

April 15, 1982

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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

NATURAL RESOURCES DEFENSE COUNCIL, INC.
AND THE SIERRA CLUB EIGHTEENTH
SET OF INTERROGATORIES AND
REQUEST TO PRODUCE TO APPLICANTS

Pursuant to 10 CFR § 2.740b, and in accordance with the Board's Prehearing Conference Order of February 11, 1982, Intervenor, Natural Resources Defense Council, Inc. and the Sierra Club, request that the attached interrogatories be answered fully, in writing and under oath, by one or more officers or employees of Applicants who has personal knowledge

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or is the closest to having personal knowledge thereof. If the interrogatories are answered by more than one person, whether or not he or she verified the answers, and whether or not he or she is an officer or employee of any of the Applicants, such person's name and title should be set forth together with an identification of which interrogatories he or she is responsible for.

Unless otherwise indicated, each question is addressed to all Applicants. In each question to all Applicants, each of the multiple Applicants is instructed to provide a separate answer. However, when all Applicants are in agreement on a response, only one uniform answer need be given.

Each answer to an interrogatory shall be preceded by a copy of the particular question to which the answer is responding. Each question is instructed to be answered in six parts, as follows.

Answer to Question _____:

- (a) Provide the direct answer to the question.
- (b) Identify all documents and studies, and the particular parts thereof, relied upon by Applicants, now or in the past, which serve as the basis for the answer. In lieu thereof, at Applicants' option, a copy of such document and study may be attached to the answer.
- (c) Identify principal documents and studies, and the particular parts thereof, specifically examined but

not cited in (b). In lieu thereof, at Applicants' option, a copy of each such document and study may be attached to the answer.

- (d) Identify by name, title and affiliation the primary Applicant employee(s) or consultant(s) who provided the answer to the question.
- (e) Explain whether Applicants are presently engaged in or intend to engage in any further, ongoing research program which may affect Applicants' answer. This answer need be provided only in cases where Applicants intend to rely upon ongoing research not included in Section 1.5 of the PSAR at the LWA or construction permit hearing on the CRBR. Failure to provide such an answer means that Applicants do not intend to rely upon the existence of any such research at the LWA or construction permit hearing on the CRBR.
- (f) Identify the expert(s) if any, which Applicants 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 Applicants 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 Intervenor.

In identifying documents which serve as a basis for or pertain to any answer, the Applicants should treat certain interrogatories, where so stated, as a request, pursuant to 10 CFR § 2.741, that the Applicants produce and permit Intervenor to inspect and copy such documents at such time and in such manner as may be agreed upon by the parties.

Definitions

As used in these Interrogatories, the following terms shall have the following meanings:

- A. "CRBR" means the Clinch River Breeder Reactor.
- B. "Document" means any papers, photographs, criteria, standards of review, recordings, memoranda, books, records, writings, letters, telegrams, mailgrams, correspondence, notes and minutes of meetings or of conversations or of phone calls, interoffice, intra-agency or interagency memoranda or written communications of any nature, recordings of conversations either in writing or upon any mechanical or electronic or electrical recording devices, notes, exhibits, appraisals, work papers, reports, studies, opinions, surveys, evaluations, projections, hypotheses, formulas, designs, drawings, manuals, notebooks, worksheets, contracts, agreements, letter agreements, diaries, desk calendars, charts, schedules, appointment books, punchcards and computer

printout sheets, computer data, telecopier transmissions, directives, proposals, and all drafts, revisions, and differing versions (whether formal or informal) of any of the foregoing, and also all copies of any of the foregoing which differ in any way (including handwritten notations or other written or printed matter of any nature) from the original.

- C. "DOE" means the Department of Energy and its predecessor agencies.
- D. "Identify" means"
 - 1. With respect to a natural person, his name, address, title, and job description;
 - 2. With respect to a governmental agency, bureau, department, division, interdepartmental committee, advisory committee, or working group, formal or informal, its proper designation and location;
 - 3. With respect to a corporation, partnership or other legal entity, its name, principal place of business, and nature of its business;
 - 4. With respect to a document, the type of document (e.g., regulation, manual, directive, letter, memorandum, list, study, report, etc.), date, the name of the person who prepared the document, the name of the person for whom the document was

prepared or to whom it was delivered, and the name, address, and title of the person who presently has possession or control of the document; and

5. With respect to a communication other than a document, the type of communication (e.g., telephone, in-person, etc.), date, participants, and any notes, memoranda, records of conversations, diary or calendar entries or other document or notations memorializing such communication.

