SER, Appendix A of evacuation times.

Interrogatory

28. Describe in detail the basis for Intervenors' Contention 9(c) that the PSAR contains "insufficient analysis of the time requirement to evacuate various sectors and distances within the plume exposure pathway EPZ for transient and permanent population." The response to this interrogatory must identify the portion(s) of the analysis with which Intervenors disagree and a description of the precise nature of Intervenors' disagreement.

a. Describe any analysis undertaken by Intervenors of the time required for evacuation.

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

Response

The PSAR analysis of evacuation times is limited to a 10-mile EPZ.

a. None to date.

b. PSAR, p. 13.3A-3.

Interrogatory

29. Describe in detail the basis for Intervenor's Contention 9(d) that the PSAR contains "insufficient information."
- a. Describe the types or categories of additional information which Intervenor believes are necessary to ensure the "compatibility of proposed emergency plans ... with facility design features."
 - b. Describe the types or categories of additional information which Intervenor believes are necessary to ensure the "compatibility of proposed emergency plans ... with site layout."
 - c. Describe the types or categories of additional information which Intervenor believes are necessary to ensure the "compatibility of proposed emergency plans with ... site location."
 - d. Identify all documents which support Intervenor's response to this interrogatory.

Response

Intervenor hereby withdraw Contention 9(d) from consideration at the CP licensing stage, and therefore no response is necessary.

Interrogatory

30. Describe in detail the basis for Intervenor's Contention 9(e) that the PSAR contains "insufficient information."
- a. Describe the types or categories of information which Intervenor contends must be in the PSAR in regard to:
 - (1) authorization procedures;
 - (2) notification procedures;
 - (3) instruction procedures.

Response

Intervenor hereby withdraw Contention 9(e) from consideration at the CP licensing stage, and therefore no response is necessary.

Interrogatory

31. Describe in detail the basis for Intervenor's Contention that "special measure" must be taken into account in CRBRP's emergency plan "to cope with a CDA."

- a. Define the word "increased" as used in Contention 9(f).
- b. Describe in detail the basis for Intervenor's contention that "protective, evacuation and monitoring measures" must be "increased."
- c. Describe the precise "protective measures that should be "increased."
- d. Describe the precise evacuation measures which should be "increased."
- e. Describe the precise monitoring measures which should be "increased."
- f. Describe the "increased" protective measures which Intervenor believes are necessary at CRBRP.
- g. Describe the "increased" evacuation measures which Intervenor believes are necessary at CRBRP.
- h. Describe the "increased" monitoring measures which Intervenor believes are necessary at CRBRP.
- i. Define the term "reduced" as used in Contention 9(f).
- j. Explain why Intervenor believes there will be "reduced response time" at CRBRP.
- k. Describe the "special protective action levels" which Intervenor believes are necessary for CRBRP.

Response

Two principal bases for Intervenor's Contention 9(f) are:

(1) The time period available for evacuation is too short under some scenarios. Since the available evacuation time can not be confidently predicted in advance of a CDA, unlike the TMI accident, it would be prudent to call for full evacuation as soon as a core melt-through appears imminent. (2) The potentially short evacuation time, release of plutonium and large quantities of Na-24, and the need to maintain a limited workforce at nearby facilities may require offsite decontamination facilities and public education on decontamination procedures.

- a. The term "increased" as used by Intervenor in Contention 9(f) is synonymous with "additional."
- b.-h. See discussion above.

- i. The term "reduced" as used by Intervenor in Contention 9(f) is synonymous with "shorter."
- j. See SER Appendix A.4 and Attachment 1.
- k. Intervenor believes it is necessary to establish PAGs for bone dose and guidelines for ground contamination levels for (a) evacuation, (b) reentry and (c) rehabilitation.

Interrogatory

32. Identify any experts who Intervenor intend to call as witnesses in support of Contention 9.

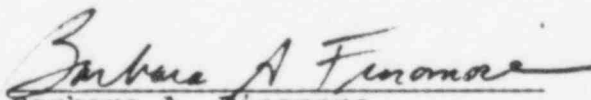
a. As to each such expert, provide the following information:

- (1) educational background;
- (2) employment background;
- (3) a listing of all emergency plans for nuclear power plants reviewed by such expert;
- (4) a listing of all hearings in which the expert has testified as a witness on emergency planning at nuclear power plants;
- (5) a listing of all articles, books, studies or other documents prepared by the expert on emergency planning;
- (6) a listing of all emergency plans for nuclear plants prepared by the expert in whole or in part.

Response

No decision has been made to date in this regard.

