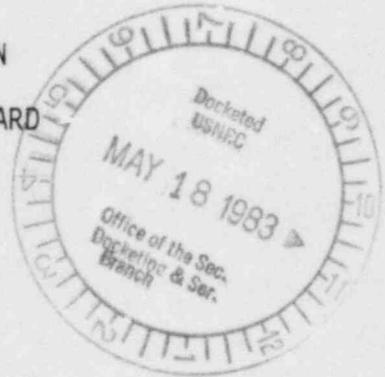


UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION  
ATOMIC SAFETY AND LICENSING BOARD

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



SERVED MAY 18 1983

In the Matter of

UNITED STATES DEPARTMENT OF ENERGY  
PROJECT MANAGEMENT CORPORATION  
TENNESSEE VALLEY AUTHORITY

(Clinch River Breeder Reactor Plant)

Docket No. 50-537-CP

May 17, 1983

ORDER FOLLOWING MAY 13, 1983 CONFERENCE WITH PARTIES

A conference with counsel and parties was held May 13, 1983, pursuant to notice. Counsel representing the Applicants, Staff, and Intervenors participated. Transcript corrections filed by the Applicants February 2, 1983 were approved and adopted of record (Tr. 7109-11).

I.

The contentions remaining for consideration in the Construction Permit phase of this proceeding were reviewed and reaffirmed. Such remaining contentions are Contentions 1 (envelope of design basis accidents not including core disruptive accidents); 3 (causes and

DSOZ

consequences of core disruptive accidents; and 9(c), (f), and (g) (emergency planning).<sup>1</sup>

There were extended arguments by counsel as to whether Contentions 2(a) through (d) remained as pending issues in this CP phase of the proceeding (Tr. 7111-54). Those contentions basically alleged that the site suitability source terms (SSST) selected by the Staff and analyzed by the Applicants and Staff, should be predicated upon a core disruptive accident (CDA) constituting a design basis accident (DBA). The Board holds that its Partial Initial Decision (PID) has adequately considered and resolved such SSST questions.<sup>2</sup> The Board also in the PID left open for consideration at this Construction Permit phase, the question of the adequacy of the containment design with respect to the CDA scenario.<sup>3</sup> Accordingly, a containment response issue is now available to the Intervenor under Contention 3(c), and the PID has already disposed of any other elements of 2(a) through (d) that are predicated upon the SSST issue.

In addition, the parties had previously agreed (or had not challenged that statement) that Contentions 2(a) through (d) were not

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<sup>1</sup> Tr. 7156-57.

<sup>2</sup> Partial Initial Decision (PID) entered February 28, 1983, at pages 16-22. Findings of Fact No. 17, 26 and 27.

<sup>3</sup> Id., Finding No. 30, at page 82.

subject to further litigation, and for that reason they were not included in our Order Opening Discovery, entered March 10, 1983.<sup>4</sup> It would be unfair at this late date, after discovery has been closed, to permit such an indirect attack upon the Board's prior scheduling order (Tr. 7114).

Contentions 2(f), (g) and (h), 9(a), (b), (d) and (e), 10, and 11(a), were apparently withdrawn by the Intervenors in the form of responses to various interrogatories.<sup>5</sup> Those contentions are hereby dismissed. However, the parties are admonished that they are under a duty to notify the Board, affirmatively and promptly, of any changes in circumstances that could affect the course of a proceeding.<sup>6</sup> Certainly the abandonment of a substantial number of admitted contentions by the Intervenors is a significant development which should

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<sup>4</sup> Tr. 7114, 7148-49, 7153-54. See also Mr. Edgar's letter to counsel for the Intervenors and the Staff dated December 27, 1982, enclosing "Proposed Scope and Schedule C. P. Hearings"; Applicants' Motion Concerning Schedule, dated March 7, 1983, at pages 2-3; and Intervenors' Response to Applicants' Supplement to March 7, 1983 Schedule Motion, dated March 24, 1983.

<sup>5</sup> Tr. 7155-62.

<sup>6</sup> Public Service Company of New Hampshire (Seabrook Station, Units 1 and 2), ALAB-422, 6 NRC 33, 80-82 (1977). Duke Power Company (Catawba Nuclear Station, Units 1 and 2), ALAB-355, 4 NRC 397, 401, 406 (1976). Georgia Power Company (Alvin W. Vogtle Nuclear Plant, Units 1 and 2), ALAB-291, 2 NRC 404, 408-12 (1975). Duke Power Company (William B. McGuire Nuclear Station, Units 1 and 2), ALAB-143, 6 AEC 623, 625-6 (1973).

have been brought to the Board's attention promptly by an appropriate motion for leave to withdraw contentions (Tr. 7162-64).