E. "NRC" means the United States Nuclear Regulatory Commission.

F. "CDA" means core disruptive accident.

I. Contentions 1, 2, and 3

1. Is human error a significant contributor to the overall risk of accidents in:
 - a. the CRBR?
 - b. LMFBRs?
 - c. LWRs?
2. Are there any differences in the role human error plays in contributing to overall accident risk between:
 - a. the CRBR and LWRs?
 - b. LMFBRs and LWRs?If the answer is yes, explain the extent of and reasons for each difference.
3. Has Applicants' position regarding the significance of human error as a contributor to the overall risk of accidents for any reactor type changed since TMI? If the answer to this interrogatory is yes:
 - a. explain in detail how Applicants' position has changed;
 - b. identify and provide any and all documents related to Applicants' current position.
4. Do Applicants agree with the statement in the Report of the Reactor Safety Research Review Group (September 1981) that most studies of the likely causes of serious accidents conclude through probabilistic risk analysis that over 50% of the risk is associated with human failure to perform as intended?

- a. If the answer to this interrogatory is yes, identify and provide all documents in the possession of Applicants relating to this issue.
 - b. If the answer to this interrogatory is no, explain in detail why Applicants do not agree with this statement.
5. For each of the following core disassembly scenarios, compare the relative probability of failure to shutdown between the CRBR and the Fast Flux Test Facility:
 - a. Loss-of-Flow (LOF);
 - b. Transient Overpower (TOP);
 - c. LOF-driven-TOP.Identify and provide all documents in the possession of Applicants which form the basis for your answer to this interrogatory.
6. In light of the fact that the "Standard Format and Content" (Feb. 1974) was a preliminary document on which further work was dropped, what is the basis for believing that the 67 events identified in the "Standard Format and Content" document encompass all credible events that should be considered in establishing the design basis of the CRBR?

7. Identify and provide all systems interaction studies relied upon by Applicants to ensure that the CRBR design is adequate to cope safely with potential accidents involving human error and multiple system failures.
8. Since the TMI-2 accident what specific changes (significant from a safety standpoint) have been made, and what additional changes must be made, in the design of the CRBRP to cope with potential interaction accidents involving human error and multiple system failures?
9. Since the TMI-2 accident what specific changes (significant from a safety standpoint) have been made, and what additional specific changes must be made, in the regulations and other criteria used to judge the adequacy of the CRBRP design and the suitability of the CRBR site in light of the lessons learned from the TMI-2 accident and subsequent safety analyses?
10. Have Applicants developed any responses since April 23, 1977 to the letter from Richard P. Denise to Lochlin W. Caffey, dated May 6, 1976? If the answer to this interrogatory is yes, identify and produce such responses and any and all documents in the possession of Applicants relating thereto.

11. The November 9, 1978 letter from William P. Gammill of the NRC Staff to Lochlin W. Caffey summarizes the Staff's position regarding the major unresolved CRBR safety issues at the time the CRBR licensing proceeding was suspended. For each unresolved safety issue described in the Gammill letter, identify the pages in Applicants' PSAR, if any, where such issue is resolved or discussed. Intervenors remind Applicants that providing up-to-date answers to this and all other interrogatories is a continuing obligation.
12. Explain in detail the justification for Applicants' statement to the ACRS on February 2, 1982 that "[f]or the electrical portions of our design, it is infeasible to a certain extent to apply some statistical meaning to the data we have gotten for our reliability tests." (Tr. p. 114).
13. With regard to limiting overpower transients and undercooled events, what trip settings are relied upon to ensure that the following categories of events are accommodated within the design basis (i.e., the damage severity limits)?
 - a. anticipated events;
 - b. unlikely events;
 - c. extremely unlikely events.
14. Explain in detail how and when the various trip settings and trip bypasses are set in order to scram

the primary and secondary control rod systems, including whether they are set manually.

15. Is it possible that the various trip settings and trip bypasses used to scram the primary and secondary control rod systems could be set erroneously due to human error?
16. Identify precisely upon which portions, in whole or in part, of the PSAR and other documents (including but not limited to CRBRP-1, CRBRP-2, CRBRP-3, CRBRP-GEFR-00523, WARD-D-0118, NEDM-14082) Applicants intend to rely at the LWA-1 stage in order to demonstrate
 - a. that the CDA should be excluded from the design basis; and
 - b. that the source term selected for CRBR is suitably conservative for purposes of Part 100.
17. Will Applicants rely on, discuss, cite or otherwise use in any way probabilistic analyses of CRBR accident risks and/or consequences in preparing and/or presenting its case in the CRBR LWA-1 proceeding? If the answer is "yes" describe how such analyses will be used and identify them and provide them if they have not previously been provided.
18. Explain why Applicants decided to withdraw the so-called "parallel design" (original Appendix F to the PSAR)?