Respectfully submitted,


Barbara A. Finamore

Natural Resources Defense Council
1725 I Street, NW, Suite 600
Washington, D.C. 20006
(202) 223-8210

Attorney for Intervenor Natural
Resources Defense Council and
Sierra Club

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.

Docket No. 50-537

(Clinch River Breeder Reactor)

AFFIDAVIT OF THOMAS B. COCHRAN

1. I am employed as a Senior Staff Scientist by the Natural Resources Defense Council, Inc., and, as such, I am duly authorized to execute the foregoing answers to interrogatories.

2. The foregoing answers are true and correct to the best of my knowledge and belief.

Thomas B Cochran
Dr. Thomas B. Cochran

Subscribed and sworn to before me
this 14th day of April 1983.

Anna Marie Shilcox
Notary Public

My Commission Expires July 31, 1997

CERTIFICATE OF SERVICE

I hereby certify that copies of RESPONSE OF INTERVENORS
NATURAL RESOURCES DEFENSE COUNCIL, INC., AND SIERRA CLUB TO
APPLICANTS' EIGHTH SET OF INTERROGATORIES DATED APRIL 1, 1983
were served this 14th day of April 1983 by hand* or by first
class mail upon:

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DOCKETING & SERVICE
BRANCH
- * Marshall E. Miller, Esq.
Chairman
Atomic Safety & Licensing Board
U.S. Nuclear Regulatory Commission
4350 East West Highway, 4th floor
Bethesda, MD 20014
 - * Gustave A. Linenberger
Atomic Safety & Licensing Board
U.S. Nuclear Regulatory Commission
4350 East West Highway, 4th floor
Bethesda, MD 20014
 - * Sherwin E. Turk, Esq.
Stuart Treby, Esq.
Geary S. Mizuno, Esq.
Elaine I. Chan, Esq.
Office of Executive Legal Director
U.S. Nuclear Regulatory Commission
Maryland National Bank Building
7735 Old Georgetown Road
Bethesda, MD 20014
 - * Atomic Safety and Licensing Appeal Board
U.S. Nuclear Regulatory Commission
1717 H Street, NW, Room 1121
Washington, D.C. 20555
 - * Atomic Safety & Licensing Board Panel
U.S. Nuclear Regulatory Commission
1717 H Street, NW, Room 1121
Washington, D.C. 20555
 - * Docketing & Service Section
Office of the Secretary
U.S. Nuclear Regulatory Commission
1717 H Street, NW, Room 1121
Washington, D.C. 20555 (3 copies)

* Indicates hand delivery.

Certificate of Service - 2

* R. Tenney Johnson, Esq.
Leon Silverstrom, Esq.
Warren E. Bergholz, Jr., Esq.
William D. Luck, Esq.
Office of General Counsel
U.S. Department of Energy
1000 Independence Ave., SW, Rm. 6A245
Washington, D.C. 20585

* George L. Edgar, Esq.
Irvin N. Shapell, Esq.
Thomas A. Schmutz, Esq.
Gregg A. Day, Esq.
Frank K. Peterson, Esq.
Morgan, Lewis & Bockius
1800 M Street, NW, 7th Floor
Washington, D.C. 20036

Dr. Cadet H. Hand, Jr., Director
Bodega Marine Laboratory
University of California
P.O. Box 247
West Side Road
Bodega Bay, CA 94923
(Federal Express Mail)

Herbert S. Sanger, Jr., Esq.
Lewis E. Wallace, Esq.
James F. Burger, Esq.
W. Walker LaRoche, Esq.
Edward J. Vigluicci, Esq.
Office of the General Counsel
Tennessee Valley Authority
400 West Summit Hill Drive
Knoxville, TN 37902

William M. Leech, Jr., Esq.,
Attorney General
William B. Hubbard, Esq.,
Chief Deputy Attorney General
Michael D. Pearigen, Esq.
State of Tennessee
Office of the Attorney General
450 James Robertson Parkway
Nashville, TN 37219

Lawson McGhee Public Library
500 West Church Street
Knoxville, TN 37219

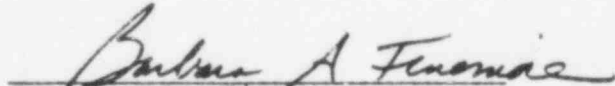
Certificate of Service - 3

William E. Lantrip, Esq.
City Attorney
Municipal Building
P.O. Box 1
Oak Ridge, TN 37830

Oak Ridge Public Library
Civic Center
Oak Ridge, TN 37830

Joe H. Walker
401 Roane Street
Harriman, TN 37748

Commissioner James Cotham
Tennessee Department of Economic and
Community Development
Andrew Jackson Building, Suite 1007
Nashville, TN 32219


Barbara A. Finamore