

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

Docket No. 50-537

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- C) Identify principal documents and studies, and the particular parts thereof, specifically examined but not cited in (b). In lieu thereof, at Staff's option a copy of each such document and study may be attached to the answer.
- D) Identify by name, title and affiliation the primary Staff employee(s) or consultant(s) who provided the answer to the question.
- E) Explain whether the Staff is presently engaged in or intends to engage in any further, on-going research program which may affect the Staff's answer. This answer need be provided only in cases where the Staff intends 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 the Staff does 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 the Staff intends 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 the Staff has in fact identified the expert(s) in question or determined that no expert will testify, as long as such answer provides reasonable notice to Intervenors.

For all the responses to interrogatories in this set the following are the answers to the requested parts in the Protocol for Discovery.

- B) All documents and studies, and the particular parts thereof, relied upon by the Staff now or in the past which serve as the basis for the answer are mentioned in the direct answer to the question unless otherwise noted.
- C) There were no principal documents and studies specifically examined but not cited in (b) unless otherwise noted.
- D) The name, title and affiliation of the Staff employee(s) or consultant(s) who provided the answer to the question are available in the affidavits.

- E) The Staff is not presently engaged in nor intends to engage in any further, on-going research program which may affect the Staff's answer unless otherwise noted.
- F) At this time, the Staff has not determined who will testify on the subject matter questioned. Reasonable notice will be given to all parties after the Staff has made this determination. At that time, a statement of professional qualifications will be provided for each witness.

Respectfully submitted,

Daniel T. Swanson

Daniel T. Swanson
Counsel for NRC Staff

Dated at Bethesda, Maryland
this 30th day of April, 1982

NRC STAFF'S ANSWERS TO NRDC'S
AND THE SIERRA CLUB'S INTERROGATORIES

The NRC Staff has determined that previous interrogatory responses to #1, #4, #8 through #11 are still applicable and need no updating.

The following interrogatories relate to the December 6, 1976, letter from Roger Boyd to ERDA.

Interrogatory 3

Explain how the Staff conducts its analysis of the residual risk associated with operation of the CRBR if it does not have a final determination on the core mechanical work energy release criteria.

Response

As stated in the Final Environmental Statement (FES) and Site Suitability Report (SSR), the Staff has concluded that it is feasible to build a reactor of the general size and type of CRBR, e.g., a loop type LMFBR at the CRBR site with acceptably small risk to public health and safety and with acceptable environmental impact. With regard to the potential risks of core descriptive accidents (CDAs), these conclusions were based on the following:

- (1) feasible design requirements to assure that CDAs will have sufficiently low probability to be excluded from the design basis have been identified
- (2) in the unlikely event a CDA should occur, it is feasible to include features as determined neces-

sary in the safety review to assure that the consequences will be acceptably low.

These conclusions remain valid and are insensitive to the specifics of the analyses being performed of the CDA core mechanical work energy. The work energy analyses are being performed as part of the safety review to determine whether primary system restraining devices and sodium spray deflectors will be necessary for the new heterogeneous core design.

The evaluation of the consequences of a class 9 accident (CDA) presented in the FES assumed that the core mechanical work energy would exceed the structural capability of the primary system, releasing vaporized fuel and sodium from the core. Because in such a situation primary system restraints and spray deflectors would be required, the effect of these in limiting the release of fuel and sodium to containment was considered. Even though the assumed accident scenario is very improbable and beyond the design basis, the doses evaluated were below 10 C.F.R. Part 100 guidelines.

Because an evaluation of the potential consequences of a class 9 accident has been performed, the Staff believes the evaluations of the residual risks from CDAs in the FES and SSR are appropriate for the preliminary findings necessary for the environmental review. More specific evaluations regarding the core

mechanical work energy for the heterogeneous core, and the necessity for mechanical restraints and spray deflectors, will be provided in the SER.

The following interrogatories relate to the December 14, 1976, letter from Anthony Buhl to Roger Boyd.

Interrogatory 12

Does the Staff agree that completion of the energetics review within the Applicants' timeframe is essential and if so for what reason? If the reasons are the same as the Applicants', discuss in detail your analysis of the impact of a one month, four month, eight month, twelve month, delay in resolving in energetics issue on the cost and timing of the CRBR.

Response

The Applicant has changed the CRBR core design from a homogeneous to a heterogeneous design which is currently under staff review. The change in core design and the intervening delay in licensing activity appears to make the original schedule and schedule impact no longer germane.

For purposes of the Staff's LWA review, the energetics issue is sufficiently bounded, and will not affect the LWA schedule.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

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

AFFIDAVIT OF JOHN K. LONG

I, John K. Long, being duly sworn, state as follows:

1. I am employed by the U.S. Nuclear Regulatory Commission as a Nuclear Engineer, Research Systems Branch, Office of Nuclear Reactor Regulation.
2. I am duly authorized to participate in answering Interrogatories #1 and #12 of the 17th Set and I hereby certify that the answers given are true to the best of my knowledge.

JOHN K. LONG

Subscribed and sworn to before me
this day of April, 1982.

Notary Public

My Commission expires:

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of

U.S. DEPARTMENT OF ENERGY
PROJECT MANAGEMENT CORPORATION
TENNESSEE VALLEY AUTHORITY

(Clinch River Breeder Reactor Plant)

Docket No. 50-537

AFFIDAVIT OF RICHARD BECKER

I, Richard Becker, being duly sworn, state as follows:

1. I am employed by the U.S. Nuclear Regulatory Commission as a Reactor Engineer, Clinch River Breeder Reactor Program Office, Office of Nuclear Reactor Regulation.
2. I am duly authorized to participate in answering Interrogatories #1, and #12 of the 17th Set and I hereby certify that the answers given are true to the best of my knowledge.

RICHARD BECKER

Subscribed and sworn to before me
this day of April, 1982.

Notary Public

My Commission expires:

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of

UNITED STATES DEPARTMENT OF ENERGY
PROJECT MANAGEMENT CORPORATION
TENNESSEE VALLEY AUTHORITY

(Clinch River Breeder Reactor Plant)

Docket No. 50-53,

AFFIDAVIT OF BILL M. MORRIS

I, Bill M. Morris, being duly sworn, state as follows:

1. I am employed by the U.S. Nuclear Regulatory Commission as a Section Leader of the Technical Review Section, Clinch River Breeder Reactor Program Office, Office of Nuclear Reactor Regulation.
2. I am duly authorized to participate in answering Interrogatory #3 of the 17th Set and I hereby certify that the answer given is true to the best of my knowledge.

Bill M. Morris

Subscribed and sworn to before me
this day of April, 1982.

Notary Public

My Commission expires:

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of

U.S. DEPARTMENT OF ENERGY
PROJECT MANAGEMENT CORPORATION
TENNESSEE VALLEY AUTHORITY

(Clinch River Breeder Reactor Plant)

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Docket No. 50-537

AFFIDAVIT OF CARDIS L. ALLEN

I, Cardis L. Allen, being duly sworn, state as follows:

1. I am employed by the U.S. Nuclear Regulatory Commission as a Reactor Engineer, Clinch River Breeder Reactor Program Office, Office of Nuclear Reactor Regulation.
2. I am duly authorized to participate in answering Interrogatories #4 #8 through #11 of the 17th Set and I hereby certify that the answers given are true to the best of my knowledge.

CARDIS L. ALLEN

Subscribed and sworn to before me
this day of April, 1982.

Notary Public

My Commission expires: