

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

Before
THE COMMISSION

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 SIERRA CLUB
PETITION TO THE COMMISSIONERS TO EXERCISE THEIR INHERENT
SUPERVISORY AUTHORITY TO DELINEATE THE SCOPE OF THE
LIMITED WORK AUTHORIZATION PROCEEDING FOR THE
CLINCH RIVER BREEDER REACTOR

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INTRODUCTION

The licensing proceeding for the Clinch River Breeder Reactor ("CRBR") was suspended in 1977, after President Carter determined that the project was not in the best interests of the United States. The current administration disagrees. After a five year hiatus, the licensing process has been revived. Applicants are seeking a Limited Work Authorization ("LWA"). Several prehearing conferences have been held (February 9-10, 1982, April 6, 1982, and April 20, 1982) to rule on new and modified contentions.

The Atomic Safety and Licensing Board in the above-captioned proceeding issued an Order Following Conference with Parties on April 14, 1982 which ruled on the admissibility of the contentions of Intervenors Natural Resources Defense Council, Inc. and the Sierra Club. The Board admitted Intervenors' original Contentions 2, 3, and 4 as submitted, and redesignated them as Admitted Contentions 1, 2, and 3, respectively. The Contentions are reproduced infra, pp. 8 to 19. April 14, 1982 Order, supra, at 3-4.

Contentions 1, 2, and 3 raise the central safety and site suitability issues for the CRBR:

1. Has the core disruptive accident ("CDA") been properly excluded from the design basis for the CRBR?
2. Has the source term for purposes of the site suitability review been properly established?

3. Have the risks of serious CRBR accidents, including most prominently the CDA, been accurately assessed for purposes of the National Environmental Policy Act of 1969 ("NEPA")?

4. If the CDA should be included within the CRBR design basis, can the CRBR meet its programmatic objectives?

These issues are interrelated because the source term proposed by the Applicants is based on the proposition that a CDA is not a "credible" accident within the meaning of 10 CFR §100.11, fn. 1.

Unresolved by the April 14 Conference, however, was the extent to which Contentions 1, 2, and 3 were litigable at the LWA-1 stage of the proceeding. The Board reconvened with the parties on April 20, 1982, for consideration of and rulings on those issues.

On April 22, 1982, the Board issued an additional Order Following Conference with Parties, See Appendix A, which severely restricted the scope of consideration of Intervenors' Contentions 1, 2, and 3 at the LWA-1 stage. See pp. 8-21 infra. Intervenors contend that the Board's narrow view of the appropriate scope of this LWA proceeding does not permit compliance with the requirements of the National Environmental Policy Act of 1969 (NEPA), 42 U.S.C. §§4231-4361, and does not permit the necessary findings for issuance of an LWA within the meaning and purpose of the LWA rule, 10 CFR §50.10(e).

As will be discussed in detail below, the effect of the Board's ruling applying the LWA rule to this proceeding was to prevent scrutiny of the extent to which the data and analyses already performed for the CRBR support or fail to support the conclusion that a CDA is of such exceedingly low probability that it can be excluded from the CRBR design basis.

The CRBR is the first of its kind. No Liquid Metal Fast Breeder Reactor ("LMFBR") of comparable size and type has ever been licensed in the U.S. It follows that neither the NRC Staff nor any Licensing Board has ever reviewed an application like this one nor approved a similar design. There is no long-established source term for breeder reactors comparable to that for LWRs. No Licensing board has ever determined the probability of a core disruptive accident for a comparable breeder reactor, or reviewed or approved a similar design, nor has the Advisory Committee on Reactor Safeguards ("ACRS").

The NRC Staff has not yet reviewed the CRBR design. It does not plan to issue a Safety Evaluation Report ("SER") until some time in 1983. No reactors of the "general size and type" of the CRBR have ever been designed, reviewed, built or operated in the U.S. See, Intervenors' May 6, 1982 Deposition of NRC Staff, at 39-40. (Pertinent pages are attached to Commissioners' copies at Appendix B for this and all subsequent citations to the deposition.)

Further compounding this situation, there are at the current time no definitive design criteria for judging the CRBR design. Nor are there general design criteria for fast reactors. The Applicants have proposed a set of broad, general criteria for CRBR which have not been approved by the NRC Staff. The Staff's review of these criteria will not be set out until the SER is published, well after the LWA proceeding. The general principle behind these proposed criteria is apparently that they should achieve comparability between the risks associated with light water reactors ("LWR") and the risks associated with CRBR. However, there is no way of judging whether the criteria will accomplish that, since they have not been finalized, nor has an analysis been performed by the Staff to match the existing LWR criteria against the proposed CRBR criteria. As the ACRS has observed, the questions of which LWR criteria should apply to CRBR, which should be adapted and how that should be accomplished, and what new criteria should be established in areas not covered by the LWR criteria, are not simple ones. See generally, Transcript, March 30-31, 1982 Meeting of the ACRS Subcommittee on CRBR.

Finally, it now appears very questionable that Congress will continue to authorize the Niagara of money required to complete the CRBR. The General Accounting Office has issued a report to Congress which concludes that the project is both hazardous and financially risky. Despite endemic steam

generator problems in LWRs and fast reactors alike, DOE is imprudently gambling on a steam generator design without sufficient testing, according to GAO. M. Mintz, "Citing Risks, GAO Urges Delay on Breeder Reactor," Washington Post, May 28, 1982, p. A9.

Given that there are no final design criteria, that there is no prior regulatory experience with a reactor of this general size and type, and given that the analyses to date of the CRBR design will be excluded from the hearing, the most definitive legitimate finding that the Board could make at the LWA-1 stage is that it is "feasible" to write hypothetical design criteria which, if met by a hypothetical reactor, would ensure that the site is suitable, that the risks of an accident are acceptable and that the programmatic objectives of DOE are met. That finding is so abstract as to be meaningless. It cannot support a decision to allow work to begin on a real reactor at a real site.

QUESTIONS PRESENTED

- I. Does the Licensing Board's limitation of the scope of the LWA proceeding for CRBR comply with the requirements of NEPA?
- II. Does the scope of the LWA proceeding as determined by the Licensing Board for CRBR permit reasoned site suitability findings under the LWA rule?

SUMMARY OF ARGUMENT

- I. The Licensing Board's limitation of the scope of this LWA proceeding does not comply with NEPA. The LWA Rule requires the Board to make all the NEPA findings that would otherwise be made at the construction permit stage. NEPA requires a detailed statement of all probable impacts of the proposed action to the fullest extent possible. The Board's refusal to consider available information on CRBR, a first-of-a-kind facility, contravenes NEPA requirements. The Board's refusal to fully consider the issue of inclusion of CDAs in the CRBR design basis at the LWA stage prevents confidence that the probable environmental impacts as described are complete. The inherent uncertainty surrounding the environmental impacts of CRBR call for a more thorough analysis.
- II. The scope of this LWA proceeding does not permit reasoned site suitability findings. The LWA Rule requires

reasonable assurance of site suitability. The Board's inappropriate use of a "design feasibility" standard proposed by the Applicants for this first-of-a-kind project prevents the reasonable assurance of site suitability required by the rule for an LWA and destroys confidence that any necessary design changes after full safety review will be inconsequential. The lack of previous experience with breeders argues for the use of all available information even at the LWA stage. Commission rules and decisions provide for such special treatment under these circumstances.

FACTS: THE LICENSING BOARD'S RULING

This section describes the Board's ruling with respect to each of the subsections of Intervenors' Contentions 1, 2, and

3. Contention 1(a) states:

1(a) Neither Applicants nor Staff have demonstrated through reliable data that the probability of anticipated transients without scram or other CDA initiators is sufficiently low to enable CDAs to be excluded from the envelope of DBAs.

Accepting in toto the arguments of the Applicants, the Board ruled that 1(a) is litigable at the LWA-1 stage, but that

the inquiry at this stage is limited to consideration of whether it is feasible to design CRBR to make HCDAs sufficiently improbable that they can be excluded from the envelope of design basis accidents for a reactor of the general size and type proposed. Specifically, discovery at the LWA-1 stage is limited to the following areas of concern:

1. The major classes of accident initiators potentially leading to HCDAs;
2. The relevant criteria to be imposed for the CRBRP;
3. The state of technology as it relates to applicable design characteristics or criteria; and
4. The general characteristics of the CRBRP design (e.g., redundant, diverse shutdown systems)

April 22, 1982 Order, supra, at 2-3.

The Board's Order does not explain why these four particular areas of concern are the specific ones and the only ones which it is appropriate to consider at the LWA-1 stage.

In fact, they are lifted verbatim from Applicants' Statement of Position in Regard to NRDC Contentions 1, 2, and 3 (at pp. 13-14) (Appendix C). That submission likewise does not explain why these four particular factors should delimit the scope of consideration of these issues at the LWA-1 stage.

The Board ruled, in addition, that NRDC could not inquire into the extent to which the CRBR design has succeeded in achieving the goal of ensuring that the occurrence of a CDA is an event of such exceedingly low probability that it need not be included in the design basis for the CRBR. Perhaps the best example of the nature of the Board's rulings is as follows:

MR. COCHRAN: In order for me to make a case with regard to whether it is feasible and within the state of the technology and so forth to site a reactor of the general size and type ... one still must go through the site suitability analysis and postulate a source term larger than anything deemed credible, and in order to determine what is deemed credible, ... one needs to look at the current available data with regard to computer analyses of CDAs. Those computer analyses by and large are CRBR specific.

Now, I fear, I desperately fear that when I ask questions on discovery that really go to the issue of feasibility for a reactor of the general size and type but ... am seeking data with respect to a specific design, that is, the best data that we have got for a general reactor of this size and type, that Staff and Applicants are going to come back to you and say no, that is beyond the scope.

JUDGE MILLER: We could give you the short answer, it would be beyond the scope, so don't bother to ask it in one of ten interrogatories. Live with what we have ruled because that is what we have ruled.

Transcript, April 20, 1982 ASLB Prehearing Conference, at 551-52. See, generally, Id. at 517-58 (Appendix D).

These four factors which have been posited by Applicants and subsequently adopted by the Board have only superficial relevance to the necessary determinations for an LWA. Consideration of "the major classes of accident initiators potentially leading to HCDAs" while necessary to determine whether the risks of a CDA have been properly treated by Applicants and Staff, is far from sufficient. The serious controversy for purposes of site suitability and NEPA determinations at the LWA-1 stage is whether the CDA is credible, which depends on the frequency with which those accident initiators can be expected to occur at CRBR and the frequency with which these can be expected to proceed to a CDA. Applicants have performed a probabilistic assessment, CRBRP-1, which addresses precisely those probabilities for CRBR, as well as an analysis of common mode failures. But under the Board's ruling, those sources of "available information" may not be considered at the LWA-1 stage because they are specific to the CRBR design.

As to "the relevant criteria to be imposed for the CRBRP," what those criteria are is certainly a relevant question, and one which the Staff has yet to decide upon, See infra; but the question which relates to the suitability of the site and NEPA analysis is whether CRBR will satisfy whatever criteria are eventually adopted. (Of course, if the criteria are "backfitted" to the plant, as appears to be the case, See

infra, then the satisfaction of them will not be a meaningful test.)

The Board's third permissible area of inquiry is "the state of technology as it relates to applicable design characteristics or criteria." Remarkably, the import of the Board's ruling is that virtually any technology may be considered except the technology of CRBR. If, by "state of technology", the Board means the technological ability to build, for example, a redundant, diverse shutdown system, that question is irrelevant. The real issue here is whether a redundant, diverse shutdown system, together with other safety features, affords sufficient reliability that CDAs are not credible. There can be little question but that the best "available information and review to date" on that subject is the analysis that has already been performed of the CRBR design. Under the Board's ruling, then, the best information on whether the safety systems of a plant of the general size and type proposed will satisfy whatever criteria are established cannot be considered at the LWA-1 stage.

Consistent with the discussion in the preceding paragraph, consideration of "the general characteristics of the CRBRP design" is insufficient to answer the important questions in this proceeding. The example the Board gives -- the existence of a redundant, diverse shutdown system -- is not contested. The kind of design issues which must be resolved in

order to determine whether the CDA can be excluded from the design basis, what the source term should be for CRBR and whether the CRBR is likely to meet its programmatic objectives are much more concrete. For example, the reactor vessel for CRBR has been designed to withstand an energetic CDA of 661 megajoules. If, in fact, a vessel which can withstand 1200 megajoules is needed, as specified in the May 6, 1976 letter to Applicants from the NRC Staff (Denise-Caffey letter), the cost and time required to refabricate the reactor vessel to comply with that higher standard have major implications for the ability of the CRBR to achieve its objectives and thus for the NEPA cost-benefit balance.

In effect, the Board's ruling contains the implicit presumption that general design characteristics like redundant diverse shutdown systems will effectively satisfy any criteria that might be adopted. That proposition has never been subjected to serious scrutiny, much less demonstrated with reasonable assurance.

The Board applied the same limitations set forth in the ruling on Contention 1(a) to Contentions 2(a)-2(c), 2(d), and 3(b)-3(d).

Contentions 2(a)-2(c) state:

2. The analyses of CDAs and their consequences by Applicants and Staff are inadequate for purposes of licensing the CRBR, performing the NEPA cost/benefit

analysis, or demonstrating that the radiological source term for CRBRP would result in potential hazards not exceeded by those from any accident considered credible, as required by 10 C.F.R. §100.11(a), fn. 1.

- a) The radiological source term analysis used in CRBRP site suitability should be derived through a mechanistic analysis. Neither Applicants nor Staff have based the radiological source term on such an analysis.

- b) The radiological source term analysis should be based on the assumption that CDAs (failure to scram with substantial core disruption) are credible accidents within the DBA envelope, should place an upper bound on the explosive potential of a CDA, and should then derive a conservative estimate of the fission product release from such an accident. Neither Applicants nor Staff have performed such an analysis.

- c) The radiological source term analysis has not adequately considered either the release of

fission products and core materials, e.g. halogens, iodine and plutonium, or the environmental conditions in the reactor containment building created by the release of substantial quantities of sodium. Neither Applicants nor Staff have established the maximum credible sodium release following a CDA or included the environmental conditions caused by such a sodium release as part of the radiological source term pathway analysis.

The Board ruled that Contentions 2(a)-2(c) are litigable at the LWA-1 stage, but subject to the same limitations set forth in the ruling on Contention 1(a):

The evidentiary record and its precedent discovery will be confined to considering whether the Staff's source term is likely to envelope the design basis accident envelope as defined under 1(a) for a reactor of the general size and type proposed.

April 22 Order, at 5.

Contention 2(d) states:

2(d) Neither Applicants nor Staff have demonstrated that the design of the containment is adequate to reduce calculated offsite doses to an acceptable level.

The Board ruled that Contention 2(d) is litigable at the LWA-1 stage, but subject to the limitations set forth in the ruling on Contention 1(a). April 22 Order, at 5-6.

Contentions 3(b)-3(d) state:

- b) Neither Applicants' nor Staff's analyses of potential accident initiators, sequences, and events are sufficiently comprehensive to assure that analysis of the DBAs will envelop the entire spectrum of credible accident initiators, sequences and events.
- c) Accidents associated with core meltthrough following loss of core geometry and sodium-concrete interactions have not been adequately analyzed.
- d) Neither Applicants nor Staff have adequately identified and analyzed the ways in which human error can initiate, exacerbate, or interfere with the mitigation of CRBR accidents.

The Board ruled that the matters in Contentions 3(b)-3(d) are litigable at the LWA-1 stage, but subject to the limitations set forth for Contention 1(a). April 22 Order, at 6-7.

The discussion above pertaining to the Board's ruling on Contention 1(a) applies equally to these additional contentions which have been subjected to the same limitations. The Board's ruling effectively precludes any meaningful consideration of the most important issues related to site suitability, the source term and the NEPA cost-benefit balancing. NRDC will be unable to make a case if we are not permitted to consider available data on CRBR.

While the Board's April 14, 1982 Order had admitted Intervenors' Contentions 1, 2, and 3 as submitted, in its April 22 Order the Board ruled that Contentions 1(b) and 3(a) should be deferred for consideration until after the LWA-1 hearing and partial initial decision.

Intervenors' Contention 1(b) states:

- 1(b) Neither Applicants nor Staff have established that Applicants' "reliability program" even if implemented is capable of eliminating CDAs as DBAs.
- (1) The methodology described in the PSAR places reliance upon fault tree and event tree analysis. Applicants have not established that it is possible to obtain sufficient failure mode data pertinent to CRBR systems to validly employ these techniques in predicting the probability of CDAs.
 - (2) Applicants' projected data base to be used in the reliability program is inadequate. Applicants have not established that the projected data base encompasses all credible failure modes and human elements.
 - (3) Even if all of the data described in Applicants' projected data base is obtained, Applicants have not established that CDAs have a sufficiently low probability that they may be excluded from the CRBR design bases.
 - (4) Applicants have not established that the test program used for their reliability program will be completed prior to Applicants' projected date for completion of construction of the CRBR.

The Board ruled that Contention 1(b) is deferred for consideration until after the LWA-1 hearing and partial initial decision because it "involves matters of detailed design review and safety evaluation which ... is more appropriately considered at the CP stage." April 22 Order, at 5.

The "reliability program" referred to is described in Appendix C of the PSAR for CRBR. It is the basic analytical tool that is supposed to provide assurance that a CDA for CRBR is an exceedingly unlikely event. It is inconceivable to us

that the Board can find reasonable assurance that the CDA has been properly treated even at the LWA-1 stage without reliance on the "reliability program." However, the mere existence of such a program does not provide a reasoned basis for the conclusion that CDAs are not credible. Intervenors contend in 1(b) that Applicants' reliability program cannot work because, inter alia, the data base is insufficient to generate reliable conclusions. If this contention is correct, all assumptions concerning the excludability of CDAs from the design basis are incorrect, and an LWA cannot issue. Yet, under the Board's ruling, consideration of this crucial issue is forbidden at the LWA stage, and Intervenors are denied discovery on it. The effect of the Board's ruling is that the effectiveness of the reliability program is deemed irrelevant to the NEPA and site suitability analyses -- a result which is impossible to rationalize.

Intervenors' Contention 3(a) states:

3. Neither Applicants nor Staff have given sufficient attention to CRBR accidents other than the DBAs for the following reasons:
 - a) Neither Applicants nor Staff have done an adequate, comprehensive analysis comparable to the Reactor Safety Study ("Rasmussen Report") that could identify other CRBR accident possibilities of greater frequency or consequence than the accident scenarios analyzed by Applicants and Staff.

The Board ruled that consideration of Contention 3(a) should be deferred until after the LWA-1 stage. April 22 Order, at 6.

This ruling is an excellent example of the Board's refusal to consider "available information and review to date." There exists a report, CRBRP-1, which includes a probabilistic risk analysis of accident probabilities for CRBR, along the lines of the Reactor Safety Study. Intervenors allege that this study devotes insufficient attention to accidents other than those within the design basis ("DBAs"), but we are prevented from considering that study or its sufficiency precisely because it deals with the facility which is seeking an LWA -- the CRBR.

The Commission has made it clear that probabilistic assessments of accident risks are an integral part of its NEPA reviews. In its June 13, 1980, Policy Statement on Nuclear Power Plant Accident Considerations Under NEPA, the Commission stated:

In the analysis and discussion of such risks, approximately equal attention shall be given to the probability of occurrence of releases and to the probability of occurrence of the environmental consequences of those releases.

. . . .

Detailed quantitative considerations that form the basis of probabilistic estimates of releases need not be incorporated in the Environmental Impact Statement but shall be referenced therein.

45 Fed. Reg. 40103. The requirement that detailed probabilistic estimates shall be referenced in EISs clearly implies that such estimates shall exist, and that they are to

form part of the NEPA review. In the instant case, such a study -- CRBRP-1 -- exists. Intervenors contend it is inadequate, but the Board will not assess the adequacy of that or any other study at the LWA-1 stage because it is based on the specific design of CRBR.

The Board ruled that Intervenors' Contentions 2(f)-2(h) can be the basis for discovery at the LWA-1 stage.

Intervenors' Contentions 2(f)-2(h) state:

- f) Applicants have not established that the computer models (including computer codes) referenced in Applicants' CDA safety analysis reports, including the PSAR, and referenced in the Staff CDA safety analyses are valid. The models and computer codes used in the PSAR and the Staff safety analyses of CDAs and their consequences have not been adequately documented, verified or validated by comparison with applicable experimental data. Applicants' and Staff's safety analyses do not establish that the models accurately represent the physical phenomena and principles which control the response of CRBR to CDAs.
- g) Neither Applicants nor Staff have established that the input data and assumptions for the computer models and codes are adequately documented or verified.
- h) Since neither Applicants nor Staff have established that the models, computer codes, input data and assumptions are adequately documented, verified and validated, they have also been unable to establish the energetics of a CDA and thus have also not established the adequacy of the containment of the source term for post accident radiological analysis.

The Board ruled that Contentions 2(f)-2(h) "are the basis for discovery at the LWA-1 stage as to the codes used, including their validity, foundation, proof and the like."

April 22 Order, at 6. This ruling, although it lacks logical consistency with the Board's other rulings, was based upon the Applicant's admission that it intended to use these codes to at least some as yet undefined but limited extent. Transcript, April 20, 1982 Prehearing Conference, at 609 (Remarks of Mr. Edgar) (Appendix D). Thus, the Applicants were permitted to determine the scope of the proceeding. The codes which they choose to rely upon are admissible to the extent they choose to rely upon them. However, NRDC is not permitted, by the Board's previous rulings, to inquire into any CRBR-specific data or analyses other than those specifically relied upon by Applicants. In addition, the Board ruled that Intervenors may obtain discovery from Applicants regarding their codes, but may not obtain discovery from the Staff regarding their independent evaluations of the accuracy of Applicants' codes. The Board deferred a ruling on the ultimate relevance of these issues at the LWA-1 stage. Transcript, April 20, 1982 Prehearing Conference, at 613-16.

The Staff is using these codes in their ongoing discussions with Applicants. See, Transcript, Intervenors' May 6, 1982 Deposition of NRC Staff, at 126, (Appendix B). The codes are fundamental to the merits of Applicants' case and to Intervenors' contentions regarding CDAs. Yet Intervenors are now denied inquiry of the Staff even as to whether they concur in Applicants' analyses with the codes.