19. Provide all documents, memoranda, or communications in any form between or among Project Management Corp., TVA and DOE related to the following subjects:
 - a. the risks of a CDA for the CRBR;
 - b. the risks of a CDA for a reactor of the general size and type proposed;
 - c. the consequences of a CDA for the CRBR;
 - d. the consequences of a CDA for a reactor of the general size and type proposed;
 - e. the source term for the CRBR;
 - f. the source term for a reactor of the general size and type proposed;
 - g. the decision to withdraw the "parallel design";
 - h. the potential changes to the CRBR design or site that might result from including the CDA within the design basis;
 - i. the potential cost of such changes to the CRBR design or site; and
 - j. the suitability of the CRBR site.
20. With respect to the subjects covered by (a)-(j) above, Project Management Corp., DOE and TVA shall each provide any internal memoranda, minutes of meetings (including but not limited to Board meetings) or documents of any kind bearing on those subjects.

II. Contention 2

1. For each of the following three core disassembly scenarios, identify the six most important parameters or assumptions underlying such scenarios (e.g., location of failure) in terms of their potential impact on energetics and the CRBR's capability to accomodate such energetics (keeping in mind the uncertainties in our knowledge):
 - a. Loss-of-Flow (LOF);
 - b. Transient Overpower (TOP);
 - c. LOF-driven-TOP.
2. Identify each CRBR component with a potential impact on the capability of CRBR to accomodate a CDA, whose design or other aspect has been changed since April 23, 1977.
 - a. For each component identified above, explain in detail the impact of such change on the potential consequences of a CDA.
3. Identify all currently utilized codes and subroutines of codes presently employed by Applicants in analyzing CDAs and their consequences.
 - a. Indicate which of the codes identified above have been employed by Applicants for the first time since April 23, 1977;

- b. Indicate which of the subroutines of codes indicated above have been employed by Applicants for the first time since April 23, 1977;
 - c. Identify which of the codes indicated above have been changed since April 23, 1977;
 - d. Indicate which of the subroutines of codes indicated above have been changed since April 23, 1977.
4. Are Applicants relying or intending to rely for the LWA-1 upon any documents other than the PSAR and documents referenced therein in support of their assertion that CDAs need not be treated as DBAs? If the answer to this interrogatory is yes, identify and provide all such documents and any and all such documents in the possession of Applicants related thereto. Answer the same question with respect to the construction permit.
5. In light of the TMI accident, to what extent is the CRBR design adequate with respect to its capability to remove core material from the reactor following a CDA and reactor vessel rupture?

III. Contentions 4 and 6(b)(4)

1. Since April 25, 1977, have Applicants prepared or received any documents which discuss:
 - a. the costs of safeguards and physical security at the CRBR and supporting fuel cycle facilities;
 - b. the risks and consequences of safeguards and/or physical security failure at the CRBR and supporting fuel cycle facilities;
 - c. the nature and scope of the current threat from terrorists, saboteurs, and thieves to the CRBR and supporting fuel cycle facilities; and/or
 - d. the nature and scope of projected, future threats from terrorists, saboteurs, and thieves to the CRBR and supporting fuel cycle facilities?

If the answer to any part of this interrogatory is yes, identify and produce such documents.

2. Since April 25, 1977, have Applicants prepared or received any documents which discuss the possibility that an act of sabotage or terrorism could be a CDA initiator at the CRBR? If the answer to this interrogatory is yes, identify and produce such documents.
3. a. State what specific measures have been adopted since April 25, 1977, to improve safeguards and physical security at the CRBR and supporting fuel cycle facilities;

- b. For each such measure, specify (i) its cost, and (ii) the reasons for its adoption.
- 4. a. State what alternatives to the planned safeguards and physical security systems at the CRBR and supporting fuel cycle facilities are currently under consideration.
- b. For each alternative stated, specify (i) its cost, and (ii) the reasons which would support its adoption.
- 5. Specify the ways, if any, that the threat to the CRBR and supporting fuel cycle facilities has changed since April 25, 1977.

IV. Contention 5

- 1. Provide the information requested below for each of the following facilities:
 - a. Oak Ridge National Laboratory;
 - b. Y-12 Plant;
 - c. K-25 Plant (Oak Ridge Gaseous Diffusion Plant):
 - (1) Describe the national security functions(s), if any, performed at each facility.
 - (2) If an evacuation of such facility were required, how many people would be required to remain at each facility for national security, or other reasons if the dose to such people were likely to reach:

- (a) 1 rem;
 - (b) 5 rems;
 - (c) 25 rems;
 - (d) 100 rems;
 - (e) 250 rems;
 - (f) 500 rems.
- (3) Identify fully the national security impact, if any, of losing access to each facility:
- (a) for one week;
 - (b) for one month;
 - (c) for three months;
 - (d) for six months;
 - (e) for one year;
 - (f) indefinitely.