## II.

Certain topics have previously been identified which the Board is interested in having addressed during the course of the evidentiary hearings. The original 10 topics described in our Memorandum of March 31, 1983 have now been expanded by the addition of seven more items.<sup>7</sup> Those Items of Board Interest which the parties are requested to address are as follows:

1. In its safety Goal Development Program announcement (48 Fed. Reg. 10772, March 14, 1983) the Commission stated that during the 90-day period (ending June 8, 1983) for public comment on the proposed evaluation plan "it is expected that preliminary information on new radiological source terms will become available..." (Id., at 10778). The Staff is requested to advise whether that information will be evaluated for any impact on this proceeding, and the reason for its answer.
2. As regards fuel performance, to date the use of the term "failed fuel" has not consistently permitted delineation of the various failure modes that might have been alluded to (e.g., clad perforation, fission product leakage, clad bulging or rupture, melting of fuel pellets, etc.). The Applicants are requested to summarize the anticipated performance of the CRBR fuel associated with normal operation and accidental transients, describe various failure modes that must be dealt with, identify any operational limits (e.g., maximum linear heat generation rates, maximum cladding hot spot temperatures, etc.) to be imposed, and to review the basis for confidence

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<sup>7</sup> Tr. 7251-62.

(e.g., supportive evidence) that the proposed fuel behavior characteristics will be realized.

3. Avoidance of primary coolant pipe rupture seems to depend in part upon the fact that coolant temperature is well below its boiling temperature and that coolant pressure is near atmospheric pressure ( 10 atmos.). Applicants are requested to present a technical summary of how these coolant characteristics will result in a reduced likelihood of pipe rupture in piping designed for CRBR use.
4. Applicants are requested to explain how the CRBR will be configured to assure that convective circulation of the sodium coolant will be available to prevent fuel damage, if needed. This explanation should reference any supportive experimental or operational evidence. The Staff is requested to advise the Board whether it accepts convective circulation as a viable mechanism for fuel protective, and the reason for its answer.
5. In the area of quality, the Applicants are requested to explain whether (and/or how) differing functional levels of effort will be applied, depending upon whether a component or system is necessary for safety, important to safety, or not safety related. The divisions of authority and functional responsibilities for quality assurance and quality control amongst the various contractors and the Applicants should be discussed with emphasis on how the management of the various CRBR contractor fabrication and construction efforts will be coordinated to assure the minimizing of QA and QC oversights, especially where interfacing is involved. Applicants are also requested to describe what efforts will be undertaken to insure that accurate as-built plans and specifications will be available when needed, if the CRBR is constructed.
6. The SER discussion of quality seems to emphasize quality assurance and the various separate contractor organizations that will implement it. Does the Staff consider that QC responsibilities and activities are separate from QA or an integral part thereof? The Staff is requested to discuss its answer to this question and to explain briefly how it will monitor QA and QC efforts for adequacy.
7. Applicants are requested to discuss commercial and recreational river traffic (if any) from two points of interest:

- a) Practical methods of controlling same during off-normal plant conditions, and
  - b) The potential for hazardous cargo posing a threat to the CRBR.
8. Applicants are requested to discuss the design characteristics of the containment/confinement structures and the steam generator, with respect to challenges to those structures arising from transient (or accident) induced overpressure and overtemperature conditions. This discussion should address any engineered safety systems or components that will be relied upon for protection (e.g., containment shell cooling), and should reference supportive test or operational experience.
  9. The Staff's attention is directed to the discussion of protective action guidelines (PAGs) at pages 29-30 of the Partial Decision of February 28, 1983. The Staff is requested to address the question of whether a PAG revision for the CRBR should be made, and to explain its answer.
  10. The Staff's testimony at Tr. 3694 anticipates the need for further research and development on measurement capabilities to achieve DOE's goals for material control and accountability at the DRP. The Staff is requested to explain whether this additional effort is currently underway or definitively planned for the future, and the extent to which it is critical to the effectiveness of CRBR fuel safeguards measures.
  11. In discussing the energetics of accidents beyond design basis, the Staff offers the statement that there will be an "isentropic expansion yield to one atmosphere" (NUREG-0968, Vol. 2, p. A. 2-5). The Staff is requested to discuss briefly what is the physical significance of this statement and the extent to which it contributes to any conservatism in the analyses of energy releases. Phenomenologically, how has the Staff satisfied itself that "approximately 2550 MJ would be required to produce a slug impact kinetic energy close to the head design capability of 75 MJ" (Ibid).
  12. NUREG-0968 contains many references to items that are to be resolved at the OL review stage. In view of the apparently advanced stages of hardware design and procurement currently in being, the Board is concerned that said OL review (assuming a CP issues) may require substantive changes of a costly and time consuming nature, or in the alternative, result in a

compromise of performance safety. The Staff is requested to offer comments upon this situation and to provide whatever insights it can now offer for avoiding such problems.