The Licensing Board ruled that Intervenors' Contention 2(e) is litigable and subject to discovery at the LWA-1 stage as admitted, April 22 Order, at 6, so that contention is not in controversy here.

The overall effect of the Board's ruling is that the scope of the LWA-1 proceeding is defined by the scope of the affirmative case that Applicants choose to make: generalized and abstract assertions that it feasible to design a breeder reactor to make CDAs sufficiently improbable. Intervenors wish to show that many of those generalized findings do not stand up to scrutiny when available, concrete data are applied against them. The Board does not permit us to make that case, because it depends to some extent on "detailed design considerations" for CRBR.

Applicants have posited -- and the Board has adopted -- the mystifying proposition that "available information and review to date ... for a reactor of the general size and type proposed" cannot include information on the proposed reactor -- even if that proposed reactor is the only one of the general size and type for which concrete information is available. Intervenors submit that such imposed blindness to pertinent data is not the intent and purpose of the LWA rule, and will in fact make it impossible under the circumstances for the Board to make the reasoned findings of site suitability and acceptable environmental costs which that rule requires.

DISCUSSION

I. THE LICENSING BOARD'S SEVERE LIMITATION OF THE SCOPE OF THE LWA PROCEEDINGS FOR CRBR VIOLATES NEPA REQUIREMENTS.

Before the Licensing Board can issue a Limited Work Authorization (LWA), it must make all of the findings required by 10 CFR §§51.52(b) and (c) that would otherwise be made prior to issuance of the construction permit. 10 CFR §50.10(e)(2)(i). In addition, the Staff must have completed a final environmental impact statement ("EIS") on the issuance of the construction permit ("CP"). 10 CFR §50.10(e)(1). The Board must, among other things:

- (1) Decide those matters in controversy among the parties within the scope of NEPA and Part 51;
- (2) Issue a partial initial decision that may include findings and conclusions which affirm or modify the content of the final environmental impact statement prepared by the Staff;
- (3) Determine whether the requirements of sections 102(2)(A), (C), and (E) of NEPA and Part 51 have been complied with;
- (4) Independently consider the final balance among conflicting factors contained in the record of the proceeding with a view to determining the appropriate action to be taken;
- (5) Determine, after weighing the environmental, economic, technical, and other benefits against environmental and other costs, and considering available alternatives, whether the construction permit or license to manufacture should be issued, denied, or appropriately conditioned to protect environmental values; and
- (6) Determine, in a contested proceeding, whether, in accordance with Part 51, the construction permit should be issued as proposed.

10 CFR §§51.52(b) and (c).

The Commission made it clear when it proposed the new LWA rule in 1974 that it intended NEPA findings to be complete before issuance of an LWA. The Commission said that a Limited Work Authorization could issue

if the presiding officer ... had, after appropriate hearing, made all the findings required for issuance of a construction permit with respect to the NEPA aspects of the construction permit proceeding. The required NEPA findings include

. . . .

(2) a finding, after independent consideration of the final NEPA balance among conflicting factors ... that with respect to NEPA matters, the construction permit should be issued. ...

39 Fed. Reg. 4582 (Feb. 5, 1974) (emphasis added). See, Boston Edison Company (Pilgrim Nuclear Power Station, Unit 2)

ALAB-632, 13 NRC 91, 92 (1981). The LWA environmental findings must constitute the complete environmental record for the CRBR licensing proceedings. In every case Intervenor's have found, the LWA partial decision on environmental issues has been incorporated into the CP decision itself. See, e.g., Houston Lighting and Power Company (South Texas Project, Units 1 and 2) LBP-79-10, ~ NRC 439 (1979). It is at the LWA-1 stage, therefore, that the Board is supposed to fully address the compliance of CRBR with NEPA.

The Licensing Board declines to comply with this requirement. The Board's April 22 Order states, at p. 4:

[A]lthough a full NEPA review is mandated for the LWA-1 hearing phase, the finality of this review must of necessity await the completion of the CP evidentiary hearing where full design details and supportive analyses of the facility will be critiqued.

The Board's cryptic distinction between "full" and "final" NEPA review is nowhere suggested in pertinent regulations, or cases, and clearly contravenes the Commission's explanation of the LWA rule, supra, and the clear language of the rule itself:

No such authorization shall be granted unless the staff has completed a final environmental impact statement on the issuance of the construction permit as required by Part 51 of this chapter.

10 CFR §50.10(e)(1) (emphasis added). Similarly, the Board must make "all the findings required by §51.52(b) and (c) ... to be made prior to issuance of the construction permit for the facility. ..." 10 CFR §50.10(e)(2)(i). Subsections 51.52(b) and (c), in turn, call for complete NEPA findings, consideration of the final NEPA balance among all the relevant factors, and a determination whether, with respect to NEPA matters, the CP should be issued. Nowhere in the pertinent regulations is there the slightest intimation that, as Applicants asserted and the Board apparently accepted, "information necessary for environmental ... [LWA] findings can and should be substantially more limited than those for the CP." Applicants' Statement of Position in Regard to NRDC Contentions 1, 2, and 3 (April 15, 1982), at 6 (Appendix C). This assertion is flatly wrong.

Even if the NRC had wished to "substantially limit" the environmental findings at the LWA-1 stage when it promulgated the LWA rule, it could not do so through administrative rulemaking as a matter of law. NEPA states, in the opening lines of its operative section: "The Congress authorizes and directs that, to the fullest extent possible: (1) the policies, regulations, and public laws of the United States shall be interpreted and administered in accordance with the policies set forth in this chapter" 42 U.S.C. §4332(1). Council on Environmental Quality regulations implementing NEPA state:

The phrase "to the fullest extent possible" in section 102 means that each agency of the Federal Government shall comply with that section unless existing law applicable to the agency's operations expressly prohibits or makes compliance impossible.

40 CFR §1500.6. Also:

Parts 1500-1508 of this Title provide regulations applicable to and binding on all Federal agencies for implementing [NEPA] except where compliance would be inconsistent with other statutory requirements.

40 CFR §1500.3 [emphasis added]. Thus, it is clear that NRC could not, through administrative rulemaking such as promulgation of the LWA rule, limit or in any other respect modify NEPA requirements. Only Congress may affect such modifications; it has not done so with respect to the LWA rule.

NEPA requires not only a "detailed statement" of environmental impacts, 42 U.S.C. §4332(2) (C), but also that agencies explore the environmental ramifications of their proposed actions to the "fullest extent possible," 42 U.S.C. §4332(1), Scientists' Institute for Public Information v. Atomic Energy Commission, 481 F.2d 1079, 1092 (D.C.Cir. 1973). In discussing the proper scope of the environmental impact statement for the LMFBR Program, of which CRBR is a part, the U.S. Court of Appeals for the D.C. Circuit emphasized this point:

[NEPA] "must be construed in the light of reason if it is not to demand what is, fairly speaking, not meaningfully possible" But implicit in this rule of reason is the overriding statutory duty of compliance with [environmental] impact statement procedures "to the fullest extent possible."

Id., quoting NRDC v. Morton, 458 F.2d 827, 834 (D.C. Cir. 1972).

The Board's refusal at the LWA-1 stage to go beyond abstract considerations of design feasibility also violates the NEPA requirement that the impacts of the "proposed action" be assessed. The proposed action in the present instance is construction of the CRBR plant -- not a hypothetical or "feasible" design. The Commission made it clear when it promulgated the LWA rule that it did not intend the NEPA hearing to be limited to considerations of design feasibility:

[S]ufficient information regarding the proposed plant is required to be included in ... the record of the NEPA hearing in order

to conduct a reasonable cost-benefit analysis as required by NEPA.

39 Fed. Reg. 14507 (April 24, 1974) (emphasis added).

Indeed, the FES which is to form the basis for the environmental review is for CRBR -- not a hypothetical design. Whether a hypothetical 350-mW LMFBR can be designed to satisfy hypothetical criteria intended to ensure that CDAs are sufficiently improbable is not entirely irrelevant, but neither does it answer the pertinent NEPA question: Will the proposed action -- construction of CRBR -- result in acceptable environmental risks compared to the benefits? This overarching NEPA question cannot be answered without first answering the question: Does the design of the CRBR make CDAs sufficiently improbable? The answer to this question is absolutely key to the environmental, site suitability, and cost/benefit findings which are necessary for an LWA decision.

There is no dispute that the potential risks and consequences of a CDA are a major issue in the CRBR licensing proceeding. The ACRS Subcommittee on CRBR has made its concern regarding the CDA issue abundantly clear in recent meetings:

MR CARBON [Subcommittee Chairman]: I think at least some people within the technical community would maintain that an energetic event -- core meltdown with an energetic release coming from recriticality or some such thing could maybe happen....

Transcript, March 30, 1982, Meeting of the ACRS Subcommittee on CRBR, at 44 (Appendix E).

MR. MORRIS [NRC Staff]: I agree that one of the main thrusts of our review must be to assure that CDA does not occur or at least is very improbable, and those more specific requirements or design measures that will be built into Clinch River will be designed just for that purpose.

A large part of our review is related to avoiding CDAs.

Id. at 99

MR. CHECK [NRC Staff]: Whether the CDA is a Class 9 or a DBA is an issue, a contention.

That, of course, has implications, very direct implications on what the source term itself should be; and that is why we are re-examining what was done before and seeing if we can do less and still meet responsibility [sic] requirements for LWA-1 findings.

Id. (March 31, 1982) at 124.

MR. MARK [Subcommittee Member]: What we are saying is we have to understand something about the progress of such an event. We have not been quite able to decide whether it is a design-basis event or not a design-basis event. We have not been able to decide whether it is a likely event or an unlikely event. But we have decided that we must understand it.

We are going to have to face up, however, at some point to the extent to which we insist that this event be prepared for in the design. Is it or is it not design basis?

In 1974, I believe it was a design basis. In 1976 it was set aside as not a design basis. Yesterday we heard it is not design basis. Usually, we do not really discuss things which are not design bases nor feel that it is necessary.

Here, for some reason not totally clear to me, we are acting as if it were.

Transcript, May 5, 1982, Meeting of the ACRS Subcommittee on CRBR, at 381-82 (Appendix F).

It is also beyond dispute that the matter is not yet resolved:

MR. CHECK: You said something about how it is classified here, whether (a CDA) is DBA or not. While I am not the ultimate historian, I think it has never really been classified as a design basis event. It has skirted it; it has come close. I think we are prepared to say that it is not a design-basis event without being able to prove that today, without wishing to make that case today.

Ultimately, we will have to, we know that. And we will be prepared at the time of our SER to defend our position more fully. But for now, we state it as a requirement and an objective that the CDAs will not be design-basis events. And I believe that you will see the treatment we are giving them is consistent with that beyond the design-basis classification.

Id. at 382-83. See also, U.S. Dept. of Energy, Draft Environmental Impact Statement on the LMFBR Program (Supplement to ERDA-1535) (Dec. 1981, pp. 131-36). On May 27, 1977, the Staff wrote to Applicants (Letter from Richard P. Denise to Lochlin W. Caffey):

As indicated in the Staff's letter of March 30, 1977, we are unable to agree with your analyses, evaluations, and conclusions for CRBRP on the accommodations of a core meltdown. The principal reasons for this position is [sic] that there is an insufficient technical basis to substantiate many of your claims. The phenomena and scenarios associated with the accident are complex, and uncertainties in these are neither addressed by technical information nor enveloped by conservative assumptions.

Essentially nothing has changed concerning these uncertainties and insufficiencies of data since that 1977 letter. NRC has not yet resolved the issues and it admits as much, supra. The only real difference now is that the Staff is attempting to use the LWA rule to allow work to begin without resolving these issues, despite the fact that they are central to the NEPA analysis.

MR. CHECK: I am trying to string together a history and some rationalization for a logical approach to this which, quite frankly, is aimed at describing that minimum, that minimum that we must do for LWA-1 purposes.

. . . .

... [W]e are re-examining what was done before and seeing if we can do less and still meet responsibility [sic] requirements for LWA-1 findings.

Transcript, March 31, 1982, Meeting of the ACRS Subcommittee on CRBR, at 123-24 [emphasis added]. The following exchange evidences the ACRS's concern with this "minimum findings" approach by the NRC Staff:

MR CHECK [NRC Staff]: If we proceed down this path of minimum finding, we are going to be leaning toward the finding of feasibility.

MR. OKRENT [Subcommittee Member]: I think that is an inappropriate path if that is really the one you are planning to take for a variety of reasons, many of which have been said before, even at the Supreme Court.

. . . .

You have to have in mind, it seems to me, a reactor that resembles the one that the Applicant has in mind or it is just not ... meaningful --

Id. at 135-136.

If the Staff and Applicants are wrong about the probability of CDAs, it is most likely that the postulated source term does not bound all credible accidents. If the source term is wrong, the risk analysis and the Summary of Radiological Consequences of Postulated Accidents in Table 7.2 of the FES for CRBR are wrong, so NEPA and 10 CFR §§50.10(e)(2)(i) and 51.52(b) and (c) are not satisfied. Given the magnitude and obvious implications of the CDA issue for the

LWA NEPA analysis, it is imperative that the issue be decided fully and at the earliest possible stage. The Board's cramped view of the appropriate scope of the CDA issue at the LWA stage prevents confidence that the probable environmental impacts as described are complete, as NEPA requires.

The LWA rule was not intended to facilitate the evasion of NEPA requirements for an EIS prior to major federal actions. Indeed, such a purpose would be legally proscribed, supra. The purpose was rather to impose a structure on the previously ad hoc granting of exemptions under 10 CFR §50.12(a) to the requirement of 10 CFR §50.10(c) that prohibits commencement of construction of a nuclear power plant until a construction permit has been issued. When it proposed the new rule, the AEC commented:

The amendments ... are intended to provide a more uniform basis for determining the extent to which limited site activities should be permitted prior to the issuance of a construction permit for a power reactor. They are designed to facilitate public participation in that process, to assure appropriate consideration of NEPA matters and to provide for timely decision-making.

39 Fed. Reg. 4582 (Feb. 5, 1974) (emphasis added). Rejecting suggestions remarkably similar to those of Applicants in the instant case, the Commission stated when it finally promulgated the rule:

A number of comments ... suggested that the provisions in §50.10(e) requiring a full NEPA review and hearing prior to grant of authorization were unnecessary and would

unduly delay plant construction. The Commission believes, however, that such provisions, which facilitate public participation and ensure appropriate consideration of NEPA matters, are in the public interest and should be retained in the rule.

39 Fed. Reg. 14507-08 (April 24, 1974) (emphasis added).

This rulemaking history of the LWA rule casts substantial doubt on the Licensing Board's present interpretation of it. The rule does not provide for partial, or incomplete, or "threshold" NEPA findings, as Applicants and the Board would have it. It provides for full NEPA review of the proposed plant. The LWA rule certainly does not provide that Applicants can define the precise limitations of the LWA hearing and preclude Intervenors from fully discussing issues -- such as CDAs -- which are the very core of NEPA considerations in this case. Rather, the rule is designed to facilitate public participation in the NEPA decision-making process, and to assure appropriate consideration of NEPA matters.

NRDC is aware that, in the licensing of light water reactors, design-specific safety data is generally deferred until the construction permit stage when a limited work authorization has been requested. It is possible to make the requisite NEPA findings without that detailed, design-specific safety data because for LWRs there are (1) established general design criteria, and an array of regulations and regulatory guides which govern the design of such plants (Appendix A to 10

CFR Part 50), and (2) years of experience with reactors of the same general size and type. Together, those two factors afford reasonable assurance that nothing discovered at the construction permit stage will make the site unsuitable or fundamentally alter the NEPA analysis of risks and the cost-benefit balancing. In other words, established regulatory criteria and experience afford reasonable certainty that the LWA findings will prove to be reasonably correct.

The extent to which LWA findings are based on prior experience is apparent in the cases. LWA decisions typically reference previously-licensed reactors as evidence supporting the finding that the proposed facility will meet environmental and site suitability guidelines. See, e.g., Gulf States Utilities Company (River Bend Station, Units 1 and 2), LBP-75-50, 2 NRC 419 (1975): "The new containment design concepts are refinements of previously approved boiling water reactor facilities now in operation or under construction." Id. at 456. Also: "Other nuclear power plants within the tectonic region have been designed for similar seismic conditions." Id. at 459. See also, Public Service Company of Indiana, Inc. (Marble Hill Nuclear Generating Station, Units 1 and 2), LBP-77-52, 6 NRC 294, 343 (1977); Washington Public Power Supply System (WPPSS Nuclear Project Nos. 3 and 5), LBP-77-25, 5 NRC 964, 1005 (1977); Tennessee Valley Authority (Hartsville Nuclear Plant, Units 1A, 1B, 2A, and 2B),

LBP-76-16, 3 NRC 485, 535 (1976), Houston Lighting and Power Company (South Texas Project, Units 1 & 2), LBP-75-46, 2 NRC 271, 328 (1975).

In addition, NEPA itself requires reasonable confidence that environmental findings at the LWA stage will remain valid. If substantial changes in the proposed action or significant new circumstances or information relevant to environmental concerns significantly diminish the validity of the NEPA findings, the environmental impact statement must be supplemented and recirculated, 40 CFR §1502.9(c), Natural Resources Defense Council v. Morton, 337 F. Supp. 170 (D.C.D.C. 1972). In other words, if subsequent developments make it clear that the original environmental findings were inadequate, those inadequacies are not overlooked, but must be remedied -- the correctness of the environmental assessment is important to the NEPA process. While the supplementation procedures underscore the importance of accuracy and completeness, they do not constitute "an excuse for partial compliance the first time around." W. Rodgers, Environmental Law 774 (1977). "A supplemental statement is, by definition, a late statement" Id. As such, it can rarely play the role in agency decision-making that is the true purpose of the EIS procedures, 40 CFR §1502.1. "Supplements should be discouraged by a judicial insistence on an early statement and a definitive statement on the first attempt." W. Rodgers, supra, at 774.

Thus, the possibility of later supplementation of the LWA environmental findings in the instant case does not excuse partial compliance with NEPA at the LWA stage, as argued by Applicants, Staff, and the Board.

In the instant case, there is no basis for confidence in the correctness of LWA findings based on a cursory review of the "feasibility" of designing a hypothetical breeder reactor, since there is no experience in licensing or operating reactors of the general size and type of CRBR. There is nothing to which the Board can point and say, "Experience to date with 250-500-mW LMFBRs gives some assurance that our assumptions regarding the probability of CDAs is correct."

In addition, there are no established LMFBR general design criteria, similar to those in Appendix A to 10 CFR Part 50 for LWRs, by which to judge the adequacy of CRBR. The Staff plans to first issue final Principal Design Criteria for CRBR at the same time it issues its Safety Evaluation Report ("SER"). See, Transcript, March 30-31, 1982, Meeting of the ACRS Subcommittee on CRBR, at 13-16, 21-25, 50 (Appendix E). In fact, the criteria by which CRBR is supposedly to be judged are being developed at the same time that the design for the plant is being finalized, and apparently on the basis of the plant's design rather than vice versa. As ACRS subcommittee member Myron Bender stated: "I think your timing is wrong. I think you have to get [the design criteria] out before you put

it in the SER." Id. at 31. "[T]here's no basis for judging unless you put the judgment criteria out before you present your case." Id. at 33.

Both the staff and the ACRS Subcommittee made it clear that the criteria being developed were heavily dependent on the design of CRBR. Id. at 57, 61. Subcommittee Chairman Max Carbon acknowledged that the way the criteria were being developed raised questions as to their meaningfulness when he remarked:

[W]e have to be sure that these are viewed as standards by which CRBR is judged, rather than -- I think his words were something along the lines of prepared to help justify what we are doing.

Id. at 63.

Moreover, there is no basis for the choices of the principal design design criteria which have been proposed by Applicants and are being considered by Staff. This omission has also been noted by the ACRS:

The criteria are kind of bald right now. They just say, here are the criteria. But why they are criteria leaves a lot to the imagination, and while I am very comfortable with what I understand about LWRs, I do not think I have any reason to believe that anybody here should have less discomfort than me with the question of whether I understand why LMFBRs have certain criteria.

Id. at 64 (Remarks of Mr. Bender). Once again, Staff responded that it would defend its choice of criteria when it issues its SER. Id. at 65.

Under the instant circumstances -- no experience, no standards -- there can be no confidence in the correctness of the Staff's assumption, and the Board's acceptance, of a "design feasibility" standard to exclude CDAs from the CRBR design basis. Deferring full consideration of the issue until the CP stage presents the very substantial possibility that the NEPA analysis, and therefore the LWA findings, will be fatally flawed, and that major design changes will be required after a more thorough safety review. In the LWA proceeding for River Bend Station, the Licensing Board Panel held that one of the findings required for an LWA was that

3) It is unlikely that any costs incurred in modifying the plant to meet [the standards] would be so large as to seriously disturb the cost-benefit or plant-vs-alternatives balances reached in the environmental hearings.

Gulf States Utilities Company (River Bend Station, Units 1 and 2), LBP-75-50, 2 NRC 419, 461 (1975). The Board found the standards met in that case. The other two findings the Board required were (1) that there is reasonable assurance that the plant can be designed to conform to the standards, and (2) that if it is so designed the radiological impact will be of small weight in the environmental balance. In the instant case, finding number 3 cannot possibly be met. If Staff's assumptions with regard to the probability of a CDA for a hypothetical breeder reactor prove incorrect for the CRBR, it is most likely that required design changes in CRBR would

"seriously disturb the cost-benefit or plant-vs-alternative balances reached in the environmental hearings." Staff has acknowledged that likelihood: "Between Class 9 and Class 8 and below that is a lot of money, a different design." Transcript, March 30-31, 1982 Meeting of the ACRS Subcommittee CRBR, at 104 (Remarks of Mr. Check). Likewise: "Whether the CDA is a ... DBA ... has implications, very direct implications on what the source term itself should be." Id. at 124.