V. Contention 6

1. Identify each fuel cycle facility (including fuel production, storage, preparation, fabrication, reprocessing, spent fuel storage, and waste disposal facilities) that (a) is likely to be used; or (b) may be used in the CRBR fuel cycle throughout its entire operating life.
2. Indicate whether Staff takes the position that the following regulations apply to each of the facilities identified in response to Question 1 above:

- a. 10 CFR § 50.34(c);
 - b. 10 CFR Part 20;
 - c. 10 CFR Part 60;
 - d. 10 CFR Part 70;
 - e. 10 CFR Part 71;
 - f. 10 CFR Part 73.
3. For each of the facilities and regulations identified in Questions 1 and 2 above, if Applicants' response is that a specific regulation on a particular subject does not apply to a facility, indicate which regulation(s) on that subject do apply to such facility and specify each and every difference in the regulations.
4. Identify each principal environmental impact associated with the operation of any of the following DOE reprocessing plants that may be used to supply fuel for the CRBR or to reprocess CRBR fuel and compare it to the projected impact (if any) of the model reprocessing plant discussed in WASH 1535 and the Draft Supplement EIS (DOE/EIS-0085-D):
- a. the Savannah River plant (H canyon);
 - b. the Savannah River plant (F canyon);
 - c. the Idaho National Engineering Laboratory;
 - d. the Hanford PUREX plant.

5. For each of the facilities listed in Question 4 above, identify, for each of the last five years, (or, for the Hanford PUREX plant, the five years prior to its shutdown), the principal radioactive releases (curies of each isotope) from such facility to:
 - a. the atmosphere.
 - b. liquid effluent streams.
6. How and where will the following materials be disposed of:
 - a. CRBR spent fuel;
 - b. high-level waste from the reprocessing of CRBR fuel;
 - c. high-level waste from the reprocessing of LWR fuel to recover plutonium for the CRBR.
7. Do Applicants take the position that they must meet the provisions of 10 CFR Part 71 with respect to the transportation of materials in the CRBR fuel cycle?
 - a. If the answer is no, will Applicants meet those requirements anyway?
 - b. If Applicants take the position that 10 CFR Part 71 is not applicable, indicate which regulations Applicants claim are applicable to the transportation of materials in the CRBR fuel cycle.

8. If plutonium for the CRBR may be obtained from the United Kingdom,
 - a. what regulations would govern the transportation of such materials,
 - b. what requirements or constraints, e.g., application of IAEA safeguards, has the United Kingdom indicated must be met in order that such a sale or transfer of plutonium could take place, and
 - c. how much United Kingdom plutonium has the U.S. indicated it may wish to obtain to meet U.S. R&D needs?
9. Will the disposal of wastes generated from the CRBR spent fuel, including high-level wastes from reprocessing,
 - (a) be subject to:
 - i. NRC jurisdiction?
 - ii. EPA jurisdiction?
 - (b) be classified as defense waste?
 - (c) be classified as commercial waste?

VI. Contention 7

1. Identify the precise criteria, if any exist, which must be met for the CRBR to meet each of its programmatic objectives.

2. Has the French Phenix reactor demonstrated the technical performance of an LMFBR central station electric powerplant in a utility environment?
3. Has the French Phenix reactor demonstrated the reliability of an LMFBR central station electric powerplant in a utility environment?
4. Has the French Phenix reactor demonstrated the maintainability of an LMFBR central station electric powerplant in a utility environment?
5. Has the French Phenix reactor demonstrated the safety of an LMFBR central station electric powerplant in a utility environment?
6. Has the French Phenix reactor demonstrated the environmental acceptability of an LMFBR central station electric powerplant in a utility environment?
7. Has the French Phenix reactor demonstrated the economic feasibility of an LMFBR central station electric powerplant in a utility environment?
8. If the answer to any of Questions 1-6 above is other than yes, explain precisely the reason for the answer and what changes would be, or would have been necessary for such a demonstration.

9. With respect to each of Questions 1-6 above, explain in detail the basis, if any, for believing the answer would be any different if the Phenix reactor were operated in a U.S. utility environment. Would, for example, the difference in safety requirement be so severe as to detrimentally affect reliability, or environmental acceptability?
10. Has the value of the LMFBR for conserving important nonrenewable natural resources (i.e. uranium) been confirmed? If the answer is other than yes, explain in detail why this value of the LMFBR has not been confirmed and what would be necessary for such a confirmation.
11. Has the value of the Light Water Breeder for conserving important nonrenewable resources (i.e. uranium) been confirmed? If the answer is other than yes, explain in detail the basis for the answer.
12. Could the technical performance of the CRBR be demonstrated if for any reason the plant could not operate
 - a. at all;
 - b. for more than 1 year;
 - c. for more than 2 years;
 - d. for more than 3 years;
 - e. for more than 5 years.