13. With respect to the fuel system, the Staff has identified certain operational fallback positions potentially available to mitigate unresolved problems (NUREG-0968, Vol. 1, p. 4-47, 48). The Staff is requested to discuss briefly the extent if any to which invoking such operational fallbacks might compromise the achievement of CRBR programmatic objectives.
14. Operation with leaking fuel pins could conceivably offer the opportunity for these pins to "inhale" some amount of sodium whenever the reactor is shut down. Should this occur, subsequent return to operation at power might then result in a significant increase in pellet-to-cladding gap conductance with an attendant off-normal performance of the fuel. The Staff is requested to comment upon whether it sees this as a problem requiring resolution and the reasons for its answer.
15. The Applicants have proposed a reliability assurance program that focuses primarily on plant protective systems. The Board requests Applicants to address the question of whether said program will (or ought to) take account of findings derived from the CRBR quality assurance program, and if so, describe the administrative mechanism envisaged to accomplish this.
16. The SER discusses the impact of aerosol behavior on containment shell cooling. The Staff is requested to comment on whether changing concrete aggregate from calcitic to dolomitic limestone could significantly alter the behavior of the aerosols, and explain the basis for the answer.
17. What is the status of the Staff's review of, and what is the Staff's position with respect to, "The Eight Areas of Concern" listed in Section I, Table II of NUREG/CR-3224?

### III.

On April 29, 1983, the Intervenors filed a motion for extension of time for discovery to July 8, 1983, as well as a two month delay in the CP hearing schedule. The Applicants' response in opposition to such

motion was filed May 9, 1983, and the Staff's opposition was filed May 13. The Board heard extensive arguments from all counsel on this motion at the conference with parties (Tr. 7165-7251). The motion was denied, although certain limited procedures were fashioned to provide the Intervenors with specified information.

The Board issued an Order on March 11, 1983, revoking the LWA-2 proceeding and setting a single phase of hearings for Construction Permit issues. Discovery was directed to commence immediately on all CP issues as established by the enumerated admitted contentions. On the same date, the Staff issued its Safety Evaluation Report (SER) and served copies on all parties. On March 29, the Board, after considering the various proposed schedules submitted by the parties, entered a Scheduling Order which closed discovery on May 10, 1983. All parties engaged in discovery during the two month discovery period.

The Intervenors have had access to very substantial amounts of information during the course of this proceeding. They have had advance notice of and the opportunity to attend all of the 85 technical review meetings between the Applicants and the Staff. They were also free to attend the 25 ACRS meetings held since 1981. The Intervenors have also filed 19 set of interrogatories, 10 sets of admissions, and seven document production requests against the Applicants. Similarly large numbers of discovery requests have been filed against the Staff. Since the SER was issued, the Intervenors filed two additional sets of interrogatories and a request for production of documents against both

the Applicants and the Staff. Responses to those discovery requests have been provided, and extensive answers updating previous responses have also been filed. A reasonable opportunity for discovery has been afforded to the parties, and no good cause has been shown sufficient to disrupt the established hearing schedule.

At the Board's request, counsel for the Intervenors specified certain information which was required in connection with the Staff's SER or SSER.<sup>8</sup> The Staff is directed to furnish such existing information or data by May 20, 1983.<sup>9</sup> The Intervenors shall have five days after receiving such information to ask pertinent questions of the Staff's experts regarding the data, tables, computer codes and the

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8 Tr. 7180, 7190-7205.

9 Tr. 7207-10.

like.<sup>10</sup> The Applicants have agreed to make certain documents available in Washington, D. C. on Monday, May 16.<sup>11</sup>

FOR THE ATOMIC SAFETY AND  
LICENSING BOARD

*Marshall E. Miller*

Marshall E. Miller, Chairman  
ADMINISTRATIVE JUDGE

Dated at Bethesda, Maryland  
this 17th day of May, 1983.

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<sup>10</sup> Tr. 7212-14.

<sup>11</sup> Tr. 7219-21.