NEPA requires that uncertainty be factored into environmental reviews, NRDC v. NRC, No. 74-1486, ___ U.S. App. D.C. ___ (April 27, 1982) slip op. at 11, 34, 46, and that the "cost of uncertainty -- i.e., the costs of proceeding without more and better information" be considered in the decisionmaking process, Alaska v. Andrus, 580 F.2d 465, 473 (1978). Furthermore, a "worst case analysis" is required "where there are gaps in relevant information or scientific uncertainty," North Slope Borough v. Andrus, 486 F.Supp. 332, 346 (1979), 40 CFR §1502.22.

In the instant case, there are crucial information gaps and scientific uncertainty. The Staff admits that it cannot "find" the rationale for the decision that was made (in the May 6, 1976, Denise-Caffey letter) to exclude CDAs from the CRBR design basis:

MR. CHECK: [S]ome of our difficulty stems from the lack of that document which describes the bases for the decisions that were made.

Transcript, March 30-31, 1982, Meeting of the ACRS Subcommittee on CRBR, at 31. The Staff also admits that it does not know how to assure the exclusion of CDAs:

MR. CHECK: I doubt there is anybody in this room who would not grab at the mechanism for excluding the CDA. I guess what we are doing is we are confessing to you we do not know how to do that.

Id. at 102. While the 1977 FES for CRBR deals perfunctorily with Class 9 accidents in section 7.1, the uncertainty surrounding the issue and the crucial relationship it bears to the assessment of the potential adverse environmental impacts of CRBR demand much more thorough analysis. Treatment of the issue to date does not begin to comply with the Commission's June 13, 1980, Policy Statement, 45 Fed. Reg. 40102, which requires probabilistic estimates of the risks of accidents including those which lead to core melting.* Id. at 40103. It would be the height of arbitrary and capriciousness to say that this post-TMI accident analysis does not apply to CRBR because the original application predates the change in policy, considering the 5-year hiatus in the CRBR proceeding and the first-of-a-kind nature of the question raised.

In NRDC v. NRC, supra, (Table S-3 case), the D.C. Circuit reaffirmed the importance of factoring uncertainty into

* While the Commission's Policy Statement notes the CRBR review as an example of a case where Class 9 accidents were considered (45 Fed. Reg. 40102), that reference should not be taken as an indication that the consideration therein was sufficient for purposes of compliance with the new policy. NRDC argues that it clearly was not.

environmental reviews when it invalidated the Commission's Table S-3 Rule for assessing the environmental impacts of the nuclear fuel cycle. The court found that NRC had improperly prevented licensing boards from considering certain environmental costs of proposed projects by virtue of its assumption in Table S-3 that no radioactivity would be released from a nuclear waste repository once it was sealed. The court found that

the risks entailed by the possible failure to develop a successful waste-disposal system were never part of any "balancing." They were considered alone, in a vacuum, and then excluded from the licensing boards' balancing.

Slip op. at 46. Because of the great uncertainty surrounding the waste disposal issue, the court found it improper for the Commission to exclude it from cost-benefit balancing on the grounds that waste disposal would have zero environmental impact. In the instant case, the Board's refusal to fully consider the CDA issue at the LWA-1 stage has the same effect that Table S-3 had: it prevents the Board from meaningfully including the environmental effects of CDAs -- or the uncertainty concerning them -- in the NEPA balancing which it must complete before issuing an LWA. By so limiting its consideration of CDAs in its balancing at the LWA-1 stage, the Board "directly contravenes NEPA's requirement that environmental costs be considered 'at every stage where an overall balancing of environmental and nonenvironmental factors

is appropriate.'". Id. at 46, quoting Calvert Cliffs' Coordinating Committee v. AEC, 449 F.2d 1109, 1118 (D.C. Cir. 1971). Such overall balancing is clearly required at the LWA-1 stage by 10 CFR §§50.10(e)(3) and 51.52(c).

The need to fully consider the CDA issue at the LWA-1 stage of this proceeding is dictated not only by the requirements of the LWA rule, but also by analogous considerations in NEPA case law. The licensing of nuclear power plants in (at least) three stages makes each plant a multistage project as far as federal government permitting procedures are concerned. The U.S. Court of Appeals for the Second Circuit has said, in regard to timing of analysis in multistage projects:

[T]he extent to which treatment of a subject in an EIS for a multistage project may be deferred, depends on two factors: (1) whether obtaining more detailed useful information on the topic ... is "meaningfully possible" at the time when the EIS for an earlier stage is prepared, see Natural Resources Defense Council v. Morton, 458 F.2d at 837, and (2) how important it is to have the additional information at an earlier stage in determining whether or not to proceed with the project, see Natural Resources Defense Council v. Callaway, 524 F.2d at 88.

County of Suffolk v. Secretary of Interior, 562 F.2d 1368, 1378 (2d Cir. 1977). With respect to the first criterion presented by the court, it is clear in the instant case that Applicants and Staff already have very substantial detailed useful information on the CRBR design that would facilitate a more

meaningful determination concerning the probability of CDAs and their environmental consequences. Obtaining the information is thus no obstacle. The problem is, the Board declines to look at that information at the LWA-1 stage because it interprets the LWA rule to mean that plant-specific information cannot be considered.

The second part of the County of Suffolk test -- importance of the additional information at an earlier stage -- is also clearly met in this case, as discussed above. The Board cannot make reasoned LWA findings without additional information which confirms or denies Staff's CDA assumptions.

II. THE LICENSING BOARD'S INTERPRETATION OF THE SCOPE OF REQUIRED LWA FINDINGS DOES NOT PERMIT REASONED SITE SUITABILITY FINDINGS UNDER THE LWA RULE.

Before issuing an LWA, the Board must find:

based upon the available information and review to date, [that] there is reasonable assurance that the proposed site is a suitable location for a reactor of the general size and type proposed from the standpoint of radiological health and safety considerations under the Act and rules and regulations promulgated by the Commission pursuant thereto.

10 CFR §50.10(e)(2)(ii).

In LWA proceedings for light water reactors, licensing boards have usually received evidence and made findings regarding compliance with every portion of 10 CFR Part 100, the applicable Commission siting regulations.

In virtually every case, the LWA Partial Initial Decision on site suitability has been incorporated into the CP decision, with only siting issues specifically left unresolved at the LWA stage to be litigated at the CP stage. See, e.g., Tennessee Valley Authority (Yellow Creek Nuclear Plant, Units 1 and 2), LBP-79-39, 8 NRC 602 (1978). Furthermore, despite Applicant's assertions that the CP decision is only preliminary, both Commission precedent and policy make it clear that the issue of site suitability is essentially closed -- except for significant new information -- after the construction permit stage. See, e.g., Houston Lighting and Power Company (South Texas Project, Units 1 and 2), LBP-79-10, 9 NRC 439 (1979). This conclusion is consistent with the Commission's recent

Statement of Policy on Conduct of Licensing Proceedings, CLI-81-8, 13 NRC 452 (1981), calling for more complete agency review and decision at the construction permit stage:

[I]n ideal circumstances operating license proceedings should not bear the burden of issues that ours do now. Improvement on this score depends on more complete agency review and decision at the construction permit stage. That in turn depends on a change in industrial practice: submittal of a more nearly complete design by the applicant at the construction permit stage.

Id. at 458.

While site suitability findings at the LWA stage are generally based on a reactor of the general size and type proposed, rather than on the proposed reactor, that distinction renders the findings meaningless in the case of CRBR because no reactor of the general size and type proposed has ever been licensed. The Board has no experience whatsoever which provides reasonable assurance that its partial initial decision on site suitability will stand up after more thorough safety review. The Board cannot rely on its standardized assumptions derived from LWR experience. For example:

- 1) The Board cannot apply Part 50 design criteria to CRBR because it has not yet been decided which of them apply to LMFBRs, or what additional criteria should be applied to LMFBRs. (See, Transcript, March 30-31 Meeting of the ACRS Subcommittee on CRBR.)

- 2) The Board can have no confidence that the proposed source term for CRBR site suitability analysis (the standard LWR source term plus an addition of one percent of plutonium inventory) is the appropriate one to use, as the CDA issue has not been resolved.

This last issue requires some further discussion, as it is crucial to the LWA site suitability determination, and graphically illustrates the implications of the Licensing Board's ruling for the conduct of this proceeding. In order to determine the suitability of the site for a reactor of the general size and type proposed, one must first determine the appropriate site suitability source term. 10 CFR §100.11, fn. 1 provides that a source term shall be established

based upon a major accident, hypothesized for purposes of site analysis or postulated from considerations of possible accidental events, that would result in potential hazards not exceeded by any accident deemed credible. Such accidents have generally been assumed to result in substantial meltdown of the core with subsequent release of appreciable quantities of fission products.

The source term for purposes of assessing site suitability is based upon a fission product release greater than that associated with the most severe "credible" accident. In the case of LWRs, it requires postulation of a substantial meltdown, an event not considered "credible" for purposes of the LWR design basis. Thus, the source term is dependent upon

a determination of what is the maximum "credible" accident, so that the source term can be set for a greater release. If a CDA is credible, the source term, according to 10 CFR §100.11, fn 1, must be greater than the release associated with the maximum credible CDA. The credibility or probability of the CDA is strongly design-dependent, and one's conclusion about it is strongly dependent on the confidence one has in the methodologies used to analyze the risks, i.e., the probabilities of CDAs and their consequences.

The best available data on probabilities and consequences of CDAs is the available information and review to date on the CRBR. As is the case for NEPA issues, supra, in order to make our affirmative case on the mistakenness of the proposed source term, Intervenors must use that available information on CRBR. The Board's ruling forbids Intervenors to make that case. Applicants are likely to make their case for "design feasibility" on the basis of general findings based on "engineering judgment," "positive" experience with LWRs or other breeders (foreign or experimental), and their reliability program. Intervenors will not be permitted to attack those general findings on the basis of negative experience or specific problems which have been identified in the CRBR review to date because, under the Board's ruling, such information will be considered "detailed design considerations which should be deferred until the CP stage." The net result, once again,

is that the scope of the LWA-1 proceeding is limited to Applicants' positive case. Intervenors submit that we ought to be permitted to make our relevant case in the manner we choose, regardless of how Applicants make theirs.

Staff seems to be unsure as to whether the proposed source term is final, or only preliminary. In questioning before the ACRS Subcommittee on CRBR, a Staff member indicated that the latter was the case:

MR. MARK (Subcommittee Member): You said you will possibly arbitrarily include some plutonium in the source term. That takes more than melting, does it not? Does that not take fuel vaporization?

MR. MORRIS (Staff): The source term is a non-mechanistic source term, and the only reason that I mention that it would involve some thing that could be connected to a CDA would be that you would imagine a CDA would have to occur in order to get one percent plutonium inventory into the source term.

MR. MARK: You sure would have to imagine that.

[Laughter.]

MR. MARK: So it is a hypothetical source term, like the hypothetical core disruption that goes with that.

[Laughter.]

MR. MORRIS: It is chosen to provide a preliminary conservative bound to the kind of releases that could occur in containment, and because it is preliminary it has been chosen to be somewhat conservative.

Transcript, May 5, 1982 Meeting of the ACRS Subcommittee on CRBR, at 530-31 [Emphasis added].

In other contexts, Staff has indicated that the source term postulated in the May 6, 1976 Denise-Caffey letter is

firm. NRC Staff Response to NRDC et al. Eleventh Set of Interrogatories, at 3-4, par. (d). (Updates of these responses have indicated no changes in this conclusion.) The very day after he characterized the source term as "preliminary" at the ACRS, supra, the Staff's Mr. Morris told Intervenors in deposition that the source term was not being reconsidered because it is already sufficiently conservative. May 6, 1982 Deposition of William Morris by Intervenors, Transcript at 150 (See Appendix B). Mr. Morris conceded that the conservatism of the source term is dependent on the conclusion that CDAs are not credible, but maintained that it still might be found to be conservative even if CDAs with energetics exceeding 1200 megajoules were possible, Id. at 151. He admitted that the Staff could not be sure about that conservatism because they have not done the analysis:

[MR. COCHRAN]: Then the conservatism with regard to the source term is dependent on a conclusion that CDAs are not credible events?

[MR. MORRIS]: Yes. However, it is not beyond the possibility that if CDAs were considered credible, that the source term could still be found to be conservative.

[MR. COCHRAN]: You don't know about it because you have not done the analysis?

[MR. MORRIS]: That is right.

Id. at 152.

Mr. Morris' characterization of the source term as preliminary to the ACRS seems more readily supportable. It requires a considerable leap of faith to view the source term

as final when Staff admits they have not done the analysis which would affirm the sufficiency of its conservatism. Under the circumstances, Staff's assertions of conservatism of the source term are utterly unfounded.

The Staff, with the concurrence of the Licensing Board, proposes to make these final decisions on site suitability without ever looking at the CRBR design to determine that the source term chosen for the analysis in fact bounds the possible accidents for this plant.

The Staff's present postulated source term is clearly not bounding. The presence of one percent of plutonium inventory in the source term implies CDA activity, since that is the only mechanism for plutonium release. See ACRS Transcript, supra. However, the lack of conservatism of that source term is amply indicated by the fact that formerly the Staff considered a release including ten percent of plutonium inventory for the so-called "parallel design."*

In order to have any reasonable assurance that the site suitability determination at the LWA-1 stage is correct, there must be either 1) reasonable assurance, based on the CRBR design, that the postulated source term in fact bounds all

* The Applicants originally submitted two alternative CRBR designs; the "Reference Design" and the "Parallel Design." The Parallel Design (described in PSAR Appendix F) assumed that CDAs would be included as design basis accidents. After several consultations with the NRC Staff, the Applicants withdrew the Parallel Design in PSAR Amendment 60.

accidents considered credible for CRBR or, 2) the source term must be made so conservative that it will bound any errors in assumptions concerning probabilities of CDAs. By eschewing both consideration of the CRBR design and adequate conservatism in the source term, Staff and the Board make it impossible to have any confidence in the correctness of the site suitability determination.

The confusion exhibited by the Staff is, in fact, embedded in the scope of the proceeding adopted by the Board. If the Board finds that the site is suitable, that finding is not preliminary; it is a final decision. All contentions as to site suitability will presumably be resolved. We cannot imagine that the Board would permit reauthorization of site suitability contentions at the CP stage. Yet the calculations necessary to determine site suitability are dependent upon use of a postulated source term. As discussed above, the appropriateness of the source term for the CRBR is a question of first impression which is intimately related to whether or not a CDA is "credible." And, to complete the circle, the CDA issues will not be resolved with any degree of certainty until the CP stage. Therefore, if the site suitability findings are "final" at this stage, NRDC will never have had an adequate opportunity to litigate them. If they are not final, the entire proceeding is wasteful.

Several factors argue for much greater-than-usual reliance on reactor-specific information at the LWA-1 stage of this proceeding:

- 1) the lack of experience with similar reactors.
- 2) the lack of general design criteria for LMFBRs,
- 3) the lack of a reasoned basis for the decision to exclude CDAs from the design basis, and uncertain genesis of that decision, and
- 4) the uncertain genesis of the proposed radiological source term.

Special, more thorough treatment of first-of-a-kind projects has support in Commission regulations and decisions. The 10 CFR Part 100 siting regulations explicitly require cautious application to such plants:

In particular, for reactors that are novel in design and unproven as prototypes or pilot plants, it is expected that these basic criteria will be applied in a manner that takes into account the lack of experience. In the application of criteria which are deliberately flexible, the safeguards provided -- either site isolation or engineered features -- should reflect the lack of certainty that only experience can provide.

10 CFR §100.2(b). See, e.g., Public Service Company of New Hampshire (Seabrook Station, Units 1 and 2), ALAB-422, 6 NRC 33, 52 (1977). The cautious approach is also supported by the Commission's ruling on another first-of-a-kind application in Offshore Power Systems (Floating Nuclear Power Plants), CLI-79-9, 10 NRC 257, 262 (1979):

We are not compelled to treat Class 9 accidents in precisely the same fashion in the floating plant application as we treat such accidents in connection with ... land-based plants. Offshore's equal treatment argument applies only to parties similarly situated. Offshore's reactors will be afloat unlike any other electric power reactor we have ever licensed.... Their unique siting raises a host of issues, of which the Class 9 issue is only one, which clearly justify our treating Offshore's application differently than we treat an ordinary application. Therefore, our obligation, which we have fulfilled, is to treat Offshore in a fair and rational manner, but not necessarily in the same manner we treat applications which belong in different categories.

The CRBR represents an infinitely greater departure from land-based LWR experience than did the proposed Floating Nuclear Power Plants. The design of an LMFBR differs radically from LWRs. It has a power density in the core which is 4 to 8 times that in an LWR, and consequently the possibility of a recriticality event cannot be entirely discounted. Add to that the peculiar properties of metallic sodium when it comes into contact with water, air, concrete, or just about anything else in the environment, and it becomes clear that the application for CRBR deserves different treatment than that ordinarily given applications for LWRs. The efforts of Applicants, Staff, and now the Licensing Board, to reduce the LWA findings to the absolute minimum in this case do not accord either with the law or with common sense.

III. THESE ISSUES ARE APPROPRIATE FOR DIRECTED
CERTIFICATION TO THE COMMISSION

Normally, an interlocutory order would not be appealable. 10 CRF §2.730(f). However, there are important exceptions to this general rule for extraordinary circumstances. A presiding officer may refer a ruling to the Commission when in his judgment it is necessary to prevent detriment to the public interest or unusual delay or expense. Id. In addition, a licensing board may certify questions to the Commission in its discretion or "on direction of the Commission." 10 CFR §2.718(i), Public Service Company of New Hampshire (Seabrook Station, Units 1 and 2), ALAB-271, 1 NRC 478, 482-83 (1975). The Seabrook decision also recognizes the right of parties to petition for such certification, Id. at 483, and "the right of the Commission ... to have brought up to it for consideration any question raised before a licensing board which is thought deserving of early dispositive resolution." Id. at 482 [Emphasis in the original.]

Numerous decisions have established that interlocutory review would be undertaken

where the ruling below either (1) threatened the party adversely affected by it with immediate and serious irreparable impact which, as a practical matter, could not be alleviated by later appeal or (2) affected the basic structure of the proceeding in a pervasive or unusual manner.

Public Service Company of Indiana, Inc. (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-405, 5 NRC 1190, 1192

(1977), Public Service Electric and Gas Company (Salem Nuclear Generating Station, Unit 1), ALAB-588, 11 NRC 533, 536 (1980). The present question clearly falls within the second part of this test. Here, the significant issue is the Licensing Board's excessively narrow view of the scope of the LWA-1 proceeding for this first-of-a-kind project. If that view is allowed to prevail, the result will be a severely constricted record that will not permit the Board rationally to make the LWA findings required by law. The basic structure of the proceeding will also be pervasively affected in that Intervenor will be prevented from making our affirmative case on NEPA and site suitability issues. The issue deserves "early dispositive resolution", Seabrook, supra at 482, so that this LWA proceeding is not so streamlined as to be made meaningless. Moreover, the Commission's inherent supervisory authority over the conduct of proceedings is extremely broad.

The Commission has previously exercised this authority in a ruling against Intervenor in this very case. U.S. Energy Research and Development Administration (Clinch River Breeder Reactor Plant), CLI-76-18, 4 NRC 67 (1976). The Commission, intervening sua sponte to reverse an Appeal Board ruling admitting certain of Intervenor's contentions, stated:

While 10 CFR 2.786 (a) states the ordinary practice for review, it does not -- and could not -- interfere with our inherent supervisory authority over the conduct of adjudicatory proceedings before this Commission, including the authority to step

in and rule on the admissibility of a contention before a Licensing Board.

A contrary view could seriously dislocate the adjudicatory process within this agency and would imply a delegation of authority difficult to justify.

No party has a vested right to the continuing effectiveness of an erroneous Licensing Board ruling which happens to favor it. In the interest of orderly resolution of disputes, there is every reason why the Commission should be empowered to step into a proceeding and provide guidance on important issues of law and policy.

Id. at 75-76 [Citations omitted]. The instant question presents very significant issues of law and policy for the Commission. The Licensing Board's view of the scope of required findings for issuance of an LWA might be correct when light water reactors -- with which there is considerable experience and for which there are well-established design criteria -- are being licensed. But, as shown above, it is a severe distortion of the purpose and intent of the LWA rule, and a violation of NEPA, to use the very same findings in the LWA proceeding for a first-of-a-kind project such as CRBR. The LWR/CRBR parallelism which seems to be the touchstone for the Commission Staff's whole approach to this project simply has its limits. Commission intervention at this point is required to clearly delineate those limits so that the remainder of this proceeding is not premised on an erroneous view by the Licensing Board.

Timeliness

Intervenors anticipate a protest that this petition is out of time, and that Intervenors have not complied with the provisions for objections to Prehearing Conference orders in 10 CFR §2.752(c). Intervenors concede that, but urge that this petition should not be rejected on those technical grounds in light of significant new information we have become aware of since the Order was issued and the time for resolution of these issues prior to commencement of the adjudicatory hearings in August.

Since the Order was issued, Intervenors have deposed the Staff and obtained the transcripts of several pertinent ACRS meetings dealing with the very issues in controversy here. As Intervenors' citations to it above show, that newly acquired information has made it much more apparent for the first time how little the Staff actually knows about the foundations for decisions regarding the CDA and other issues, and how sparse Staff expects the LWA-1 findings to be. In addition, there is only now a full complement of Commissioners and the time is therefore appropriate for the Commissioners' consideration of these issues of first impression. The Commission stepped in sua sponte during the earlier incarnation of this proceeding to prevent what it considered too broad-ranging an inquiry. Its involvement is more important now, when the Board is moving toward a hearing that would undermine the integrity of the

licensing process by purporting to determine site suitability and compliance with NEPA while leaving unresolved what are conceded by the technical community to be the crucial issues related to the CRBR.

As the Licensing Board had already received Statements of Position concerning these issues from both Applicants and Intervenors, and spent an entire day in conference hearing arguments of the parties and ruling on the issues, Intervenors submit there would have been no utility in filing objections with the Board as provided in §2.752(c). More to the point, the issues in controversy in this petition are of first impression and raise issues of law and policy -- the proper interpretation of the meaning and purpose of the LWA rule in the context of the CRBR proceeding -- which it is the province of the Commission, not the Licensing Board, to decide.