13. Could the reliability of the CRBR be demonstrated if for any reason the plant could not operate
 - a. at all;
 - b. for more than 1 year;
 - c. for more than 2 years;
 - d. for more than 3 years;
 - e. for more than 5 years.
14. Could the maintainability of the CRBR be demonstrated if for any reason the plant could not operate
 - a. at all;
 - b. for more than 1 year;
 - c. for more than 2 years;
 - d. for more than 3 years;
 - e. for more than 5 years.
15. Could the safety of the CRBR be demonstrated if for any reason the plant could not operate
 - a. at all;
 - b. for more than 1 year;
 - c. for more than 2 years;
 - d. for more than 3 years;
 - e. for more than 5 years.
16. Could the environmental acceptability of the CRBR be demonstrated if for any reason the plant could not operate
 - a. at all;
 - b. for more than 1 year;

- c. for more than 2 years;
 - d. for more than 3 years;
 - e. for more than 5 years.
17. Could the economic feasibility of the CRBR be demonstrated if for any reason the plant could not operate
- a. at all;
 - b. for more than 1 year;
 - c. for more than 2 years;
 - d. for more than 3 years;
 - e. for more than 5 years.
18. How much would the CRBR have to cost, or what factors would have to occur, before the project would be unable to demonstrate the economic feasibility of an LMFBR central station electric powerplant in a utility environment?
19. Indicate whether Applicants would likely drop their commitment to the project if the following design changes were required by Staff:
- a. inclusion of a core catcher;
 - b. complete prohibition of venting of the containment building;
 - c. requirement that the reactor be able to contain energetic energy exceeding:

- i. 661 megajoules;
- ii. 1200 megajoules;
- iii. 2400 megajoules;
- iv. 5000 megajoules;
- v. 10,000 megajoules.

d. any combination of the design changes indicated above.

20. Indicate whether Applicants would likely drop their commitment to the project if it appeared that the CP could not be granted before:

- a. 1983;
- b. 1984;
- c. 1985;
- d. 1986;
- e. 1987;
- f. 1988;
- g. 1989;
- h. 1990;
- i. other (specify).

21. Does the timing objective (as expeditiously as possible) carry the same weight as other objectives of the CRBR, e.g., utility participation? If not, please explain.

22. Indicate whether Applicants believe the CRBR can meet its timing objective (as expeditiously as possible) if, because of Applicants' failure to submit an adequate design or supporting documentation to the NRC, a CP could not be granted before:
- a. 1983;
 - b. 1984;
 - c. 1985;
 - d. 1986;
 - e. 1987;
 - f. 1988;
 - g. 1989;
 - h. 1990;
 - i. other (specify).
23. Provide all documents, analyses, calculations, evaluations, etc., related in whole or part to the question of the likelihood that CRBR will meet its programmatic objectives.
24. Provide all documents, memoranda or communications in any form between or among Project Management Corp., TVA and DOE related to:
- a. the cost of constructing CRBR;
 - b. the cost of operating CRBR;
 - c. the construction schedule for CRBR;
 - d. the likelihood that CRBR will meet its programmatic objectives;

- e. the potential reliability of CRBR;
 - f. the environmental impacts associated with CRBR;
 - g. the potential technical performance of CRBR;
 - h. the cost of a core catcher for CRBR;
 - i. the cost of prohibiting venting of the containment building;
 - j. the cost of requiring CRBR to be able to contain energetic energy exceeding 661 megajoules, 1200 megajoules, or anything greater;
 - k. the possibility of terminating the CRBR project if it is or becomes too costly or is delayed.
25. With respect to the subjects covered by (a)-(k) above, Project Management Corp., TVA and DOE shall each provide any internal memoranda, minutes of meetings (including but not limited to Board meetings) or documents of any kind bearing on those subjects.

VI. Contention 8

- 1. Have any analyses been undertaken of neutron activation products which Applicants rely upon to determine:
 - a. the potential isolation period of the CRBR following decommissioning?
 - b. the economic costs of decommissioning the CRBR?

c. the environmental costs of decommissioning the CRBR?

d. the societal costs of decommissioning the CRBR?

If the answer to any part of this interrogatory is yes, identify and produce such assessments and any and all documents in the possession of Applicants relating thereto.

2. If the answer to any part of the above interrogatory is that Applicants do not rely on any analyses of neutron activation products, explain in detail why Applicants believe that reliance on such analyses is unnecessary.

3. What are the environmental impacts and unavoidable adverse environmental effects of decommissioning CRBR? Provide all documentation bearing on this question.

VII. General Questions

1. Provide copies of any and all documents in the possession of Applicants not previously provided to Intervenor, relating to communications between Staff and Applicants since April 23, 1977 regarding the licensing of the CRBR.

2. Provide copies of any and all documents in the possession of Applicants not previously provided to Intervenor, relating to communications between Staff and ACRS since April 23, 1977 regarding the licensing of the CRBR.
3. Provide copies of any and all documents in the possession of Applicants not previously provided to Intervenor, relating to communications between Applicants and ACRS since April 23, 1977 regarding the licensing of the CRBR.
4. Provide all documents, memoranda or communications in any form between or among Project Management Corp., TVA and DOE related to the issues raised by NRDC's contentions.
5. Project Management Corp., TVA and DOE are each asked to provide all internal memoranda, minutes of meetings (including but not limited to Board meetings) or documents of any kind related to the issues raised by NRDC's contentions.