In the alternative, the Commission may consider this as a petition for a waiver of the LWA rule as interpreted by the Board. 10 CFR §2.758, Consideration of Commission rules and regulations in adjudicatory proceedings, provides, in pertinent part, as follows:

- (b) A party to an adjudicatory proceeding involving initial licensing subject to this subpart may petition that the application of a specified Commission rule or regulation or any provision thereof, of the type described in paragraph (a) of this section, be waived or an exception made for the particular proceeding. The sole ground for a petition for waiver or exception shall be that special circumstances with respect to the subject matter of the particular proceeding are

such that application of the rule or regulation (or provision thereof) would not serve the purposes for which the rule or regulation was adopted. The petition shall be accompanied by an affidavit that identifies the specific aspect or aspects of the subject matter of the proceeding as to which application of the rule or regulation (or provision thereof) would not serve the purposes for which the rule or regulation was adopted, and shall set forth with particularity the special circumstances alleged to justify the waiver or exception requested. Any other party may file a response thereto, by counter-affidavit or otherwise.

- (c) If, on the basis of the petition, affidavit and any response thereto provided for in paragraph (b) of this section, the presiding officer determines that the petitioning party has not made a prima facie showing that the application of the specific Commission rule or regulation or provisions thereof to a particular aspect or aspects of the subject matter of the proceeding would not serve the purposes for which the rule or regulation was adopted and that application should be waived or an exception granted, no evidence may be received on that matter and no discovery, cross-examination or argument directed to the matter will be permitted and the presiding officer may not further consider the matter.
- (d) If, on the basis of the petition, affidavit and any response provided for in paragraph (b) of this section, the presiding officer determines that such a prima facie showing has been made, the presiding officer shall, before ruling thereon, certify directly to the Commission for determination the matter of whether the application of the Commission rule or regulation or provision thereof to a particular aspect or aspects of the subject matter of the proceeding, in the context of this section, should be waived or an exception made. The Commission may, among other things, on the basis of the petition, affidavits, and any response, determine whether the application of the specified rule or regulation (or provision thereof) should be waived or an exception be made, or the Commission may direct such further proceedings as it deems appropriate to aid its determination.

The "standard" interpretation of the LWA rule in LWR cases which allows findings on the basis of "design feasibility," when applied in the CRBR case, does not serve the purposes for which the LWA rule was adopted. Intervenors, thus, do not challenge 10 CFR §50.10(e), but rather the interpretation of that rule as argued by Applicants and Staff and adopted by the Board.

The LWA rule was adopted to:

- 1) provide structure to the previously ad hoc procedure for granting applicants the right to perform limited work at their own risk prior to issuance of a construction permit;
- 2) facilitate public participation in that process;
- 3) assure appropriate consideration of NEPA matters; and
- 4) provide for timely decision-making.

39 Fed. Reg. 4582 (February 5, 1974). The Board's application of the "design feasibility" standard from LWR cases and its refusal to allow Intervenors to inquire into CRBR-specific data at the LWA-1 stage in the instant case clearly does not further the purpose of facilitating public participation in this process, as it effectively prevents Intervenors from making our affirmative case concerning the NEPA and site suitability issues. The Board's ruling also prevents appropriate consideration of NEPA matters, as it does not permit thorough consideration of the environmental impacts of the proposed action. See supra pp. 22-42. Thus, the Board's interpretation of the scope of LWA findings does not serve the purposes for which the LWA rule was adopted.

While 10 CFR §2.758(b)-(d) does not provide, in so many terms, for waivers or exemptions from agency interpretations of rules under special circumstances, these rules do make it clear that it is the Commission, rather than the Licensing Board or Appeal Board, which is ultimately to determine the appropriateness of the application of Commission rules and regulations in particular circumstances. 10 CFR §2.758(d), Metropolitan Edison Company (Three Mile Island Nuclear Station, Unit No. 1) (Restart), LBP-80-1X, 11 NRC 37, 38-40 (1980). Since the "design feasibility" standard derives from agency case law rather than the regulations, it is appropriate for Intervenor's to question this interpretation as applied in the instant case, and to ask the Commission to resolve the question. While §2.758(d) provides that such petitions should first be brought before the Board for certification, such a request would clearly be futile and wasteful of time.

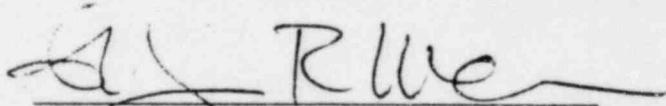
Finally, favorable action by the Commission on this petition will not necessarily delay the proceeding. There is yet time for full discovery on the issues in Intervenor's Contentions 1, 2, and 3 prior to the commencement of scheduled adjudicatory hearings on environmental and site suitability issues for CRBR in August. While full consideration of Contentions 1, 2, and 3 at the LWA-1 hearings might be expected to prolong the actual hearings somewhat, that is certainly no argument against compliance with the legal requirements for LWA

and NEPA findings. "Such administrative costs are not enough to undercut the Act's requirements that environmental protection be considered "to the fullest extent possible...." Calvert Cliffs' Coordinating Committee v. United States Atomic Energy Commission, 449 F. 2d 1109, 1118 (1971).

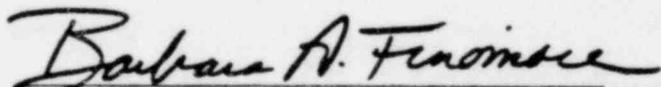
Conclusion

The severe limitations which the Licensing Board has placed on the scope of the LWA proceeding with respect to Intervenor's Contentions 1, 2, and 3 prevent compliance with the requirements of NEPA, prevent the Board from being able to make the required findings for issuance of an LWA under Commission rules, and greatly enhance the possibility that the Board's LWA findings will ultimately prove incorrect. The Board's serious misreading of the law and Commission regulations calls for the Commission to exercise its inherent supervisory authority over the conduct of this adjudicatory proceeding.

Respectfully submitted,



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Dated: June 11, 1982
Washington, D.C.

APPENDICES

The Commissioners' copies of this submission include here the following appendices:

- Appendix A-- April 22, 1982 Order Following Conference with Parties
- Appendix B-- Transcript, Intervenors' May 6, 1982 Deposition of NRC Staff (selected pages)
- Appendix C-- Applicants' Statement of Position in Regard to NRDC Contentions 1, 2, and 3 (4-15-82) (selected pages)
- Appendix D-- Transcript, April 20, 1982 ASLB Prehearing Conference for CRBR Proceeding (selected pages)
- Appendix E-- Transcript, March 30-31, 1982 Meeting of the ACRS Subcommittee on CRBR (selected pages)
- Appendix F-- Transcript, May 5, 1982 Meeting of the ACRS Subcommittee on CRBR (selected pages)

In each case, the "selected pages" which are included in these appendices are those which are cited or quoted in the text of this submission.

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.

SERVED APR 29 1982

In the Matter of	}	
UNITED STATES DEPARTMENT OF ENERGY	}	Docket No. 50-537
PROJECT MANAGEMENT CORPORATION	}	
TENNESSEE VALLEY AUTHORITY	}	
(Clinch River Breeder Reactor Plant)	}	April 22, 1982

ORDER FOLLOWING CONFERENCE WITH PARTIES

A conference with counsel was held pursuant to notice in this proceeding on April 20, 1982 at Bethesda, Maryland. Counsel representing the United States Department of Energy, Project Management Corporation and Tennessee Valley Authority (Applicants), the Staff, Natural Resources Defense Council and Sierra Club (Joint Intervenors), and the State of Tennessee participated in the conference.

The Board considered and heard arguments on the statements of position, filed by Applicants, Staff and Intervenors, that addressed the question of which issues within Contentions 1, 2 and 3 should be

~~82-01280-573~~

deferred for purposes of discovery and litigation until after the LWA-1 evidentiary hearing and partial initial decision.

In addition, the Board ruled upon the Staff Motion for a Protective Order Relative to Discovery and addressed all matters of controversy among the parties regarding interrogatories and responses to interrogatories.

Contentions 1, 2 and 3

Contention 1(a)

The Board ruled that Subpart (a) of Contention 1, which challenges the ability of Applicants' reliability program to eliminate CDAs as DBAs, is litigable at the LWA-1 stage. However, the inquiry at this stage is limited to consideration of whether it is feasible to design CRBR to make HCDAs sufficiently improbable that they can be excluded from the envelope of design basis accidents for a reactor of the general size and type proposed. Specifically, discovery at the LWA-1 stage is limited to the following areas of concern:

1. The major classes of accident initiators potentially leading to HCDAs;
2. The relevant criteria to be imposed for the CRBRP;
3. The state of technology as it relates to applicable design characteristics or criteria; and

4. The general characteristics of the CRBRP design (e.g., redundant, diverse shutdown systems) (Tr. 548).

A full-scale inquiry into the specific design of the CRBR is inappropriate at the LWA-1 stage. 10 CFR §50.10(e) establishes that an LWA-1 may be issued only after the Board has conducted a full NEPA review and has determined that "based upon the available information and review to date, there is reasonable assurance that the proposed site is a suitable location for a reactor of the general size and type proposed from the standpoint of radiological health and safety considerations...."

In order to make the full NEPA findings, the Board must have before it "sufficient information regarding the proposed plant...in the applicant's environmental report and the record of the NEPA hearing in order to conduct a reasonable cost-benefit analysis as required by NEPA" (Statements of Consideration to 10 CFR §50.10(e) at 39 FR 14506). The applicants' environmental report must assess the "probable impact of the proposed action on the environment" (10 CFR §51.20(a)). This assessment involves analyses of the probable environmental impacts of postulated accidents and must be based on realistic assumptions and methods of analysis. However, the conservative methods of analysis employed in the NRC safety evaluation process are not necessary for the NEPA review (Gulf States Utilities (River Bend Station, Units 1 & 2), LBP-75-50, 2 NRC 419, 447-448 (1975)).

In order to fulfill the requirements of 10 CFR §50.10(e)(2)(ii), the Board must make a preliminary safety determination "that based on the available information and review to date there is reasonable assurance that the site is a suitable location for a reactor of the general size and type proposed from the standpoint of radiological health and safety considerations."

On its face, it is evident that 10 CFR §50.10(e)(2)(ii) does not require a complete safety review based on the completed, detailed design of the specific reactor proposed. Instead, a preliminary safety finding is contemplated "based on the available information and review to date" and based on "a reactor of the general size and type proposed." With respect to Contention 1(a) specifically, there must be a showing of reasonable assurance that the state-of-the-art technology permits the implementation of a design which would reduce the likelihood of CDAs so that they can be excluded or that the finding is to include CDAs.

In contrast to 10 CFR §50.10(e)2, 10 CFR §50.35(a) contemplates a specific analysis of the facility at the CP stage. Thus, although a full NEPA review is mandated for the LWA-1 hearing phase, the finality of this review must of necessity await the completion of the CP evidentiary hearing where full design details and supportive analyses of the facility will be critiqued.

Contention 1(b)

The Board ruled that Subpart (b) of Contention 1, which questions Applicants' design, reliability program, methodology, and data base, is deferred for purposes of discovery and litigation until after the LWA-1 evidentiary hearing and partial initial decision. Subpart (b) involves matters of detailed design review and safety evaluation which, in accordance with the discussion in Contention 1(a) above, is more appropriately considered at the CP stage (Tr. 550-551). Applicants clarified that, in light of the Board's order, they would not rely on the information in this subpart for purposes of the LWA-1 hearing (Tr. 576).

Contentions 2(a)-2(c)

The Board ruled that Subparts (a)-(c) of Contention 2, which broadly question the validity of the NRC Staff's postulated radiological source term for site suitability analysis, are litigable at the LWA-1 stage, subject to the same limitations set forth in the ruling on Contention 1(a).

The evidentiary record and its precedent discovery will be confined to considering whether the Staff's source term is likely to envelope the design basis accident envelope as defined under 1(a) for a reactor of the general size and type proposed (Tr. 607).

Contention 2(d)

The Board ruled that Subpart (d) of Contention 2, which broadly questions the adequacy of the containment design, is litigable at the

LWA-1 stage subject to the same limitations set forth in the ruling on Contention 1(a) (Tr. 607-608).

Contention 2(e)

No controversy existed among the parties with respect to Subpart (e) of Contention 2, which alleges that neither Applicants nor Staff has adequately calculated the guideline values for radiation doses from postulated CRBRP releases. Contention 2(e) is litigable and subject to discovery at the LWA-1 stage as admitted (Tr. 608).

Contentions 2(f)-2(h)

The Board ruled that Subparts (f)-(h) of Contention 2, which question the validity of the codes used by Applicants and Staff to date, are the basis for discovery at the LWA-1 stage as to the codes used, including their validity, foundation proof and the like (Tr. 614).

Contention 3(a)

The Board ruled that Subpart (a) of Contention 3, which broadly questions the need for and adequacy of a probabilistic risk assessment of the CRBRP comparable to the Reactor Safety Study ("Rasmussen Report"), is deferred until after the LWA-1 evidentiary hearing and partial initial decision. Applicants will not rely on any analyses comparable to the Reactor Safety Study for purposes of the LWA-1 hearing (Tr. 625-626).

Contention 3(b)

Subpart (b) of Contention 3 alleges that neither Applicants' nor Staff's analyses of potential accidents, initiator sequences and events

are sufficiently comprehensive to assure that analysis of the DBAs will envelope the entire spectrum of credible accidents. The Board ruled that Contention 3(b) is litigable at the LWA-1 stage, subject to the same limitations set forth in our ruling on Contention 1(a) (Tr. 618-619).

Contention 3(c)

The Board ruled that Subpart (c) of Contention 3, which alleges that accidents associated with core melt-through following loss of core geometry and sodium-concrete interactions have not been adequately analyzed, is litigable at the LWA-1 stage subject to the limitations set forth in our ruling on Contentions 2(f)-(h) and on Contention 1(a) (Tr. 619- 620).

Contention 3(d)

The Board ruled that Subpart (d) of Contention 3, which alleges that neither Applicants nor Staff has adequately identified and analyzed the ways in which human error can initiate, exacerbate or interfere with the mitigation of CRBRP accidents, is litigable at the LWA-1 stage subject to the same limitations set forth in our ruling on Contention 1(a) (Tr. 622-625).

Matters Regarding Interrogatories

The Board denied the Staff's request (in its motion for a protective order, filed April 16, 1982) to set a numerical limit on the number of interrogatories filed by each party. An arbitrary limitation on the number of interrogatories is inappropriate at this time and in this kind of case (Tr. 643). The Board recognizes that there is a problem of too many interrogatories but does not believe that limiting the number on a mechanical basis would be fair to the parties nor would it be in the public interest (Tr. 660-661). In order for the parties to control this problem, the Board granted protective orders and struck the following pending interrogatories and requests to produce:

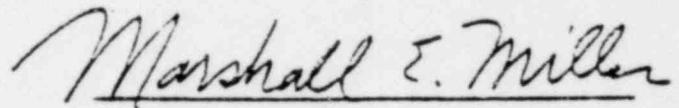
- (1) Natural Resources Defense Council, Inc. and the Sierra Club Twenty-Fourth Set of Interrogatories and Request to Produce to Staff;
- (2) Natural Resources Defense Council, Inc. and the Sierra Club Eighteenth Set of Interrogatories and Request to Produce to Applicants;
- (3) NRC Staff First Round of Discovery to NRDC, et al.; and
- (4) Applicants' Fourth Set of Interrogatories to Intervenors Natural Resources Defense Council, Inc. and the Sierra Club (Tr. 668).

The Board directed the parties through counsel to follow the procedures outlined in Comanche Peak^{1/} and to negotiate all such discovery with reasonable dispatch. If parties are unable to resolve disputes, they shall file appropriate motions for a protective order which set forth verbatim the interrogatories or requests, the matters in controversy, and the differences between them that were discussed and negotiated. Such motions should be accompanied by points and authorities containing the authorities relied upon. Parties will have a total of eleven (11) days to reply to a motion (ten (10) days plus one (1) day delivery), and the Board will rule thereon promptly (Tr. 668-672).

If any discrepancies exist between statements or rulings made at the conference and this Order, this Order shall be controlling.

It is so ORDERED.

FOR THE ATOMIC SAFETY AND
LICENSING BOARD



Marshall E. Miller, Chairman
ADMINISTRATIVE JUDGE

Dated at Bethesda, Maryland
this 22nd day of April, 1982.

^{1/} Texas Utilities Generating Company, et al. (Comanche Peak Steam Electric Station, Units 1 and 2), LBP-81-22, 14 NRC 150, 155-157 (1981).

ATOMIC SAFETY AND LICENSING BOARD

In the Matter of:

U.S. DEPARTMENT OF ENERGY PROJECT MANAGEMENT:
CORPORATION TENNESSEE VALLEY AUTHORITY : DOCKET NO. 50-537
(Clinch River Breeder Reactor Plant) :

NRC STAFF'S UPDATED ANSWERS TO NATURAL RESOURCES DEFENSE COUNCIL
AND THE SIERRA CLUB'S SET OF INTERROGATORIES TO THE STAFF DATED
APRIL 15, 1982.

DATE: May 6, 1982 PAGES: 1 thru 236

AT: Bethesda, Maryland

DEPOSITION OF: WILLIAM MORRIS,
RICHARD STARK,
WAYNE HOUSTON, and
PAUL LEECH

ALDERSON  REPORTING

400 Virginia Ave., S.W. Washington, D. C. 20024

Telephone: (202) 554-2345

1 BY MR. COCHRAN:

2 Q Which ones did you take off the list?

3 A Phoenix.

4 BY MS. FINAMORE:

5 Q You mentioned EBR-1 and -2 --

6 A Excuse me. I believe EBR-2 is a pool reactor
7 and I would take that off the list.

8 Q You mentioned EBR-1 and C-4, Fermi, and FFTF
9 would be considered reactors of the general size and
10 type as that proposed by the applicants?

11 A Those are the Fermi and FFTF.

12 Q Which of those would you consider to be a
13 reactor of the general size and type as that proposed by
14 applicants?

15 A Those are all of the general type, and none of
16 them produce quite as much --

17 Q So you would not consider any of those to be of
18 the general size and type; is that correct?

19 A In a narrow definition, I think I would say
20 that they are probably not.

21 BY MS. WEISS:

22 Q For purposes of the LWA-1 review, do you
23 consider any of those a reactor of the general size and
24 type of the CRBR?

25 A I don't see how they are really applicable to

1 that.

2 BY MS. FINAMORE:

3 Q The answer is "no"?

4 A I don't think that they are. I don't think
5 that they fall within the range of what one considers as
6 the general size and type when performing the CRBR LWA-1
7 review.

8 MS. WEISS: Perhaps we should note for the
9 record that Mr. Cheek came into the room. Would you
10 identify yourself for the reporter? Would you all
11 identify yourselves? We are trying to keep a record of
12 who is coming in and out.

13 MR. LONG: I am John Long, NRC.

14 MR. GOESLER: I am David Goesler, Westinghouse
15 Electric Company.

16 Ms. SHUTTLEWORTH: I am Peggy Shuttleworth,
17 NRC staff.

18 MR. CHEEK: I am Paul Cheek, NRC staff.

19 MS. WEISS: I have just a couple of more
20 questions, five minutes maybe, and I understand your
21 needs.

22 BY MR. COCHRAN:

23 Q In your review of the LWA-1 are you making a
24 judgment with regard to the feasibility of siting a
25 spectrum of reactors of the general size and type, or

1 environmental effects will be, or do you factor in
2 changes that you might require in the design, for
3 example?

4 A In the context of the class 9 assessment, what
5 is currently being done in terms of upgrading the FES,
6 as far as the class 9 assessment is concerned it does
7 not take into consideration any specific additional
8 requirements that the staff may tentatively identify or
9 expect to identify.

10 BY MR. COCHRAN:

11 Q Let me see if I understand it. You, the staff
12 are meeting regularly with the applicant to review the
13 adequacy of the design for the CP review, is that
14 correct?

15 A (Morris) Yes, that is correct.

16 Q And you are in the course of your own analysis
17 exercising computer codes to understand the consequences
18 for disruptive accidents at this time?

19 A Not now, but we will in the future.

20 Q Are you doing it now, or are your consultants
21 doing it now?

22 A The consultants are doing some scoping
23 calculations and they have not yet done calculations
24 where they have modeled this particular core.

25 Q You or your consultants have not made any

1 A I think some of the changes that have been
2 proposed are known, and they are in the PSAR. It isn't
3 that they are not known. We do not depend upon them for
4 making the findings.

5 Q The purpose of the LWA-1 is you will not
6 determine whether in fact the design changes that have
7 been proposed achieve the objectives which were outlined
8 in the ^{Denise letter} declare? That is, do they allow the CRBR to meet
9 the source terms?

10 A No.

11 BY MR. COCHRAN:

12 Q Are you reconsidering some of the objectives
13 or requirements as outlined in the Denise letter? For
14 example, whether to allow this after 24 hours?

15 A Yes.

16 BY MS. FINAMORE:

17 Q You are reconsidering the source term?

18 A No.

19 Q Why is that?

20 A We think the source term as it was previously
21 identified is sufficiently conservative to meet all
22 credible design bases on accidents, and to include a
23 consideration of some core melting as prescribed by the
24 regulations and therefore it is sufficient.

25 Q That is your conclusion, that it is

1 sufficient?

2 A Yes.

3 Q And what do you base that conclusion upon?

4 A The fact that the source term is so
5 conservative. I could repeat what I just said, it is so
6 conservative that it meets a balance of events that
7 could be set out for a design of this kind.

8 BY MR. COCHRAN:

9 Would it be conservative if the design or if
10 the CDA was initiated, and would it be conservative if
11 one thought a knowleige of core destructive accidents
12 concluded that CDAs energetics exceeded 1200 megajoules
13 were possible?

14 A Would the source term be changed?

15 Q Would it be conservative?

16 A If we assumed CDAs in excess of 1200
17 megajoules were considered possible?

18 Q Yes.

19 A Do you mean by that were considered to be in
20 th design basis spec?

21 Q No, set aside the issue of design and whether
22 the CDA is inside or outside of a design basis. I
23 simply asked whether the source term is conservative or
24 does not exceed any accident considered credible.

25 A You can't set aside CDA's being inside, and

1 still answer that question.

2 Q Then the conservatism with regard to the
3 source term is dependent on a conclusion that CDAs are
4 not credible events?

5 A Yes. However, it is not beyond the
6 possibility that if CDAs were considered credible, that
7 the source term could still be found to be conservative.

8 Q You don't know about it because you have not
9 done the analysis?

10 A That is right.

11 BY MS. WEISS:

12 Q Now we can move onto about page 29.

13 Can you tell me whether core disruptive
14 accidents are currently treated as design basis
15 accidents in the French Phenix breeder?

16 A I don't know.

17 Q And Super-Phenix?

18 A I don't know.

19 BY MR. COCHRAN:

20 Q Do you know about any foreign reactor?

21 A Yes.

22 Q Do you know about any domestic reactor other
23 than the CRBR?

24 A I think for the reactors they have not been
25 considered as deviates.

As to both the environmental and site suitability findings, the LWA decision is neither irrevokable nor with prejudice to the succeeding safety review at the Construction Permit stage. In this regard, the applicable NRC regulation states:

(4) Any activities undertaken pursuant to an authorization granted under this paragraph shall be entirely at the risk of the applicant and, except as to matters determined under paragraphs (e)(2) and (e)(3)(ii), the grant of the authorization shall have no bearing on the issuance of a construction permit with respect to the requirements of the Act, and rules, regulations, or orders promulgated pursuant thereto. 15/

Thus, the applicable legal principles contemplate that should the subsequent safety review bring about a need for modifications in the facility or previous findings, the Applicant bears the risk. This reinforces the notion that information necessary for environmental and site suitability (LWA) findings can and should be substantially more limited than those for the CP, and that LWA findings can rest upon threshold considerations of design feasibility. 16/

15/ 10 C.F.R. § 50.10(e)(4).

16/ Similarly, the NEPA cost-benefit balance at the LWA stage can be structured to accommodate the potential for change resulting from the subsequent CP safety review by including information to show that: (1) the effects of accidents are not significant in relation to those associated with normal operation and anticipated operational occurrences, and/or (2) post-LWA design or procedural modifications are practicable and would not
Continued.

B. Specific Positions

Contention 1a):

1. The envelope of DBAs should include the CDA.

a) Neither Applicants nor Staff have demonstrated through reliable data that the probability of anticipated transients without scram or other CDA initiators is sufficiently low to enable CDAs to be excluded from the envelope of DBAs.

While Contention 1a) broadly questions whether or not HCDAs should be included in the envelope of design basis accidents, the scope of the contention must be limited for the purposes of an LWA decision. It is only necessary for that decision to determine whether there is reasonable assurance that initiators of HCDAs can be made sufficiently improbable that HCDAs are excluded from the envelope of design basis accidents. Specifically, the inquiry should be confined to consideration of whether it is feasible to design CRBRP to make HCDAs sufficiently improbable that they can be excluded from the envelope of design basis accidents for a reactor of the general size and type proposed, in light of the following:

1. The major classes of accident initiators potentially leading to HCDAs.
2. The relevant criteria to be imposed for the CRBRP.
3. The state of technology as it relates to applicable design characteristics or criteria.

4. The general characteristics of the CRBRP design (e.g., redundant, diverse shutdown systems).

Conversely, the scope of inquiry would not include examination of whether the detailed design will meet the criteria imposed. That is properly deferred to the CP or OL stage.

Contention 1b):

1. b) Neither Applicants nor Staff have established that Applicants' "reliability program" even if implemented is capable of eliminating CDAs as DBAs.

- (1) The methodology described in the PSAR places reliance upon fault tree and event tree analysis. Applicants have not established that it is possible to obtain sufficient failure mode data pertinent to CRBR systems to validly employ these techniques in predicting the probability of CDAs.

- (2) Applicants' projected data base to be used in the reliability program is inadequate. Applicants have not established that the projected data base encompasses all credible failure modes and human elements.

- (3) Even if all of the data described in Applicants' projected data base is obtained, Applicants have not established that CDAs have a sufficiently low probability that they may be excluded from the CRBR design bases.

- (4) Applicants have not established that the test program used for their reliability program will be completed prior to Applicants'

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

- - -

ATOMIC SAFETY AND LICENSING BOARD

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In the Matter of: :
UNITED STATES DEPARTMENT OF ENERGY :
PROJECT MANAGEMENT CORPORATION : Docket Number
: 50-537
TENNESSEE VALLEY AUTHORITY :
(Clinch River Breeder Reactor Plant) :

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Nuclear Regulatory Commission
Room 550
4350 East-West Highway
Bethesda, Maryland
Tuesday, 20 April 1982

The conference in the above-entitled matter
was convened, pursuant to notice, at 9:00 a.m. .

BEFORE:
MARSHALL E. MILLER, Chairman
Gustave A. Linenberger, Jr., Member

1 it is that is troubling you.

2 MS. WEISS: Well, I guess the parties that are
3 troubled are the Applicant and the Staff. They are
4 troubled by what we have spelled out as our
5 contentions.

6 I might suggest to the Board --

7 JUDGE MILLER: We have admitted the
8 contentions. Now the question is what is necessary to
9 be examined or in what degree if that turned out to be
10 the problem with some of the subparagraphs, what is it
11 that is the true dispute to be decided by the Board? We
12 are now at Contention 1(a).

13 MS. WEISS: And as I understand the position--

14 JUDGE MILLER: What is the problem?

15 MS. WEISS: As I understand the position of
16 the adverse parties, the only issue relevant under 1(a)
17 is whether it is feasible to design the CRBR to make
18 core disassembly accidents improbable.

19 JUDGE MILLER: Can be feasible, or is
20 feasible?

21 MS. WEISS: That's what it says on page 13.
22 As I understand that, that means that issues going to
23 whether the CRBR design is itself sufficient to make
24 CDAs improbable are closed. Now if I am wrong, I would
25 ask the other parties to correct me, but I think that is

1 the basic point of difference.

2 JUDGE MILLER: All right, state it again and
3 we will look at it and comment on it.

4 MS. WEISS: It's their position that the only
5 issue which can be raised for the LWA is whether it is
6 feasible to design a hypothetical breeder reactor such
7 that a CDA could be excluded from the design basis, it's
8 probability had been made sufficiently low that it could
9 be excluded from the design basis.

10 JUDGE MILLER: You say a hypothetical
11 reactor. You have told us there is none in this first
12 of a kind, so I would say in any kind of fast breeder
13 you are saying the same thing, aren't you? Is that
14 supposed to have some significance or not? You are
15 saying nothing unless you are saying something you are
16 not delineating.

17 MS. WEISS: I think it's significant. For
18 example, when this case was originally brought before
19 you there were two designs.

20 JUDGE MILLER: Yes, alternatively, and there
21 was a question we were going to explore into whether you
22 could still have the two or not. That was an ongoing
23 issue that we had not yet ruled upon. That was five
24 years ago. I don't see how that has any bearing upon
25 where you find yourself now.

1 MS. WEISS: I understand their position to be
2 that this Board is essentially ruling only on the basis
3 of the design criteria, that it will not look at all at
4 the extent to which the CRBR design has actually
5 succeeded in making CDAs sufficiently improbable.

6 JUDGE MILLER: The extent to which it has
7 succeeded?

8 MS. WEISS: Or it will. The CRBR itself will
9 make CDAs sufficiently improbable. Can we look at this
10 plant, all of the assessments that have been done for
11 this plant? Or are we limited to looking at whether a
12 set of design criteria are in the abstract sufficient.
13 That's what I understand the difference to be between
14 us.

15 JUDGE MILLER: Mr. Edgar, I'll ask for your
16 comments.

17 MR. EDGAR: Let me explain what our position
18 is. It is stated as plainly as we can state it on page
19 13 and 14 of our statement of position. Specifically,
20 the inquiry should be confined to consideration of
21 whether it is feasible to design CRBR to make CDAs
22 sufficiently improbable that they can be excluded from
23 the envelope of design basis accidents for a reactor of
24 the general size and type proposed in light of the
25 following.

1 Now we stated four things. Ms. Weiss's first
2 point is we are looking at criteria only. That's not
3 true. Criteria is one of the four.

4 Secondly -- and here I have to extrapolate
5 somewhat on the Intervenor's position. I am not sure I
6 understand it as expressed, but they say they want to
7 look at everything, all analyses. What we are
8 suggesting is, for example -- and it is jumping ahead,
9 but they have already said it -- they want to get into
10 the reliability program. Well, that is Contention 1B.
11 We are prepared to address that. The details of the
12 reliability program are things of a very specific design
13 nature that would come in as a confirmative R&D program
14 at the CP or even the OL stage. So we think that you
15 can define a scope here based on the four parameters of
16 feasibility principle and a reactor of the general size
17 and type.

18 In particular, let me emphasize one thing that
19 Judge Miller's question pinpointed and I think indeed
20 stripped away here. There is a fundamental legal flaw
21 in the Intervenor's argument. It is now on the table.
22 The Intervenor said with an LWR, in the LWA regulation
23 context, you can look at previous LWRs. The question
24 was, well, what did you do when LWRs were new? The
25 answer wasn't very clear. The fact is when LWRs were

1 new there was no prohibition which stemmed from the
2 Atomic Energy Act on commencement of site preparation.
3 You could do it. You didn't need a site suitability
4 finding.

5 What we are suggesting here is in light of the
6 LWA regulation is a reasonable set of bounds on the
7 findings that the Board must make.

8 I agree with Judge Miller's other
9 characterization which is let's not confuse the fullness
10 of a review with the finality of a review. The fact is
11 in the context of the Atomic Energy Act, light water
12 reactors and LMFBRs alike, there is a provisional
13 character to findings at the LWA and indeed even at the
14 CP stage.

15 So what we are suggesting to the Board is a
16 specific set of limitations on scope in order that the
17 Board can make a reasonable set of findings for LWA
18 purposes.

19 JUDGE MILLER: Staff?

20 MR. SWANSON: Again, just to summarize our
21 position, I believe, as we have stated several times
22 before and will briefly summarize it again, we think the
23 position taken by prior Boards as exemplified by the
24 Licensing Board at River Bend -- that is 2 NRC 419, 1975
25 case -- when you are confronted with a situation where

1 you have mixed questions of environmental and
2 radiological health and safety matters, as you do every
3 time you have an LWA, it is perfectly proper to make the
4 findings that that Board did in confronting the
5 situation such as Appendix I. That is, you don't have
6 to complete the CP review; you have to make the findings
7 that would be required at the CP stage in order to make
8 a decision of whether or not an LWA should be issued.
9 Rather, as the Board summarized on pages 442, 461 of
10 that decision, you need to make three findings. The
11 first finding I might indicate is really a summary of
12 the four specific findings that the Applicant just
13 specified on page 12.

14 JUDGE MILLER: Which were the pages of that
15 decision?

16 MR. SWANSON: The general discussion of the
17 Board is at 2 NRC 442. This is again their dealing with
18 compliance, wit Appendix I.

19 JUDGE MILLER: River Bend?

20 MR. SWANSON: River Bend. Then they summarize
21 those findings again on page 461. This is a case we
22 cited in our letter of April 16. The first finding is
23 not that the design complies with the regulations or
24 that it is properly designed, but rather whether or not
25 there is reasonable assurance that the plant can be

1 designed to conform to whatever the issue is.

2 I believe the Applicant's breakdown of those
3 issues on page 12 of their filing specifies the kind of
4 findings that deal with that. They use the term
5 "reasonable assurance," sometimes "feasible." I think
6 probably they are interchangeable, but that's the first
7 finding, not that the plant is designed, but that the
8 plant can be designed.

9 The third findings are largely environmental.
10 The second is radiological impact will be of small
11 weight in the environmental balance if the plant is so
12 designed. The environmental finding, then finally, the
13 cost/benefit finding, that is, that the plant as so
14 designed would not incur costs which would seriously
15 disturb the cost/benefit or plant versus alternative
16 balances to reach environmental hearing.

17 Several cases have been cited thus far by
18 Applicant and the Staff which took the same approach as
19 the Board did here, simply, that is, that certain
20 findings can be made at the LWA stage which deal with
21 the standard of reasonable assurance that engineering
22 and design can be factored into a specific plant, not
23 that a plant is so designed, and that the final
24 determination as to whether or not the plant is so
25 designed is -- for the purposes of issuing a

1 construction permit, are made at the radiological health
2 and safety hearing.

3 I think when Ms. Weiss argues that the record
4 is closed at the environmental stage and it would take
5 significant new information to open it, and arguing that
6 that is the basis for going all the way through the CP
7 findings now, just runs counter to this approach taken
8 by the Commission in its regulations on the Boards in
9 deciding whether or not applications comply with LWA
10 regulations.

11 That is, my understanding of the NRDC approach
12 is that you cannot preclude the possibility that the
13 applicants might fail at the CP stage to demonstrate
14 that in fact the CRBR design does in fact comply with
15 the regulations and comply with whatever requirements we
16 assume they comply with at the LWA stage; that you have
17 to go through the -- reverse the process and go through
18 the full CP radiological health and safety
19 considerations now. And then if you can find that they
20 can do all that, then as a sort of lesser included
21 finding you can find that there's also reasonable
22 assurance that the plant can be designed, and therefore
23 an LWA finding can be made. There is just no basis
24 for twisting the requirements that way.

25 We submit, as we have stated previously, that

1 the proper finding to be made at this stage does not
2 include a finding that the plant is designed, that the
3 design meets the regulations, but that the plant can be
4 designed. In this case that would provide a sharp
5 distinction, for example, between Contention 1(a), which
6 deals with the consideration of whether or not a core
7 disruptive accident should be included in the design
8 basis for which compliance with design requirements'
9 finding does not have to be made at this time, as
10 opposed to 1(b), for example, which gets into the
11 specific design and the support for that design
12 compliance with the regulations on the reliability
13 data.

14 1(a) we believe is suitable for an
15 environmental hearing subject to the limitations and the
16 approach set forth, for example, in the River Bend
17 Board. 1(b) is an issue which we think is properly
18 postponed for the CP stage where you actually get into
19 the design and the basis for choosing that design, and
20 whether or not that design is in fact in compliance with
21 appropriate requirements.

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1 MS. WEISS: Mr. Chairman, I would like to
2 briefly respond to that, if I may.

3 JUDGE MILLER: Yes, you may.

4 MS. WEISS: The staff continuously misstates
5 our position. I just don't know if they don't
6 understand it or if they like to state it in a way that
7 makes it easier to dismiss. To cite River Bend, River
8 Bend said it is not required that the Board make
9 findings as to whether the specific design conforms to
10 the radiological health and safety requirements of Part
11 50.

12 JUDGE MILLER: Which River Bend?

13 MS. WEISS: That is the River Bend decision
14 cited by --

15 JUDGE MILLER: Well, you know there are two or
16 three here. You cite them all over the place. There is
17 6 NRC, for example, which went into the -- 6 NRC 760 in
18 the River Bend, and it has got some language in there
19 that could have some applicability, so River Bend is
20 getting to be generic.

21 MS. WEISS: The one I am citing, I understood
22 them to cite, was LBP 75--

23 JUDGE MILLER: Licensing Board Panel
24 decision. And what was that? 2 NRC? What is your
25 cite?

1 MS. WEISS: Yes. And the page I am reading
2 from is 461. It starts on 419.

3 JUDGE MILLER: All right.

4 MS. WEISS: I just want to make the point that
5 we have never asked this Board to make the final
6 findings of compliance with the regulations. In fact,
7 we conceded that the contentions were phrased by
8 compliance with the regulations, such as the old 8(a), I
9 think it is 11(a) now, were not appropriate at the LWA
10 stage, so that is just absolutely a red herring.
11 Questions of compliance with the rules are not --
12 compliance with the --

13 JUDGE MILLER: Now which rules, now?

14 MS. WEISS: Part 50. Compliance with Part 50
15 and all of its -- that is not before the Board, and
16 there is no question that we asked you to resolve as far
17 as you can make those findings

18 JUDGE MILLER: What have you asked us to
19 resolve at this stage?

20 MS. WEISS: We have asked you only to resolve
21 the question for purposes of making the NEPA findings,
22 and your site suitability findings of whether a CDA is
23 of such low probability that you can disregard it.

24 JUDGE MILLER: Can be feasible? Or are you
25 asking for something more? That seems to be the heart

1 of the controversy.

2 MS. WEISS: Yes. That is the heart of the
3 controversy.

4 JUDGE MILLER: Well, then, when you define it,
5 use the same terms that they are using, and vice versa.
6 You are giving me apples and oranges. You may get fruit
7 salad, but you won't get very far into delineating
8 issues.

9 MS. WEISS: I am just trying to first discard
10 what is not before you.

11 JUDGE MILLER: Tell me what is before us, and
12 we will discard those things that do not come within
13 that.

14 MS. WEISS: You need to make a finding that,
15 A, there is reasonable assurance that a reactor of this
16 general size and type be located at this site. In order
17 to do that, you have to determine whether the source
18 term is appropriate.

19 JUDGE MILLER: I ask you again to define -- I
20 don't want to use shorthand. What do you mean by
21 "source term as appropriate"? What does that mean in
22 this proceeding?

23 MS. WEISS: Well, maybe we should get the regs
24 out.

25 JUDGE MILLER: Well, I am willing to let you

1 summarize but I do not want the record to be -- people
2 very glibly -- and I am not accusing you of anything. I
3 want to be sure those terms are being used meaningfully,
4 because you say the staff doesn't interpret correctly.
5 Part of our problem may be semantic. At least where
6 semantics stop, we are going to get stripped down to
7 what the true controversy is. We are getting very close
8 to that and to a recess.

9 (Laughter.)

10 JUDGE MILLER: So, would you like to continue
11 now, or would you like to gather your thoughts during
12 the recess?

13 MS. WEISS: No, I think I would like to have
14 Mr. Cochran talk to you just briefly about the issues
15 that the contentions raise.

16 JUDGE MILLER: Okay.

17 MR. COCHRAN: Judge Miller, the first two
18 contentions, the first one goes really to the
19 reliability programs and so forth regarding whether a
20 CDA can be excluded from the design basis spectrum. The
21 second contention goes to the suitability of the site
22 and the adequacy of the definition of the source term as
23 the staff uses that language, site suitability report
24 for purposes of assessing the suitability of the site
25 under 10 CFR Part 100. The source term is the

1 postulated releases of radioactivity into the secondary
2 containment, and under the 10 CFR 100 regulations is a
3 requirement that that release for purposes of assessing
4 the suitability of the site should not be exceeded by
5 any accident deemed credible.

6 Now, I would very much after the recess like
7 to walk you through the chronology of the last two years
8 very quickly to show you the extent of the argument
9 between staff and applicant over these particular
10 issues. Should the CDA be a design basis event? What
11 should the source term be? There was great dispute all
12 the way through mid-'74 prior to even docketing the
13 license through '77, and it still has not been resolved
14 specifically for the CRBR.

15 Now, if you look back through some of that
16 correspondence, you will see statements that I totally
17 agree with, and they go to this effect. If we continue,
18 the phenomenon and scenarios associated with the
19 accident are complex. The uncertainties of these are
20 neither addressed by technical information nor enveloped
21 by conservative assumptions. We would continue to
22 believe that satisfactory resolution of this problem can
23 be achieved through a combination of approved design
24 base, on meaningful data, conservative engineering
25 assumptions where uncertainties are large, and research

1 and development.

2 Now, we all, I think, to the best of my
3 knowledge, we are in agreement on what the standard is
4 at the LWA stage, reasonable assurance, a reactor of the
5 general size and type, and so forth. Now, I don't care
6 whether the applicant comes in here and says their
7 source term that they have adopted and the staff by the
8 same token came to them on a tablet of stone or from a
9 voice in a burning bush. They can present any case they
10 want to on the merits. I want to reserve the right to
11 use the analysis for the reactor that most closely is
12 identified with the reactor of the general size and type
13 as that proposed, and that is, it is precisely the one
14 that is proposed. It is a CRBR. There is a wealth of
15 data that goes to the R&D program that is going to be
16 necessary to resolve issues of whether there is
17 reasonable assurance that this thing can be resolved,
18 for example, in a reliability program.

19 What one sees is over the years a great deal
20 of discussion between the staff and applicant on these
21 issues, areas of agreement and disagreement, and always
22 one party in this proceeding, NRDC, has been unable to
23 participate in the resolution of those issues amongst
24 the staff and the applicant. We have basically one shot
25 at this for the first time on the site suitability

1 issue, at the LWA 1 proceeding. We want to be able to
2 go back and use all of the available information
3 developed to date with the specific reactor in making
4 our presentation to the Board as to whether one has
5 reasonable assurance that for a general reactor of the
6 size and type one can do a limited work authorization.

7 JUDGE MILLER: Well, what limitation is there
8 on a limited work authorization of this type? Why do we
9 have to go over the minute detail of everything that has
10 transpired in the last six or twelve years in order to
11 have this more limited type of inquiry?

12 MR. COCHRAN: You don't have -- it is obvious
13 that I am not going to be wasting my time looking at
14 minutia that I think the Board is not going to be
15 reasonably persuaded by at an LWA 1 proceeding.
16 However, the staff and the applicant are defining these
17 guidelines for purposes of scoping discovery in such a
18 way that they can come back and object to me asking any
19 question on, say, the reliability program which goes to
20 the R&D program necessary to determine whether one has
21 reasonable assurance you are going to be there by the CP
22 stage. There are programs like documented in a document
23 called CRBR P 1, which is similar to a Rasmussen analogy
24 for the Clinch River reactor, specifically for the
25 Clinch River reactor.

1 Now, under their constraints that they want to
2 impose, they can come back to you and say, no, that
3 analysis is CRBR specific and it does not resolve issues
4 for some hypothetical reactor of the general size and
5 type.

6 JUDGE MILLER: Mr. Cochran, let me ask you to
7 look at Page 13, where there is some attempt made to
8 limit what is alleged to be upon a reasonable basis the
9 inquiry for purposes of environmental inquiry. You've
10 got the description there of the contention as you have
11 pleaded it. You've got the assertion of what is
12 necessary to consider, that is, the feasibility to
13 design and so forth, the four areas which they contend
14 are the scope of inquiry both in terms of a pleading and
15 in terms presumably of subsequent discovery, and on Page
16 14, conversely, they set forth four subparagraphs.
17 Wait, am I into 1(b) there? I want to stick to 1(a).
18 Now, what quarrel do you have with those statements of
19 the criteria to be applied?