VIII. The Following Interrogatories Relate to the
Contention(s) Indicated in Parentheses Following
Each Document, Event, or Program:

With regard to each of the following documents, events, or programs, indicate, by answering the following questions, the extent to which Applicants have considered or intend to

consider such document, event, or program in determining whether one or more Amendments to Applicants' Environmental Report (ER) have been or must be prepared after April 25, 1977:

- a) Have Applicants considered the impact of this document, event, or program on their environmental analysis?
- b) Do Applicants consider this document, event, or program to represent significant new information or a significant change in circumstances?
- c) If the answer to (b) is yes, indicate the statement(s) or portion(s) of the ER which Applicants have or intend to update as a result of this document, event, or program. If the ER has already been updated, so indicate, referring to the particular amendment and section.
- d) If the answer to (b) is yes, indicate which conclusion(s) of Applicants in the ER will have to be updated in the future as a result of this document, event, or program.
- e) If the answer to (a) is no, explain in detail why Applicants have not considered such document, event, or program.
- f) If the answer to (b) is no, explain in detail the basis for Applicants' conclusion that such document, event, or program does not represent

significant new information or a significant change in circumstances.

g) If the answer to (d) is "none," explain in detail why Applicants do not intend to update any of their conclusions in the ER on the basis of such document, event, or program.

1. Office of Nuclear Reactor Regulation, NRC, Report of the Siting Policy Task Force (NUREG-0625) (Aug. 1979) (Contention 7);
2. Proposed revision of NRC reactor siting criteria (45 Fed. Reg. 50350, July 29, 1980) (Advance Notice of Proposed Rulemaking) (Contention 7);
3. Proposed rule regarding the review of alternative sites under NEPA (45 Fed. Reg. 24168, April 9, 1980) (Contention 7);
4. Notice of Intent to Prepare an Environmental Impact Statement for revision of the regulations governing the Siting of Nuclear Power Plants (45 Fed. Reg. 79820, December 2, 1980) (Contention 7);
5. NRC, A Comparision of Site Evaluation Methods (NUREG/CR-1684) (July 1981) (Contention 7);
6. New emergency planning regulations (45 Fed. Reg. 55402, August 19, 1980) (Contention 5);

7. NRC and Federal Emergency Management Agency, Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants (NUREG-0654, FEMA-REP-1, Rev. 1) (Nov. 1980) (Contention 5);
8. NRC proposed rule requiring improvements in reactor design to reduce the risks from anticipated transients without scram ("ATWS") events (46 Fed. Reg. 57521, November 24, 1981) (Contention 1);
9. Risk Assessment Review Group Report to the U.S. Nuclear Regulatory Commission (NUREG/CR-0400) (Contention 1);
10. Nuclear Regulatory Commission Statement of Risk Assessment in Light of the Risk Assessment Review Group Report, Jan. 18, 1979 (Contention 1);
11. U.S. Nuclear Regulatory Commission, NRC Action Plan Developed as a Result of the TMI-2 Accident (NUREG-0660) (Aug. 1980) (Contentions 1 and 3);
12. Report of the Reactor Safety Research Review Group (September 1981) (Contentions 1 and 3);
13. U.S. Nuclear Regulatory Commission, Identification of New Unresolved Safety Issues Relating to Nuclear Power Plants (NUREG-0705) (March 1981) (Contentions 1 and 3);
14. U.S. Nuclear Regulatory Commission, Safety Goals for Nuclear Power Plants: A Discussion Paper (NUREG/0880) (February 1982) (Contention 1);

15. Changes in the computer codes used by Applicants to simulate accidents to determine their potential and magnitude; e.g., PSAR Section 12, Appendix A (Contention 2);
16. Significant changes in reactor vessel and core design that must be reflected in Applicants' accident modeling (See, e.g., PSAR Sections 4.1 and 4.2) (Contention 2);
17. New results on ongoing safety testing (see, e.g., pp. 118-135 of DOE Draft EIS Supplement (DOE/EIS-0085-D) and footnotes 4, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16 on pp. 141-144); see also General Electric, An Assessment of HCDA Energetics in the CRBRP Heterogeneous Reactor Core (CRBRP-GFER-00523) (December 1981) (Contention 2);
18. List of unresolved safety issues at time of suspension of CRBRP licensing proceeding: Letter, dated November 9, 1978, from W.P. Gammill to L.W. Caffey, "Summary of Outstanding Items" (Contentions 1, 2);
19. "Licensing Requirements for Pending Construction Permit and Manufacturing License Applications" (47 Fed. Reg. 2286, January 15, 1982) (Contentions 1-3);
20. "Licensing Requirements for Pending Applications for Construction Permits and Manufacturing License. March 1981 (NUREG-0718) (Rev. July 10, 1981) (Contentions 1-3);

21. Proposed rules to require improved hydrogen control capability during and following reactor accidents:
 - a. 46 Fed. Reg. 62281, December 23, 1981;
 - b. 46 Fed. Reg. 57521;
 - c. 46 Fed. Reg. 2286 (Contention 2);
22. National Academy of Science, The Effects on Populations of Exposure to Low Levels of Ionizing Radiation (National Academy Press 1980) (BEIR III Report) (Contention 11);
23. Lowe and E. Mendelsohn, "Revised Dose Estimates at Hiroshima and Nagasaki" (UCRL 85446 preprint, 1 October 1980), available from Lawrence Livermore National Laboratory) and other directly related reports (Contention 11);
24. Revisions to ORIGEN Code since April 25, 1977 (Contention 11);
25. Cross, Palmer, Filipy, Dagle, and Stuart, "Carcinogenic Effects of Radon Daughters, Uranium Ore Dust and Cigarette Smoke in Beagle Dogs." (Pacific Northwest Laboratory, Richland, Wash., April 24, 1981) (Contention 11);
26. John W. Gofman, Radiation and Human Health (Sierra Club Books, San Francisco 1981) (Contention 11);
27. USEPA, "Proposed Federal Radiation Protection Guidance for Occupational Exposure," EPA 520/4-81-003 (Jan. 31, 1981) (Contention 11);

28. NRC revisions to Regulatory Guide 8.8, "Information Relevant to Ensuring that Occupational Radiation Exposures at Nuclear Power Stations Will be as Low as is Reasonably Achievable." (NRC Office of Standards Development) (Rev. 2, March 1977) (Contention 11);
29. Changes in Applicants' Radiation Protection Program (see PSAR Section 12, Amendments 40, 44, 45, 49 and 52) (Contention 11);
30. New Regulatory Guides related to radiation protection, listed in letter, dated January 13, 1982 from Paul S. Check to John R. Longenecker (Contention 11);
31. Applicants' analysis of CRBR accident possibilities (see CRBR Safety Study, CRBRP-1, March 1977) (Contention 1);
32. New data related to an LMFBR's ability to accomodate core debris following a core disruptive accident (see, e.g., footnotes 36, 37, 39 and 40 on p. 143 of DOE draft supplemental LMFBR impact statement) (Contention 3);
33. New proposed legislation and proposed regulations on siting and construction of waste disposal facilities:
 - a. 46 Fed. Reg. 35280 (July 8, 1981);
 - b. 46 Fed. Reg. 221 (November 15, 1978) (Contention 6);

34. New regulations on transportation of high level radioactive wastes: 45 Fed. Reg. 34446 (June 15, 1979) (Contention 6);
35. Minutes of April 23, 1981 Meeting between DOE and Nuclear Industry Representatives concerning potential for commercial reprocessing (statement of Brian D. Farrow, Senior Vice President and General Counsel, Allied Commercial Corp. and W. Creighton Galloway, Exec. Vice President, General Atomic Co., "Prospects for Private Investment in Nuclear Fuel Reprocessing") (Contention 6);
36. New NRC regulations on physical security (10 CFR § 73.55, "Requirements for Physical Protection of Licensed Activities in Nuclear Power Reactors Against Radiological Sabotage) (Contention 4);
37. Department of Energy, Nuclear Proliferation and Civilian Nuclear Power: Report of the Nonproliferation Alternative Systems Assessment Programs (DOE/NE-0001/7) (June 1980) (Contention 4);
38. Proposed NRC rules concerning material control and accountability requirements for licensees possessing special nuclear materials (46 Fed. Reg. 45144 (September 10, 1981)) (Advance Notice of Proposed Rulemaking) (Contention 4);

39. Recent GAO reports concerning safeguards and physical security (Contention 4);
- a. "Security at Nuclear Powerplants -- At Best, Inadequate" (4/7/77);
 - b. Unclassified summary of a classified report entitled, "Commercial Nuclear Fuel Facilities Need Better Security" (5/2/77);
 - c. Letter to Chairman, John Dingell, U.S. House of Representatives, Re: unaccounted for nuclear material (5/5/78);
 - d. Unclassified summary of a classified report entitled, "Status of Physical Security Improvements to ERDA Special Nuclear Material Facilities" (9/87/77);
 - e. "Federal Actions are Needed to Improve Safety and Security of Nuclear Materials Transportation" (5/7/79);
 - f. Unclassified summary of classified report entitled, "U.S. Nuclear Safeguards -- A National Strategy is Needed" (2/19/80);
 - g. "Nuclear Fuel Reprocessing and the Problems of Safeguarding Against the Spread of Nuclear Weapons" (3/18/80);
 - h. Letter to Rep. Tim Wirth, Re: Alleged missing material from DOE's Rocky Flats weapons production plant (10/1/80);

- i. "Nuclear Diversion in the U.S.? 13 Years of Contradictions and Confusion" (1/18/78) Classified report with no unclassified summary.
- 40. "A Long-Term Problem for the Nuclear Industry," Science, Vol. 215 (January 22, 1982) (Contention 8);
- 41. U.S. Navy, Notice of Intent To Prepare an Environmental Impact Statement, 47 Fed. Reg. 2151 (January 14, 1982), on plan to dispose of retired nuclear submarines in the ocean (Contention 8).