20 MR. COCHRAN: They raise a question of
21 feasibility in the discussion above, and then state that
22 one would look, for example, at the state of technology
23 as it relates to applicable design characteristics or
24 criteria. Now, I would say I would like to look at some
25 of the analyses that they have done to date with respect

1 to the CRBR, because I think that is the best type of
2 data to use.

3 JUDGE MILLER: I know you want to look at a
4 lot of things, Mr. Cochran. We have got 1,000
5 interrogatories pending now, and Lord knows how many
6 more that are going to be backed up pending this
7 afternoon, but let's get right down to the gut factors.
8 What are the things you think are really necessary for
9 the Board to look at? I have asked you about these
10 four. What about the first one, Number 1, the major
11 classes of accident initiator potentially leading to
12 CDA's. Is that reasonable?

13 MR. COCHRAN: One should be able to look at
14 all of these things, but one should be able to look at
15 more than that, Judge Miller.

16 JUDGE MILLER: All right. Never mind the
17 history at the moment. Let's get right down to the
18 "more". Give me the description, give me the
19 parameters. Let's have it in a nutshell.

20 MR. COCHRAN: All right. Let's give some
21 examples.

22 JUDGE MILLER: Before you give me examples --

23 MR. COCHRAN: In October of 1974, the
24 applicants issued a document identified as Ward
25 D-005-3. That is a Westinghouse document in which the

1 project states its initial reliability goals for a
2 shutdown system. That is for the CRBR. Now, am I
3 allowed discovery on whether or not those particular
4 reliability goals that were set forth for the CRBR are
5 reasonable or unreasonable for a reactor of the general
6 size and type? Now, I would say that particular
7 document --

8 JUDGE MILLER: Wait a minute. Before you say
9 what you are going to say, let's look at what you put on
10 the table. That is what, an eight-year-old
11 communication, now, that describes what?

12 MR. COCHRAN: The initial reliability goals
13 for the CRBR.

14 JUDGE MILLER: These are goals.

15 MR. COCHRAN: Goals, right.

16 JUDGE MILLER: You want to go back to
17 eight-year-old goals in the context of what we have at
18 the present time.

19 MR. COCHRAN: I think I want to be able in the
20 presentation of the Board to go through the chronology
21 for this reactor to show where we started, where we are
22 today, and what our knowledge is, what the R&D program
23 is, and so forth, and whether there is a reasonable
24 chance that one is going to meet those particular goals,
25 whether those particular goals are comparable to or

1 sufficiently different from what one has determined one
2 can achieve in terms of reliability through the light
3 water reactor analyses of anticipated transients without
4 scram.

5 (Board conferring.)

6 JUDGE MILLER: Just as a matter of
7 information, let me interrupt you for a moment. I will
8 give you a full opportunity to go back. What is the
9 status of the Board's report in terms of the current,
10 present, and future issues in terms of this proceeding?
11 Tell us very shortly and quickly. I would like to hear
12 both the applicant and staff on that, and then I would
13 like to get back to Mr. Cochran.

14 (Pause.)

15 MR. EDGAR: Mr. Goeser can answer that
16 directly, Judge Miller.

17 MR. GOESER: Judge Miller, I believe that the
18 reference report has been superseded by the submittal of
19 Appendix C, the last submittal of Appendix C to the PSAR
20 that was described, the applicant's current as of that
21 time reliability program. That would have been in the
22 neighborhood of 1976 or early '77. I don't remember the
23 exact date of that revision.

24 MR. COCHRAN: I don't dispute that.

25 JUDGE MILLER: All right. I had asked you now

1 to give me a fairly clear description. You said, I am
2 going to do it by example. Now, your first example, you
3 have given me something that is superseded, so I don't
4 want to spend a lot of time on superseded matters. Give
5 me one that is good.

6 MR. COCHRAN: Well, you have to spend some --

7 JUDGE MILLER: No, I don't have to spend some
8 time, because I am going to rule them irrelevant very
9 shortly.

10 MR. COCHRAN: Let me give you a different
11 example. It goes to the question of the source term,
12 i.e., the amount of radioactivity released from the
13 primary to the secondary containment for purposes of
14 assessing the suitability of the cite, not to be
15 exceeded by any accident considered credible. Now,
16 there is a history with regard to source terms in this
17 proceeding. Applicant first came in without -- with a
18 design proposal, without the CDA, without accommodation
19 of CDA. Staff came back and said, you must include
20 something in your license submission to show
21 accommodation of CDA's. We believe CDA's should be in
22 the design basis envelope.

23 Then, staff said, we will give you a chance to
24 present your case. Therefore, we will allow you to
25 submit two designs, the parallel design and the

1 Rasmussen reference design. The parallel design and the
2 reference design submitted by the applicant in the 1975
3 period had different source terms, had different source
4 terms.

5 JUDGE MILLER: Are you aware, Dr. Cochran,
6 that the Board was not going to allow that to continue?

7 MR. COCHRAN: Not going to allow what to
8 continue?

9 JUDGE MILLER: The two. Why are we going back
10 over something the Board at that time was not going to
11 permit to be the subject of inquiry? Get to the present.

12 MR. COCHRAN: Because the source term is
13 relevant. The designs that were submitted are relevant
14 to the question of what the source term should be
15 today. Let me just finish the argument. They submitted
16 two designs with different source terms. Then the staff
17 did their own analysis subsequently, and they proposed
18 two different source terms, and the source term was
19 resolved by the staff on May 6th, 1976, in a letter from
20 Denise DeKalb. The applicant then appealed that
21 decision, asked for different source terms. They
22 appealed to management and they lost.

23 Now they want to come in and argue, I presume,
24 with regard to a hypothetical reactor for the purposes
25 of the suitability of the site whether their source term

1 is the conservative one or not. Now, for me to argue to
2 you with regard to whether the source term that they
3 presented is conservative or not, I want to go back and
4 discuss the source term that was selected by staff and
5 applicant for the parallel design as well as for the
6 reference design.

7 JUDGE MILLER: Why do you want to do that?

8 MR. COCHRAN: Because the source term for the
9 parallel design is larger than the source term for the
10 reference design.

11 JUDGE MILLER: Is that the sole reason?

12 MR. COCHRAN: No, that's not --

13 JUDGE MILLER: Why do you go through that and
14 multiply by 100, however many examples we have? I am
15 trying to say that there is a certain amount of time and
16 effort that goes into the scope of a trial of a case.
17 The framework of it is the issues. The issues are the
18 contentions. We have had these contentions admitted.
19 We are now getting into discovery, and hopefully we will
20 get through with that some time.

21 MR. COCHRAN: We are trying to determine --

22 JUDGE MILLER: I don't want something
23 expanded. I don't want a great big --

24 MR. COCHRAN: Excuse me.

25 JUDGE MILLER: Yes, go ahead.

1 MR. COCHRAN: We are trying to determine what
2 the scoping credible accident is for purposes of
3 assessing what the source term is. Now, if I can
4 convince the Board that a CDA, core disruptive accident,
5 is a credible event, and that it should be in the design
6 basis, then I can perhaps convince the Board that one
7 should not be talking about the reference design for
8 purposes of licensing the Clinch River reactor and
9 assessing the suitability of the site, but one should be
10 talking about the parallel design as well. After all,
11 that is the more conservative of the two designs, and --

12 JUDGE MILLER: Wait a minute. I am not
13 following you there. Why do we have to go through that
14 tedious exercise? The issue is what the proposed design
15 is, with the limitations that are built in, the fullness
16 of the scrutiny that is there, but that is really what
17 we are looking at.

18 MR. COCHRAN: Excuse me. The issue is, what
19 is the source term that one should assume for purposes
20 of assessing the suitability of the site for a reactor
21 of the general size and type. Is it the source term for
22 the Phoenix reactor? Is it the source term for the
23 British reactor? Is it for the CRBR reference design?
24 Is it for the parallel design? Is it only for the
25 reference design and not for these other designs? I

1 think you have got to look at those issues, and look at
2 them beyond just the narrow limits that the applicant
3 wants to impose. The applicant wants to impose limits
4 that are designed to prevent intervenors from looking at
5 information that would be embarrassing to them or that
6 would make it difficult for them to make their case at
7 the LWA 1 proceeding stage.

8 (Board conferring.)

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1 JUDGE MILLER: Mr. Edgar -- we will take about
2 a 10 or 15 minute recess, and then we will ask Mr. Edgar
3 and Mr. Swanson to respond to the position that is now
4 being delineated by Dr. Cochran.

5 (Recess.)

6 JUDGE MILLER: We will resume please.
7 Had Dr. Cochran finished?

8 MR. COCHRAN: I will ask Ellyn to finish for
9 me.

10 JUDGE MILLER: Ms. Weiss.

11 MS. WEISS: I have been thinking in the recess
12 about the Board's remark that it has never been the
13 Board position that we cannot rely on the CRBR
14 information in the record.

15 JUDGE MILLER: That you can't rely on it?
16 What do you mean?

17 MS. WEISS: I understood the Board to have
18 said, I thought, the issue was to what extent can we
19 bring before the Board questions relate to all of the
20 analyses which have been done for the CRBR because that
21 is the only basis of information we have.

22 JUDGE MILLER: If it is relevant, you can. We
23 had a question about relevance in scope.

24 MS. WEISS: Right. And looked some more at
25 that page 13 of the Applicant's argument, and it strikes

1 me that at least where one starts to talk about where we
2 differ is in the sentence that leads into the listing of
3 those constraints, and that is about six lines above it
4 where they say specifically the inquiry should be
5 confined to considerations of whether it is feasible to
6 design CRBRP to make HCDA sufficiently improbable that
7 they can be excluded in light of the following -- and
8 then they state what I think they are going to try to
9 prove at the IWA stage.

10 And it would be our position that one responds
11 to that case, we respond to that case by showing that on
12 the basis of the assessments that have been done for the
13 CRBR, it is not possible to find reasonable assurance
14 that for a reactor of this general size and type, a
15 source term ought to be the same as for the LWR because
16 it assumes exclusion of the CDA, and that all the
17 information to date shows that for the CRBR CDA is not a
18 sufficiently improbable event.

19 And is my thought that we might look
20 specifically at some of the questions we have asked on
21 discovery and maybe begin with question 15 in the first
22 round, the NRDC and the Sierra Club's 24th set of
23 interrogatories to the Staff, and the question is for
24 the Staff to identify precisely each section of G.E.'s
25 assessment of HCDA energetics in the CRBR heterogeneous

1 reactor core, which our information indicates is the
2 most recent work on assessing CDA energetics, asking
3 them to identify what they will review for the LWA, what
4 they intend to rely on for the LWA, what they will
5 review at the CP stage.

6 I would ask whether the parties think, whether
7 the Licensee believes that that is within the scope and
8 ought to be permissible discovery, and the Staff, or
9 whether it isn't. We have also asked for production of
10 the documents which are referenced in that G.E. report
11 because that is the kind of thing that we intend to
12 explore on discovery as a basis for cross-examination
13 and for the direct case on the analyses of CDAs.

14 I think it would be useful, certainly, for us
15 to find out whether the other parties think that that is
16 permissible discovery at this stage. If it is, maybe we
17 could decide that we will move beyond that question.

18 JUDGE MILLER: Mr. Edgar.

19 MR. EDGAR: Let me try to go back and address
20 several of Dr. Cochran's points first, and then I will
21 proceed to address the point which counsel just made. I
22 must confess that when I read NRDC's pleading, that I
23 had some difficulty in capturing the precise nature of
24 their differences with us, but after hearing Dr.
25 Cochran, I think we are a little bit better able to

1 narrow the points of difference.

2 In a word, Dr. Cochran is arguing the wrong
3 contention. He is arguing that we should be getting
4 into Contention 1(b). Now, there were two very
5 significant statements that he made. The first was that
6 in his judgment Contention 1 goes to the reliability
7 programs. Secondly, he stated that there is a wealth of
8 data that goes to the R&D program that will resolve
9 these issues.

10 Finally, the discussion revolved around
11 reliability goals in a specific example, and it became
12 clear that the present reliability information is in
13 Appendix C of the PSAR. What Dr. Cochran is seeking to
14 do here in 1(a) is not to address the four limitations
15 that we proposed but rather to jump ahead to 1(b) where
16 we get into the details of the reliability program.

17 Now, the fact is on the reliability program
18 you are dealing with the kind of design detail and
19 information that is appropriate for the CP if not the
20 LWA -- excuse me, if not the operating license. Let me
21 stand corrected on that. The point here is that there
22 is an attempt to use 1(a) to broaden rather than narrow
23 the scope of litigation under Contention 1(a).

24 The discussion, then, by Dr. Cochran
25 concerning source terms likewise jumps ahead. That

1 involves Contention 2, and specifically Subparts (a)
2 through (c). If we can distill the thing to a point of
3 fundamental difference, it is the Applicants and the
4 Staff believe, on the one hand, that the controlling
5 standard involves whether Clinch River can be designed
6 or whether it is feasible to design to exclude CDAs.
7 That is, as I understand it, where NRDC has a
8 fundamental legal difference.

9 Finally, coming to the question of
10 Interrogatory 15, apparently the Intervenor believe
11 that if we had this interrogatory answered it would be
12 useful. We regard that as essentially an attempt to
13 postpone a ruling here today. We are in the process of
14 obtaining the old discovery. The parties were advised
15 to come prepared to discuss the limitations on the scope
16 of Contention 1(a). We have done so.

17 We have heard nothing and absolutely nothing
18 that would convince us that this isn't (a) a reasonable
19 scope and (b), in light of the controlling legal
20 standards, an appropriate scope for limiting Contention
21 1(a).

22 JUDGE MILLER: Does Staff have anything to add?

23 MR. SWANSON: Just briefly. I won't repeat
24 the other arguments that have been made thus far, but we
25 in agreement with the statements that Mr. Edgar just

1 made made. Just briefly, though, one point.

2 Dr. Cochran described what he would like to
3 argue. I thought he was talking about 1(a) but he jumped
4 to 2 regarding source term. I think we basically have
5 the same arguments we have been hearing before, that is,
6 an attempt to tie down an argument to the specific
7 design of Clinch River and whether or not that design is
8 appropriate, again, for CP purposes.

9 The Staff position simply is when we are
10 talking about the source term, for example, when we are
11 discussing the LWA-purpose source term, the inquiry is
12 whether it is feasible or whether reasonable assurance
13 exists that the technology is available to factor into
14 the design for Clinch River the technology such that the
15 source term can be reasonably described by the source
16 term utilized at this stage of the proceeding.

17 Whether we are talking about Clinch River or
18 Phoenix or any other general size and type LMFBR really
19 doesn't matter that much because we are not tied down to
20 a specific design at this point. The inquiry, as we
21 point out, is whether a reasonable assurance exists to
22 limit source term appropriately. That is the inquiry,
23 not whether or not Clinch River is designed -- or
24 whether the data supporting that design is such that
25 would permit the reduction of the source term to a

1 specific amount for Clinch River.

2 JUDGE MILLER: Well, the Board believes that
3 the limitations set forth on page 13 are reasonable. In
4 other words, that the LWA-1 inquiry should be limited to
5 considering the feasibility of designing a fast breeder
6 reactor so that it would be sufficiently improbable that
7 there would be HCDAs which could be and can be excluded
8 from the envelope design basis accident for a reactor of
9 the general size and type proposed with the four
10 limiting factors that were there described: namely, the
11 major classes of accident initiators potentially leading
12 to HCDA's, number one; number two, the relevant criteria
13 to be imposed for the Clinch River breeder reactor
14 project; three, the state of technology as it relates to
15 the applicable design characteristics of criteria; and
16 four, the general characteristics of the Clinch River
17 design, such as redundancy, diverse shutdown systems and
18 the like.

19 Dr. Linenburger, do you care to add anything?

20 JUDGE LINENBURGER: Perhaps add to it, but not
21 alter it. I really continue to find that the basic
22 difference between Intervenors and Applicant and Staff
23 lies in the question or issue that was flushed up a
24 little earlier, namely, the question of fullness versus
25 finality of the NEPA review at the LWA phase.

1 The logic of Dr. Cochran's discussion, and
2 there certainly is logic to it, would be applicable and
3 relevant were we discussing the full CP scope of
4 proceeding. We are not. We are discussing explicitly
5 the LWA phase, and the thrust of Dr. Cochran's
6 discussion, as far as I am concerned, goes solely to the
7 question of whether it is possible in the LWA phase to
8 conclusively put to bed the NEPA review with finality.

9 We don't know the answer to that and we won't
10 know the answer to that until we have concluded the LWA
11 phase. We may not know it until we have concluded the
12 CP phase. Nevertheless, the Board holds to the position
13 that the finality of the NEPA review will not be
14 demonstrated until the completion of the CP phase and
15 therefore attempts to bring finality into the LWA-1
16 phase is not appropriate.

17 In this vein, then, I just indicate that the
18 Board is -- this form of the Board is unanimous in the
19 Chairman's statement of the last position.

20 MS. WEISS: Let me just say, Dr. Linenberger,
21 that I think this Board is headed for a straight-on
22 clash with the law if this Board believes that it can
23 issue an LWA without making the full NEPA findings.
24 Now, I am not sure that is what you are saying. Maybe
25 that is not what you are saying.

1 JUDGE MILLER: No, that is not what we are
2 saying. We have said that a full NEPA review will be
3 required. It was the finality that was the subject of
4 question as pointed out by Judge Linenburger. The full
5 NEPA review, yes, we intend to make it.

6 MS. WEISS: And on the issue of finality, you
7 will not make any more NEPA findings at the CP stage
8 unless --

9 JUDGE MILLER: Well, we do not know. We will
10 cross that stage when we come to it. Now the last time
11 we were in a collision course with the law, it was at
12 the behest of the NRDC. We got reversed by the
13 Commission back in 1976, whatever it was. So if we are
14 going to be on a collision course and get reversed
15 again, it is only fair that we spread it around.

16 (Laughter.)

17 MS. WEISS: We might as well do it for the
18 other side this time.

19 JUDGE MILLER: So whoever has led us into
20 error has led us into error, but we are going to have to
21 adhere to our ruling because we do believe that it is
22 reasonably within the scope of what we intend to have at
23 the LWA-1 stage; and I think the same reasoning is going
24 to apply to the contentions and arguments both ways or
25 three ways on 1(b). In other words, we believe that

1 that inquiry would be premature for the LWA-1 stage,
2 although it would be proper for consideration at the CP
3 stage. So it would be the same ruling, in effect.
4 Unless someone has something different, there is no
5 point in going over the same grounds.

6 ~~MR. COCHRAN:~~ MR. COCHRAN: Judge Miller, I still have a
7 problem even with your ruling with regard to its
8 applicability with regard to contentions and the scope
9 of discovery. In order for me to make a case with
10 regard to whether it is feasible and within the state of
11 the technology and so forth to site a reactor of the
12 general size and type of this particular site, one still
13 must go through the site suitability analysis and
14 postulate source term larger than anything deemed
15 credible, and in order to determine what is deemed
16 credible, one has to do, in my opinion, some -- or at
17 least in order to examine what the current knowledge to
18 date is and decide on the issue of reasonable assurance,
19 one needs to look at the current available data with
20 regard to computer analyses of CDAs. Those computer
21 analyses by and large are CRBR specific.

22 Now, I fear, I desperately fear that when I
23 ask questions on discovery that really go to the issue
24 of feasibility for a reactor of the general size and
25 type but am seeking in determining that feasibility, am

1 seeking data with respect to a specific design, that is,
2 the best data that we have got for a general reactor of
3 this size and type, that Staff and Applicants are going
4 to come back to you and say no, that is beyond the scope.

5 So I don't, even with your order, I do not
6 think you have resolved the problem I foresee, unless
7 Staff and Applicant can agree that one can make some
8 fairly broad --

9 JUDGE MILLER: We could give you the short
10 answer, it would be beyond the scope, so don't bother to
11 ask it in one of ten interrogatories. Live with what we
12 have ruled because that is what we have ruled. We have
13 already ruled. I asked you if there was anything new and
14 different. I don't think your analysis of your problems
15 is new and different. It may be that as we discuss
16 interrogatories you will come up with some specific
17 matters that we are going to go into in the next phase.

18 MR. COCHRAN: Let's do number 15.

19 JUDGE MILLER: Pardon me?

20 MR. COCHRAN: Did we resolve --

21 JUDGE MILLER: No, we are going to go right
22 ahead into 1(b). Where we have already ruled, unless
23 there is something significantly different, our same
24 ruling will apply to the scope and limitations upon
25 inquiry, LWA-1, of the matters that are set forth in

1 1(b). Now, that clearly would be postponed until the CP
2 stage, which means it would be beyond the scope of LWA-1
3 and hence interrogatories based on it would not be
4 proper.

5 MS. WEISS: We just do not see, Chairman
6 Miller, how one can prove that the probability of
7 anticipated transients is not sufficiently low. Our
8 proposition in 1(a), that it is not sufficiently low to
9 allow CDAs to be excluded from the design basis envelope
10 without looking at the information in the PSAR, which is
11 described at 1.b.1, the data base, which is described at
12 1.b.2, the test program, which is described at 1.b.4.
13 How can one answer the question of whether a reactor of
14 this general size and type -- actually, for NEPA it is
15 not even a question of a reactor of this general size
16 and type. The obligation is to determine what the risks
17 of accidents are for the CRBR, not for a reactor of this
18 general size and type for NEPA.

19 How can you make findings or how can we
20 present evidence or do cross-examination without getting
21 into those questions as a pure matter of logic and
22 fairness?

23 MR. COCHRAN: Let me give a more specific
24 example. We have discovery on WASH-1400, which is a
25 major NRC assessment of the reliability of shutdown

1 systems. At least it is included in there.

2 JUDGE MILLER: That is the Rasmussen report?
3 We don't think we want to get into that now for an
4 LWA-1. We just want to go with the issues on the
5 LWA-1. Whatever you want to put on the table for a CP,
6 fine, put it there. Not now. That is all we are saying.

7 MR. COCHRAN: I don't think you understand
8 what the Applicant's and the Staff's case is at the
9 LWA-1 proceeding stage. They have got to come in and
10 demonstrate to you that for a general hypothetical
11 reactor, a general reactor as they described it, that
12 they can make core disruptive accidents sufficiently
13 incredible by incorporating certain design features like
14 independent redundant shutdown systems --

15 JUDGE MILLER: They can or they can't. You
16 are going to put on evidence one way, they are going to
17 put on evidence the other.

18 MR. COCHRAN: I am going to put on evidence
19 that will utilize WASH-1400 and the Commission's order
20 with regard to WASH-1400 as it applies to
21 probabilities. Now, I would like, for example, to get
22 an admission from Staff with regard to the Commission's
23 order. It deals with WASH-1400 on light water
24 reactors. But am I permitted to do that?

25 JUDGE MILLER: I would doubt it. I mean if

1 you want an answer now, I would have to see it in
2 context, but if you want an initial ruling, I would say
3 no. Don't try to freight this hearing with everything
4 you think you are entitled to do. That is essentially
5 where our problem is coming in.

6 MR. COCHRAN: I am not trying to freight it
7 with everything.

8 JUDGE MILLER: You are trying to tell me about
9 the Rasmussen report in relation to LWA-1, and I don't
10 feel inclined to take the time and trouble to go into
11 it. We have suggested to you that those matters may
12 properly be deferred to the CP stage and that at that
13 point they would appear to us to be both relevant and
14 proper but we don't want to bind us or future boards,
15 but as we see it, they probably would be.

16 MS. WEISS: Let me point something out to the
17 Board. The NRC issued a policy statement in 1980 on how
18 the risks and consequences of accidents are to be
19 considered in impact statements. We are doing an impact
20 statement here. We are doing a full impact statement
21 here for the LWA-1. That policy statement clearly
22 applies at the LWA-1 stage. It calls for the use of
23 probabilistic estimates of accident risks for the NEPA
24 review, and it states that, and I quote, "While the
25 detailed quantitative considerations that form the basis

1 of probabilistic assessments" need not themselves be
2 incorporated into the FES, they must be referenced
3 therein, meaning that is the level of detailed analysis
4 which is required to make the NEPA analysis of the risk
5 of accidents, and certainly to the extent that those
6 quantitative considerations would be challenged by an
7 intervenor, they are relevant at an LWA-1 stage where
8 the NEPA will be discussed.

9 What you are saying today is anything that
10 looks like a probabilistic estimate, that looks in
11 detail at the design of the breeder and what the
12 accident risks are and what the accident probabilities
13 are is to be put off to the CP stage, and I say that
14 that is fundamentally inconsistent with NEPA as it is
15 clearly interpreted in this policy statement. That
16 represents the Commission statement of how NEPA is to be
17 interpreted.

18 I brought it up because the FES includes
19 reference to WASH-1400. That is one of the references.
20 That is the major reference. Just because something
21 looks like a probabilistic analysis or a quantitative
22 assessment, that does not mean that it is not relevant
23 for a NEPA review.

24

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1 (Board conferring.)

2 JUDGE LINENBERGER: You are absolutely right
3 about that. It does not mean that it is not relevant to
4 a NEPA review. That does not mean it is not relevant to
5 a NEPA determination. The comments of Intervenor in
6 this matter are really tantamount, as I see it, to their
7 taking the position that they relinquish any opportunity
8 or obligations at the time of their proposed findings
9 following completion of the CP hearing to indicate where
10 anything therein -- therein meaning the CP hearing --
11 might amend, overturn, or upset the NEPA evaluation.

12 I seriously doubt that Intervenor are
13 offering to relinquish that opportunity. I am sure they
14 will be loud and strong at the end of the CP phase if
15 they have heard anything that contravenes something that
16 has gone before in the NEPA analysis to the extent of it
17 not final, that it was made at the LWA phase.

18 This is the basic difference that the Board
19 sees underlying this whole discussion. You want
20 finality to NEPA when the LWA-1 phase is completed.

21 MS. WEISS: No. We want a chance to make a
22 record. Dr. Linenberger. We want a chance to make a
23 record. We can only make our proposed findings on the
24 basis of the record of this proceeding.

25 JUDGE LINENBERGER: Correct.

1 MS. WEISS: The consequence of your ruling is
2 we cannot make a record.

3 JUDGE LINENBERGER: Not true.

4 MS. WEISS: Because you have ruled this is all
5 irrelevant.

6 JUDGE LINENBERGER: Not so. The question is
7 where in the proceeding do what parts of that record
8 belong. That is what we are trying to sort out.

9 MS. WEISS: And that is 50.10 is definitive.
10 You must make the findings under Part 50.1. You must
11 make the NEPA findings. There is no question about
12 that, and if you must make them we must have an
13 opportunity to make a record on them.

14 JUDGE MILLER: We would like to have our
15 record at this time complete. We would like to hear on
16 this point which has been made by Ms. Weiss and Dr.
17 Cochran, both from Applicants and from Staff.

18 MR. EDGAR: We believe that the Board's ruling
19 was well found and we believe that any attempts now to
20 rehash the basis for that ruling, which is indeed what
21 has just gone on, are to no avail. The essential issue
22 here on Contention 1(b) is whether or not it is
23 necessary for the purposes of an LWA hearing to go into
24 the details of Applicant's reliability program.

25 We believe that the Contention is plain on its

1 [Board conferring.]

2 MR. COCHRAN: With respect to that ruling, I
3 would appreciate it if I could get some clarification
4 with regard to whether the use of those codes is
5 permitted in assessing the Contentions (a) through (d),
6 I guess it is, and if so, then are you suggesting that
7 we cannot do discovery to challenge the validity of the
8 codes or the groundrules that the codes will not be
9 utilized at all in this part of the proceeding, and
10 likewise will not be used with respect to Contention
11 1(a)?

12 MR. EDGAR: We have conceded that there is a
13 role for these codes in estimating environmental effects
14 of accidents. We have also conceded that there is a
15 valid role for the analyses within the context of 1(a),
16 which is the feasibility question. Our point has been
17 that the detailed analysis and final review for CP
18 purposes of these codes is as they are expressed in the
19 safety analysis report and is not appropriate at the LWA
20 stage.

21 MS. WEISS: Well, this really completely
22 puzzles me, Mr. Chairman. I do not understand the
23 position -- that Applicant can take the position that
24 says that we can introduce these codes, we can make what
25 use of them we believe is appropriate, but you cannot do

1 MS. WEISS: But the question is not whether --
2 we are not asking for final safety findings on the basis
3 of these codes. The question is the validity of the
4 code relevant to the issue before the Board, and you say
5 an issue before the Board properly at the LWA stage.
6 You say you concede relevance. You are going to be
7 discussing them. Then --

8 JUDGE MILLER: Pardon me just a minute. If
9 these codes, in whole or in part, are used, then I don't
10 see any reason why they are not therefore relevant for
11 these discovery purposes.

12 MR. EDGAR: I agree.

13 JUDGE MILLER: All right. Then what is the
14 disagreement as to (f), (g) and (h).

15 MR. EDGAR: The disagreement as to (f), (g)
16 and (h) as to the Applicant -- Staff has explained their
17 difference, and it is different because of the methods,
18 but as to the Applicants, the only point that we are
19 trying to make is that for discovery, just keep it
20 open. We are not troubled by that. We don't think it
21 is necessary for the Board, though, at the LWA stage, to
22 reach ultimate findings on these codes.

23 JUDGE MILLER: We will get to ultimate facts
24 when we get there. The Board is a long way from that.
25 And we are not barred as such in discovery. So the

1 Board will hold, then, that the (f), (g) and (h) are
2 cognizable certainly through discovery as to the codes
3 used, the validity of them, the foundation, proof and
4 the like. I don't know whether it is necessary to rule
5 now. We don't like to rule upon admissibility of
6 evidentiary matters until we are doing it in context, so
7 I do not think that we will rule, but we are holding
8 that those matters are open for discovery.

9 MR. EDGAR: And that is as to the Applicant's
10 codes, I take it.

11 JUDGE MILLER: I'm not sure I'm going to limit
12 it to codes. Codes are codes. We can't rule in a
13 vacuum. You people probably know what you are talking
14 about. The Board doesn't, really.

15 MS. WEISS: Mr. Chairman, I would ask you,
16 then, to reconsider the ruling on 1(d) and make that
17 consistent with the ruling that you just made on 2.

18 JUDGE MILLER: 1(b) was a different matter,
19 wasn't it?

20 MS. WEISS: If you are not going to rely at
21 all on the codes for 1 --

22 MR. EDGAR: The codes -- 1 has nothing to do
23 with this set of codes. In 1(b), 1(b) was the
24 reliability program.

25 MR. COCHRAN: It is the things contained in

1 1(b). There are codes in 1(b) just like there are in
2 2.

3 (Board conferring.)

4 JUDGE MILLER: I don't see there is
5 inconsistency in the ruling. Maybe somebody can
6 enlighten me. I think we will let the record stand
7 there unless somebody can point out -- the fact that we
8 are talking about different purposes and different codes
9 is a wholly different subject, I believe.

10 Right now what we are ruling on is that (f),
11 (g) and (h) may be the subject of -- and are
12 contentions, admitted contentions -- and may be the
13 subject of reasonable discovery within the bounds of
14 relevancy by the Intervenors or others, period.

15 MR. SWANSON: Maybe I could clarify something
16 for the Staff. It is obviously a legitimate inquiry for
17 Intervenors then to verify that we have only used two
18 codes at this stage of the proceeding?

19 JUDGE MILLER: Yes.

20 MR. SWANSON: And I would assume then it would
21 be a legitimate response once we have made a threshold
22 showing that we are not using any other code, that we do
23 not have to go on and explain what these other codes
24 are?

25 JUDGE MILLER: I think that is correct.

1 MR. SWANSON: Thank you.

2 JUDGE MILLER: That they are entitled to find
3 out the two codes that you have mentioned which the
4 Staff has used in whole or in part, okay. And then by
5 virtue of eliciting a proper response by discovery that
6 that is the extent in the LWA hearing of the use by the
7 Staff, that would be the end of the Staff's
8 responsibility to give discovery. And then the
9 Applicants, of course, will give whatever the factual
10 situation is with respect to their use of their codes.

11 MR. SWANSON: Thank you.

12 MR. JONES: I think that takes care of 2(a),
13 (b), (c), (d), (e), (f), (g), (h). And now I suppose we
14 have come to number 3.

15 Mr. Edgar, do you want to lead off on that one?

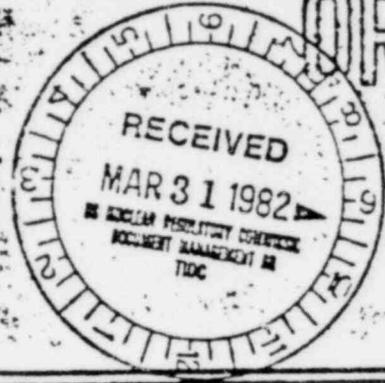
16 MR. EDGAR: Yes. We have already
17 foreshadowed, in our judgment, 3(a). 3(a) questions in
18 a broad sense the need for and adequacy of a
19 probabilistic risk assessment for CRB comparable to the
20 reactor safety study, that is, Rasmussen report. As we
21 have already discussed in connection with 1(a) and the
22 Board's ruling in that regard, it is sufficient for LWA
23 purposes to address the matter of exclusion of HCDAs
24 from the design basis, from the threshold of feasibility.

25 In this case we are looking at studies which

NUCLEAR REGULATORY COMMISSION

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ORIGINAL



In the Matter of: **ADVISORY COMMITTEE ON REACTOR SAFEGUARDS**
SUBCOMMITTEE ON CLINCH RIVER BREEDER REACTOR

DATE: March 30, 1982 PAGES: 1 - 114

AT: Washington, D. C.

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interfaces.

1 and in the terms of how the regulatory agency
2 establishes that they are the right criteria, there's an
3 approach that Dr. Carbon suggested, namely let's see
4 what the reasons are for the criteria and why some are
5 there and some are not.

6 One can deal with it that way, and it's a
7 logical thing to do. There's also a procedural question
8 that has to be addressed, and that is what is the
9 mechanism by which the Commissioners or the Commission
10 establishes that the rules say judge the plant by these
11 criteria. Now, you have rules that have to do with the
12 design criteria for LWR's, and I can find them in 10 CFR
13 50.

14 What is the comparable thing for the CRBR?

15 MR. CHECK: The short answer is that Appendix
16 A, to which I think you are referring, does not restrict
17 itself or is not restricted to light water reactors. It
18 is guidance as well for other kinds, and the preamble
19 says that. So it is a logical starting point for us, as
20 it would be for any LWR.

21 MR. BENDER: I think that's all right, and as
22 a matter of fact that's why from the beginning we've
23 encouraged the staff to say, well, look at the existing
24 criteria. But now if people raise questions as to why
25 there are some criteria that are omitted and others that

1 are added, then I have to say in a procedural sense we
2 are deciding that some of the criteria that the
3 regulations said apply do apply and others do not.

4 MR. CHECK: All will be addressed.

5 MR. BENDER: How?

6 MR. CHECK: In the application, for one, and
7 in our SER this whole process will be laid out.

8 MR. BENDER: I'm thinking in slightly
9 different terms. The SER and the application both must
10 deal with the Commission rules.

11 MR. CHECK: That's correct.

12 MR. BENDER: And we have agonized for months
13 and years sometimes over trivial changes in the rules as
14 they exist. And I'm saying now we're dealing with
15 something that represents somewhere near wholesale
16 changes in the way in which LWR's are dealt with. I
17 think they have to be done and I want to know what the
18 procedural aspects are that enable us to say that the
19 Commission's regulations permit you to invent new
20 criteria and put them into the rules through the SER
21 process.

22 MR. CHECK: Okay, we'll talk about that.

23 MR. BENDER: It's just a matter of
24 understanding.

25 MR. CHECK: When first Rich begins to talk a

1 little bit about how the current ones were developed and
2 as Billy develops how we're doing our current job, I
3 think this will come out. Let me complete my opening
4 remarks, if I may.

5 MR. BENDER: I'm done.

6 MR. CHECK: I think I remarked about the
7 timeliness of what we're doing here, and I left on the
8 thought that it's good that we do this because it is
9 going on with us now and it's useful to have the
10 impressions of how it should go on, what we're doing, so
11 that we can improve.

12 It would be unfair to the formulators of that
13 present version of PDC if I didn't say that I have a
14 strong inclination that we will probably, rather than
15 reinventing here in this current review, will probably
16 be converging on a sort of an embracement or a
17 reaffirmation of what was done before.

18 At any rate, this is the climate I want to
19 create here, that we've come to this meeting not to
20 defend principle design criteria -- we will be able to
21 in some instances -- but to discuss them with you and
22 with your consultants.

23 To help us with this, Rich Stark will lead us
24 through a history of the present principle design
25 criteria and then Bill Morris, over several sessions of

1 the agenda, will outline how we will get to the
2 principle design criteria that will be described in the
3 SER. And just before I turn it to Rich, I will comment
4 on that core dump.

5 We had at the outset a wonderful new idea that
6 we could put the agenda aside and start picking through
7 that and probably be here on Saturday. The good things
8 to talk about and that I think sets the right tone for
9 this meeting, what is it we're trying to do and why is
10 it okay. And then once we can agree or get a consensus
11 on what is the right approach, then we can go on and
12 start filling in some of the holes.

13 MR. ZUDANS: Mr. Bender's question raised
14 turmoil in my mind. What is it that CRBR will have to
15 satisfy? Is it Appendix A or the new set of criteria or
16 both, or Appendix A with some modifications to the
17 criteria that are discussed in the PDC of CRBR?

18 MR. CHECK: We'll try to show that it's a
19 derivative process and the rule is Appendix A, and then
20 we will derive from it something that fits here.

21 I would add one comment -- maybe it's a
22 request -- that I think the applicant participate in
23 some of this. I'm sure he's got good ideas. He's got a
24 safety philosophy that rivals our own, and I hope we are
25 converging on a common one. So as it seems appropriate,

1 that they are not, it doesn't matter unless we've been
2 silly.

3 MR. MARK: However, you're specifically
4 restricting yourself to CRBR?

5 MR. CHECK: Correct.

6 MR. MARK: You're not looking at the CDS and
7 you're not considering pool-type plants, which would of
8 course in some respects be more favorable necessarily?

9 MR. CHECK: That's correct.

10 MR. ZUDANS: This is one thing that bothered
11 me when I read the criteria. It seems like what is
12 first, the chicken or the egg. You know, in principle
13 if you sat down today and with the best people you can
14 get and create a set of criteria and then said, here is
15 a set of criteria and you go and design it, things
16 wouldn't work out.

17 So what you're really doing is the criteria
18 that are being developed and the plants are being
19 designed at the same time. Now, you are in a better
20 position than your predecessors because they did not
21 have a design as far advanced as you have. Will it ever
22 become clear that the design came after the criteria and
23 not before? And if so, why is the criteria here? Why
24 not just do the safety review and satisfy Appendix A?

25 MR. CHECK: There are several questions in

1 there. With regard to the chicken and the egg, if we
2 look at how the general design criteria themselves were
3 established, then if reactors are chickens chickens came
4 before eggs. General design criteria were a
5 codification of good practice.

6 And you're right. You're right, you correctly
7 perceive the tighter loop that we're in. But I wouldn't
8 torture myself with making the case that this came first
9 and that came second. It's in the nature of things that
10 we sort of learn by doing. These are evolutionary
11 processes.

12 MR. ZUDANS: I understand the light water
13 reactor was an evolutionary aspect, and to use the best
14 experience from a couple of them. This is a specific
15 CRBR. It's not likely it will ever be repeated.

16 MR. CHECK: The more reason we should be more
17 restrictive, in our view.

18 MR. ZUDANS: But that's in the safety review.
19 It has nothing to do with criteria. Why not make a
20 larger set of criteria apply to CRBR, such as LMFBR
21 criteria?

22 MR. CHECK: I don't know how practical that
23 is. It would mean I would have to endorse the larger
24 set. I don't know how long that would take and what
25 would be involved. And the regulation is -- look in

is we here

1 Part 50.34 and it says one must agree upon principal
2 design criteria, and that's what we're working toward.

3 We realize there are more general statements
4 of criteria, but we're not sure -- in fact, we know they
5 are not required for establishing plant criteria.

6 MR. MARK: I presume that ANS-54 was not in
7 any way restricted to CRBR?

8 MR. CHECK: No, of course not. It's much
9 broader. And we are participating, too.

10 MR. BENDER: Paul, I don't want to appear to
11 be a proponent of Dr. Zundans' approach, although I can
12 see it as an effective way of doing things. But I do
13 think we need to be conscious of whether we are
14 tailoring the criteria to the existing design or
15 starting with a set of criteria by which the design will
16 be measured.

17 I don't want you to try to defend one approach
18 or the other, but I think the latter has to be the way
19 in which it's done. We have to say the criteria were
20 there and would have been there whether the plant was
21 designed or not, and then measure against it. You may
22 even have to take exceptions to the criteria for the
23 purpose of CRBR. I expect we will.

24 But I think for the purpose of public
25 credibility one has to think in terms of the regulatory

1 agency having a basis for judgment, and I think some
2 attention needs to be given to whether that basis is one
3 with which we are comfortable. I wouldn't be surprised
4 if you ought not to get the Commissioners concurrence in
5 whatever that set is, or at least the method of
6 evolution. That's all.

7 MR. CHECK: Bill Morris feels the need to add
8 to this.

9 MR. MORRIS: With regard to whether you can
10 have a set of criteria developed of the sort that we
11 deal with in the GDC and PDC before you know a good deal
12 about the design, I intend to try to show later on that
13 there is an intimate relationship between the kinds of
14 events that can be experienced and the kind of criteria
15 that you impose. And until you know something about the
16 design in some general form, you cannot adequately
17 demonstrate what those kinds of events might be.

18 And so it seems to me that it would be an
19 artificial thing to do to try to take the separation too
20 far. If you did it, what you would come up with, I
21 believe, would be a set of criteria that would look
22 different from our GDC's and the PDC's for Clinch
23 River. That is, they would be very generalized. And I
24 think this attitude that you take could be addressed to
25 the GDC's as well as to the PDC's.

1 The kinds of criteria that we actually have to
2 work with are intimately related to the events that can
3 occur for given kinds of designs, and you're talking, I
4 think, here about a completely different philosophy for
5 kinds of design criteria.

6 MR. CARBON: Let me take the Chairman's
7 prerogative here of moving us on. But let me also
8 emphasize that I think Mr. Bender expressed very well
9 what both colleagues had in mind, and I think it's a
10 very important concept and I would urge that you not
11 simply disregard it. Let's move on.

12 MR. STARK: Okay. I was going to make one
13 comment on ANS-54, that appears in a memo we have, I
14 think from Mr. Lipinski, and we'll be addressing it
15 perhaps tomorrow on the agenda. But in many cases, even
16 if you look at your letter, ANS deletes as many times as
17 it adds.

18 We're reviewing it very carefully because we
19 want to make sure we know what they're deleting before
20 they delete some things in the existing principle design
21 criteria. So I don't think it's a black and white
22 issue.

23 So with that I'll go back to the slide I have
24 up here.

25 MR. MARK: Could I ask, Mr. Chairman, at the

1 up against light-water criteria. But I just haven't
2 seen the closure point yet. And when you're dealing
3 with things in a legal framework, I think the closures
4 need to be identifiable.

5 MR. CHECK: We must not have made our point
6 earlier.

7 First, we couldn't agree with you more. In
8 fact, some of our difficulty stems from the lack of that
9 document which describes the bases for the decisions
10 that were made.

11 MR. MARK: That's going to be essential.

12 MR. CHECK: It will certainly be, and it will
13 be a significant part of our SER. It will be in there.
14 I know we can't avoid that.

15 MR. BENDER: I think your timing is wrong. I
16 think you have to get that out before you put it in the
17 SER. That's what I think needs to be done. So that
18 when the SER is put out there is no opportunity to
19 challenge the question of whether you had a suitable set
20 of criteria to judge the plant by.

21 MR. CHECK: That's why we're doing certain
22 things in parallel. We're having a meeting such as this
23 so we can be as informed as we can. But there are
24 questions of practicality. I cannot string everything
25 out in series.

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and I

1 wouldn't be a suitable one to me at this stage of the
2 game. Maybe later on I'll change my mind.