IX. The Following Interrogatories Relate to the
Contention(s) Indicated in Parentheses Following
Each Document, Event, or Program:

With regard to each of the following documents, events, or programs, indicate, by answering the following questions, the extent to which Applicants have considered or intend to consider such document, event, or program in determining whether an Amendment to Applicants' Preliminary Safety Analysis Report (PSAR) must be prepared after April 25, 1977:

- a) Have Applicants considered the impact of this document, event, or program?
- b) Do Applicants consider this document, event, or program to represent significant new information or a significant change in circumstances?

- c) If the answer to (b) is yes, indicate the statement(s) or portion(s) of the PSAR which Applicants have or intend to update as a result of this document, event, or program. If the PSAR has already been updated, so indicate, referring to the particular amendment and section.
- d) If the answer to (b) is yes, indicate which conclusion(s) of the Applicants in the PSAR will have to be updated in the future as a result of this document, event, or program.
- e) If the answer to (a) is no, explain in detail why Applicants have not considered such document, event, or program.
- f) If the answer to (b) is no, explain in detail the basis for Applicants' conclusion that such document, event, or program does not represent significant new information or a significant change in circumstances.
- g) If the answer to (d) is "none," explain in detail why Applicants do not intend to update any of their conclusions in the PSAR on the basis of such document, event, or program.

1. Office of Nuclear Reactor Regulation, NRC, Report of the Siting Policy Task Force (NUREG-0625) (Aug. 1979) (Contention 7);
2. Proposed revision of NRC reactor siting criteria (45 Fed. Reg. 50350, July 29, 1980) (Advance Notice of Proposed Rulemaking) (Contention 7);
3. Proposed rule regarding the review of alternative sites under NEPA (45 Fed. Reg. 24168, April 9, 1980) (Contention 7);
4. Notice of Intent to Prepare an Environmental Impact Statement for revision of the regulations governing the Siting of Nuclear Power Plants (45 Fed. Reg. 79820, December 2, 1980) (Contention 7);
5. NRC, A Comparision of Site Evaluation Methods (NUREG/CR-1684) (July 1981) (Contention 7);
6. New emergency planning regulations (45 Fed. Reg. 55402, August 19, 1980) (Contention 5);
7. NRC and Federal Emergency Management Agency, Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants (NUREG-0654, FEMA-REP-1, Rev. 1) (Nov. 1980) (Contention 5);
8. NRC proposed rule requiring improvements in reactor design to reduce the risks from anticipated transients without scram ("ATWS") events (46 Fed. Reg. 57521, November 24, 1981) (Contention 1);

9. Risk Assessment Review Group Report to the U.S. Nuclear Regulatory Commission (NUREG/CR-0400) (Contention 1);
10. Nuclear Regulatory Commission Statement of Risk Assessment in Light of the Risk Assessment Review Group Report, Jan. 18, 1979 (Contention 1);
11. U.S. Nuclear Regulatory Commission, NRC Action Plan Developed as a Result of the TMI-2 Accident (NUREG-0660) (Aug. 1980) (Contentions 1 and 3);
12. Report of the Reactor Safety Research Review Group (September 1981) (Contentions 1 and 3);
13. U.S. Nuclear Regulatory Commission, Identification of New Unresolved Safety Issues Relating to Nuclear Power Plants (NUREG-0705) (March 1981) (Contentions 1 and 3);
14. U.S. Nuclear Regulatory Commission, Safety Goals for Nuclear Power Plants: A Discussion Paper (NUREG-0880) (February 1982) (Contention 1);
15. List of unresolved safety issues at time of suspension of CRBRP licensing proceeding: Letter, dated November 9, 1978, from W.P. Gammill to L.W. Caffey, "Summary of Outstanding Items" (Contentions 1, 2);
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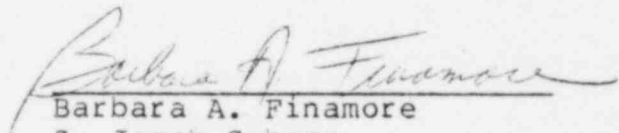
31. Department of Energy, Nuclear Proliferation and Civilian Nuclear Power: Report of the Nonproliferation Alternative Systems Assessment Programs (DOE/NE-0001/7) (June 1980) (Contention 4);
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