3 MR. CHECK: Can I go to the safety
4 philosophy? Was there anything particularly offensive
5 about that, leaving aside the first --

6 MR. BENDER: That's a good statement. What
7 you said is not offensive. That's a different term. I
8 said it's just not -- there's no basis for judging
9 unless you put the judgment criteria out before you
10 present your case.

11 Go ahead.

12 MR. STARK: That's the end of the history.

13 MR. CARBON: I would like to ask Paul a
14 question about this. It's a nice statement and
15 obviously a good thing to shoot for, but I guess I
16 personally don't really know how to do what it says
17 here. Do you worry much about that?

18 MR. CHECK: We think about it, and I'll let
19 Bill Morris tell you what he thinks.

20 MR. MORRIS: It has to do with the way in
21 which we would judge whether or not comparability to
22 light-water reactor safety has been achieved. I think
23 that there are a number of practices that are applied to
24 light-water reactor safety that are equally applicable
25 to this plant -- the protection system, seismic design,

1 I don't know offhand a single event that
2 threatens both the core and the containment of CRBR in
3 the way that a major LOCA threatens the containment and
4 core of a light water reactor. There is probably an
5 analogy up to a point, but at some point, the processes
6 are different.

7 And I think, if you look at containment I
8 think a major sodium fire such as those described in the
9 PSAR in Section 50.6 would be the design basis event for
10 judging whether containment within the design basis is
11 adequate, and perhaps some other event might be the
12 limiting event for the core, and I don't offhand know
13 what that is. In fact, that is part of our review, to
14 determine what those events really are.

15 MR. CARBON: I think at least some people
16 within the technical community would maintain that an
17 energetic event -- core meltdown with an energetic
18 release coming from recriticality or some such thing
19 could maybe happen and certainly, that would be the
20 equivalent or more to a double-ended pipe break.

21 MR. MORRIS: The distinction is that for the
22 CRBR, an event for light water reactors involves that
23 large amount of core melting. That is a Class 9 event,
24 and the major LOCA is a design basis event for Clinch
25 River -- I mean for the light water reactor. So I

1 yourself you have done everything for the bounding
2 event, and then you relax regarding those things which
3 are, at least initially, less severe. But we have tried
4 -- and I am sure others have as well -- to postulate
5 single events and explore consequences, and CDA's just
6 do not happen quite that easily as postulating a single,
7 double-ended rupture of a pipe.

8 MR. CARBON: It is possible there could be
9 considerable argument on that, but I guess do not really
10 know.

11 MR. MORRIS: Let me make sure that I clarified
12 the situation with regard to pipe breaks. Part of what
13 I have said is based upon our judgment made earlier in
14 the review -- that is, some years ago -- that it would
15 be possible to eliminate breaks in the cold leg as
16 design basis events by imposing leak detection measures
17 and pre-service inspection. And that those breaks are
18 not now considered as part of the design basis spectrum
19 because of those measures that we believe are
20 practicable.

21 And that if an instantaneous double-ended
22 guillotine break were postulated in the cold leg, it may
23 have implications for the core. I think it probably
24 could. But the breaks that are now part of our
25 consideration are hot leg breaks primarily. Those do

1 not seem on the surface to have that potential impact.
2 We are going to go through a review to evaluate what the
3 impact of those breaks will be, and I will show you
4 something about the schedule for that work in a few
5 minutes.

6 (Slide)

7 There has been some question I think about how
8 we go, within the NRC, about institutionalizing these
9 criteria, and I just wanted to remind you of some of the
10 factors that go into this process. As I said before,
11 the applicant has proposed principal design criteria.
12 They are in the PSAR in Chapter 3 and in each case he
13 has indicated how he thinks he has implemented and met
14 those criteria. And those are related to the proposed
15 design basis events.

16 The review of the various criteria will be
17 done within NRR in a manner similar to the reviews for
18 light water reactors. Various branches play lead and
19 secondary roles in evaluating these events and the
20 criteria that are related to them. In this, we have
21 pointed out one must take into account the 10 CFR
22 general design criteria and the ANS criteria in
23 evaluating the acceptability of these criteria.

24 We have consultants in research that have a
25 bearing on this review. The evaluation would be subject

1 to the input from the subcommittee which is what we are
2 doing today, and if we take an opinion that is different
3 from the applicant's proposal, we will provide him with
4 that evaluation in the review process and iterate this
5 until we get an acceptable set of design basis events
6 and close the principal design criteria.

7 At which time, assuming we have had this
8 ongoing dialogue with the subcommittee and we feel that
9 we understand your point of view here, we would then
10 propose to publish this in the SER rather than in some
11 preliminary document, as has been suggested here, and
12 that would then go to ACRS for their review.

13 We hope that this communication line here will
14 be the vehicle by which we will avoid having a
15 preliminary publication of the criteria that is separate
16 from the SER. The SER will contain the basis and
17 justification for the criteria.

18 MR. ZUDANS: The SER also will contain a
19 statement saying that Appendix A was satisfied?

20 MR. MORRIS: Appendix A in general, not the
21 specific criteria listed in Appendix A.

22 MR. CHECK: It will have been addressed. It
23 will have been acknowledged as a starting point.

24 MR. STARK: As guidance.

25 MR. CHECK: Let me try again. In Section

1 developed without design. I understand that point. It
2 is a circle and it is a very questionable thing whether
3 you ought to do what you have been doing.

4 MR. STARK: It does function as a good
5 checklist for us, though, because in referring to what
6 hurdles the light water people have to pass over, I
7 think we make sure that this applicant or this
8 application looks at the same bases or the same thinking
9 anyway, so it is still a key ingredient.

10 MR. CARBON: Yes, it is worthwhile. It
11 establishes some standards, some minimum requirements,
12 and many of those are very good. I do not question its
13 value.

14 (Slide)

15 MR. MORRIS: Just to give you an indication of
16 the degree of similarity between the CBRB principal
17 design criteria and the GDC criteria, I have indicated
18 in this table that 38 of the principal design criteria
19 are identical to the 10 CFR criteria. Ten are similar
20 with only a slight variation. That gives a total of
21 approximately 86% comparability between the light water
22 reactor criteria and the LMFBR criteria.

23 And I do not think, as Dr. Carbon suggested, I
24 don't think it is a trivial set of criteria because here
25 included are criteria to contend with seismic events,

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1 floods, fires, and which address quality assurance, and
2 all of these features and all of these measures go into
3 assuring that the severe accidents or Class 9 accidents
4 are unlikely to occur.

5 There are eight of the principal design
6 criteria with no 10 CFR Appendix A counterpart, and
7 there are 9 10 CFR 50 criteria for which no comparable
8 CRBR principal design criteria exist. There is a
9 listing or tabulation of these various criteria in
10 various categories that you have been provided, and it
11 is there for your use in reviewing these similarities
12 and to help you see what the differences are.

13 (Slide)

14 What I am going to do is concentrate on some
15 of those differences now, and I am referring now to
16 first, Section 1 of this document that you have been
17 provided in which you have a listing of these criteria
18 in 10 CFR 50, for which no comparable principal design
19 criteria have been adopted yet. And I thought I would
20 spend a few minutes just discussing some of what I think
21 are the implications of these criteria being absent from
22 the PDC's in Clinch River.

23 First off, the one on reactivity limits -- if
24 you read criterion 28, and it is included here in
25 Section 1, if you read that you will see that it

1 do not see the need for it right now. It may work out
2 that way, we could probably put one on.

3 MR. ZUDANS: Well, it doesn't hurt.

4 MR. CHECK: Well, I take exception to adding
5 things that are not necessary.

6 MR. ZUDANS: You are removing things in this
7 case. It is already there. It is unfortunately design
8 specific. The criteria are so general that they are
9 beautiful, like quality assurance, protection against
10 natural phenomenon, all of those things have general
11 criteria. They are really a general description of an
12 environment. That is what I would call really general
13 design criteria.

14 MR. CHECK: Which is not what we are doing.

15 MR. ZUDANS: Many things are very specific and
16 design-dependent.

17 MR. CHECK: I don't think we are leaving --

18 MR. ZUDANS: You have to review it, it is
19 already done. I think the same defect is with the
20 general design criteria. They are also not sacred in
21 that sense.

22 MR. LIPINSKI: They are looking at a design
23 that has certain features that are inherently safe on
24 reactivity, but if the designer were free to design --
25 and let us assume that he elects to put pneumatic drives

1 in all the control rods and he uses closed-loop position
2 control rather than screws, and I have an opportunity
3 for a common mode failure of all of my drives, to go
4 full velocity out, or if I have a single drive worth
5 more than a dollar then I could drive outwardly because
6 I have this peculiar mechanism, or if I design them all
7 to work the same way I can drive all the rods out.

8 But a common mode failure on an LMFBR, to have
9 a specification that limits the reactivity as well as
10 the rate of reactivity addition, I think it is real
11 important that the fact that these designers recognized
12 it and included it in their design does not mean there
13 should not be a GDC that covers that issue.

14 MR. CHECK: I agree with you.

15 MR. LIPINSKI: These designers recognize the
16 issue and LMFBR particularly is sensitive to reactivity
17 and it is inherent in this design. But the fact that
18 there is not a criterion to cover it is interesting.

19 MR. CHECK: I am not prepared to fight any
20 battle here. I do not think that that is that
21 significant an issue. Between us, we have the same
22 objective. We are looking at this right now and I
23 understand there are questions to the applicant on this
24 point. There is yet work to be done. I don't have any
25 major disagreement with what you are saying.

position

1 MR. CARBON: I don't think there really is a
2 technical problem here. We all recognize the importance
3 of it technically. I think the question is, what do
4 these criteria mean. And going back I guess to me,
5 probably Mike expressed it best way back there in
6 pointing out or making the statement that we have to be
7 sure that these are viewed as standards by which CBBR is
8 judged, rather than something that -- I think his words
9 were something along the lines of prepared to help
10 justify what we are doing.

11 It is a credibility problem in part. It
12 really is not a technical problem, I don't think. I
13 know the design has certain limits to it and so on.

14 MR. ZUDANS: It is interesting what Walt just
15 said. The designers recognize the need for this
16 protection, but that does not mean that should be a
17 reason to remove that criteria. Clearly, such a problem
18 would be postulated by improper design.

19 MR. BENDER: Well, let me offer an analogous
20 -- not specifically analogous but comparable kind of
21 circumstance in the LWR criteria. I don't think there
22 is anything that says pressure vessels cannot fail in
23 the LWR criteria. It is implicit, and there will be a
24 lot of implicit criteria here because you really don't
25 want criteria to state the obvious all the time.

1 I think I am concerned personally about being
2 sure we understand the logic. That is mostly why I am
3 pressing the matter. I would like to see something
4 written down. The criteria are kind of bald right now.
5 They just say, here are the criteria. But why they are
6 the criteria leaves a lot to the imagination, and while
7 I am very comfortable with what I understand about
8 LWR's, I do not think I have any reason to believe that
9 anybody here should have less discomfort than me with
10 the question of whether I understand why LWR's have
11 certain criteria.

12 I have looked at the criteria a long time, and
13 I do not know about a lot of them. Walt knows about
14 some and everybody in this room knows about some, but
15 none of us knows about the same ones.

16 MR. CHECK: I do not know why it occurred to
17 me only yesterday, but I started looking for a similar
18 document for these, for the Appendix A. There is not
19 one.

20 MR. BENDER: I am sure you are right, and
21 there is not one for Fort St. Vrain, and so the
22 precedent that we are searching for does not exist.

23 But there has been a change in the regulatory
24 process over the years. When water-cooled systems were
25 engineered there was no regulatory system. It was

1 created afterwards. When Fort S. Yrain was built, the
2 regulatory system was in transition. It was treated as
3 a special case, and this could be treated as a special
4 case if the law did not say that the CRBR must be put
5 through the licensing process. That is the thing that
6 I keep asking myself about and it is the thing you guys
7 need to think about in terms of what the regulatory
8 challenges will be when you want to stand up before the
9 hearing boards or the courts and say, we are ready to
10 license this because --. I don't put it forth as a
11 technical argument at all; I just say it is something
12 you need to be sure you do.

13 MR. CHECK: We do think about that a lot. We
14 are plotting strategy right now. Cecile Thomas is not
15 here because he is home working on that. We have
16 announced -- and I will say it again -- that unlike
17 perhaps any other case, we plan to postulate and defend
18 the same criteria for this plant.

19 Now, the timeliness of that defense is perhaps
20 troublesome to some, but it will be in our SER if not
21 sooner.

22 MR. MORRIS: Again, let me point out that we
23 do not consider the issue in criterion 28 closed. We
24 have a review in progress to determine whether we think
25 it should be added, and its potential omission is what

1 will say well, of course, we have not necessarily
2 thought of everything. But you know that it could only
3 occur as a consequence of a loss of flow or a transient
4 over power or perhaps there are other things which could
5 bring it about. I am not sure.

6 Those are the ones that I believe are most
7 frequently pointed at and are we right in spending so
8 much time in discussing how it might proceed, or should
9 we not be putting all our eggs in the basket of saying
10 let's have a transient overpower which could lead to
11 it?

12 MR. MORRIS: I agree that one of the main
13 thrusts of our review must be to assure that CDA does
14 not occur or at least is very improbable, and those more
15 specific requirements or design measures that will be
16 built into Clinch River will be designed just for that
17 purpose.

18 A large part of our review is related to
19 avoiding CDAs.

20 MR. MARK: I am delighted. That is what I
21 think it should be.

22 MR. MORRIS: And I think what you may see in
23 that research document is a weighting on the side of
24 understanding CDAs. That is because that research is
25 one of the tools for doing that kind of thing, whereas

1 However, we believe that we should then check
2 the design to determine that if a CDA occurred that
3 there would not be an early containment failure and
4 hence an unacceptable consequence from that event that
5 is inevitable if the CDA is initiated. And we believe
6 that it is practical and feasible to impose design
7 features on the plant to assure that the CDA is an
8 improbable event sufficient to exclude it from the
9 design basis.

10 That is part of our effort.

11 MR. MARK: I did not mean to be challenging
12 your approach. I knew a little bit about it, I suppose,
13 and I think the way you have put it sounds very good to
14 me. You have got to consider it. I realize that.

15 MR. CHECK: I doubt there is anybody in this
16 room who would not grab at the mechanism for excluding
17 the CDA. I guess what we are doing is we are confessing
18 to you we do not know how to do that.

19 MR. MARK: And neither do I.

20 MR. CHECK: So we are going to do what we can
21 to minimize the probability and we are going to look at
22 ways to accommodate it even if it were to occur.

23 MR. MARK: For the latter, it is not
24 immediately clear to me that you need to describe the
25 way the fuel drips, slumps, glops, drizzles from here t

1 DBA, you did not proceed to explain why you wanted to
2 keep it a CDA as to what the difference was between DBA
3 analysis and CDA analysis.

4 MR. CHECK: Between Class 9 and Class 8 and
5 below that is a lot of money, a different design.

6 MR. MORRIS: The rules for analysis of a LOCA,
7 for instance, are codified. They are very formalized.
8 We do not believe it is imperative to do that for a CDA
9 or Class 9 events. Well, it may seem sort of
10 inappropriate to say there is an element of realism in
11 evaluating a CDA when some people think there is no
12 realism in assuming it could occur.

13 But we would imagine that our evaluations and
14 the analysis done by the applicant does not have to be
15 as conservative for a CDA as they do for a DBA and yet I
16 do not know how to gauge exactly what that level of
17 conservatism should be. It is usually a matter of
18 judgment after we understood the case better and better
19 understand where we are with regard to what
20 conservatisms need to be imposed on that analysis.

21 MR. BENDER: In this notorious Gamble-Caffey
22 letter numbers were kicked around like 1200 megawatt
23 seconds as being a number that had to be complied with.
24 I have never been comfortable that anybody had a
25 legitimate basis for deciding what the number ought to

1 consequences of this reactor undergoing some event. It
2 becomes a more difficult thing to decide precisely what
3 we have to do, what has to be shown to move forward.

4 The previous team adopted a strategy of
5 development of a source term. They called it a site
6 suitability source term, but I would imagine that they
7 meant in the sense of Part 100 and TID 14.844. It is a
8 source term that would be used in the ultimate
9 determination of site suitability for Part 100 purposes.

10 MR. MARK: You mentioned yesterday, I think,
11 that there will be a hearing perhaps starting in August
12 and that intervenors are going to meet on the question
13 of CDA, for example. Is the question of the site
14 expected to be in contention?

15 MR. CHECK: Yes, yes. I have not quite
16 finished. I realize I am rambling, but I am trying to
17 string together a history and some rationalization for a
18 logical approach to this which, quite frankly, is aimed
19 at describing that minimum, that minimum that we must do
20 for LWA-1 purposes.

21 I could clearly understand if one went ahead
22 and made all the findings one needs for a CP. That I
23 would have done enough for an LWA-1, but I want to do
24 something a great deal less for the kinds of reasons
25 that we have given you before. We are simply not going

1 to be prepared in August to litigate all of the big
2 issues, the CDA, for example. Whether the CDA is a
3 Class 9 or a DBA is an issue, a contention.

4 That, of course, has implications, very direct
5 implications on what the source term itself should be;
6 and that is why we are re-examining what was done before
7 and seeing if we can do less and still meet
8 responsibility requirements for LWA-1 findings. So
9 source term is out there. It has been broached. It was
10 discussed before, I take it, although I have not yet had
11 the full discussion with the developers of that strategy
12 that I want. Tomorrow, as a matter of fact, Delbert
13 Bunch and Richard Sterasteki are coming to Washington to
14 discuss this matter with us. I want to peel back just
15 the paper and find out what the bases were for the way
16 they had developed their strategy.

17 MR. MARK: As I understand it, the business of
18 demography -- they really do not present serious
19 problems, and it will be hilarious if the intervenors
20 bring this up -- is the possibility of interrupting
21 operations at K25, which they obviously would like to
22 interrupt anyway. To raise that as a contention will
23 really be great fun.

24 But I think you have said everything I -- I
25 had a point to ask here. With one exception I myself do

1 in my opinion, a different reactor. You do not just go
2 in and put a 50 psi containment building where you had
3 been planning a 10 psi.

4 The other thing is, as you well recall, the
5 staff had on some arbitrary basis said if we can hold a
6 large release for 24 hours or some time like that, that
7 would be acceptable with regard to containment
8 performance. That issue was never really discussed with
9 the ACRS.

10 It seems to me implicit in that there has to
11 be some likelihood, what is the likelihood that you will
12 accept that release at. It is certainly not acceptable
13 if it is a frequency of 1 in 1,000 per year. It may be
14 at that level at some substantially smaller frequency,
15 but that was not in -- there was something like 10⁻⁶
16 in that statement, but I know of no basis to assume that
17 that 10⁻⁶ number was rigid or would be met or so forth.

18 So I have, as I say, these kinds of questions
19 in trying to know, in looking at the agenda items, how
20 one goes from general design criteria to acceptance
21 criteria as it relates to the site, the kinds of things
22 I have just indicated on seismic and possibly on
23 hydrology.

24 MR. CHECK: Well, I am going to take the
25 comments as advice as much as I will as questions,

1 because while it may turn out that in the subsequent
2 discussions today we touch upon some of the matters you
3 brought up, I am not prepared to discuss them at length.

4 They were, as I understand it, on the question
5 of hydrology and seismology you believe that it is
6 important when establishing an acceptance criterion to
7 have an appreciation for what margin there is in the
8 plant for insults of either variety. It sounds like it
9 makes sense to me.

10 I think that you imply that it is important to
11 know something of the design before one can evaluate
12 these things. They do not parse. They are not entirely
13 separable issues. I agree with you on that. I agree
14 with you on that.

15 The earlier discussion I was having about
16 LWAs, site suitability as opposed to construction
17 permits, was acknowledging in fact something that you
18 have put quite well: that one cannot make -- here is
19 the paradox -- the regulations seem to allow some
20 movement forward without the complete and total finding,
21 the integrated finding, what is it I must find, given
22 that the Applicant is going to accept some risk for
23 having to go redo, undo, and I am -- that is what we are
24 focusing on in the earliest phase of our hearing
25 preparation back in Bethesda, looking for those things

1 that seem with a good degree of confidence safe
2 statements to make. Is this a capable site? Without
3 dwelling on the LMFBR as the reactor to be put there in
4 all its nuances, is this a capable site?

5 And then go on, bridge the gap, handle the
6 question of the size and type reactor with words that
7 are going to be an expression of engineering confidence,
8 confidence in technology to surmount any problems that
9 may be encountered.

10 You mentioned the containment. That probably
11 can be viewed as two kinds of problems, one of
12 practicality and one of feasibility. If we proceed down
13 this path of minimum finding, we are going to be leaning
14 toward the finding of feasibility.

15 MR. OKRENT: I think that is an inappropriate
16 path if that is really the one you are planning to take
17 for a variety of reasons, many of which have been said
18 before, even at the Supreme Court.

19 MR. CHECK: Well, I would like to hear more on
20 it because I am trying to distinguish in my mind the
21 quality, the quantity, the nature of the finding that
22 needs to be made for an LWA-1 or site suitability and a
23 construction permit.

24 MR. OKRENT: You have to have in mind, it
25 seems to me, a reactor that resembles the one that the

1 Applicant has in mind or it is just not a meaningful --

2 MR. CHECK: It has to be some reasonable
3 variation of it. I realize that. I realize that. I am
4 not talking about digging a hole a hundred feet in the
5 ground and filling it in.

6 Billy, back to you.

7 MR. MORRIS: The development of more specific
8 acceptance criteria would derive from the principal
9 design criteria, and in addition to that at the stage of
10 developing more specific acceptance criteria one would
11 look at not only design basis events but postulate
12 severe accidents, and this is the distinction between
13 this phase of the review and the phase described
14 yesterday for developing principal design criteria.

15 We realize we are going to have to check the
16 capability of the design to accommodate severe accidents
17 beyond the design basis, that is, core disruptive
18 accidents. And there will not be principal design
19 criteria for those, but rather a general objective that
20 the risk from this plant will be somewhat comparable to
21 that from light-water reactors, and including the
22 possibility that light-water reactors will experience
23 severe accidents, Class 9 events.

24 The procedure will as usual be to have lead
25 and secondary NRR branches executing the review for

1 UNITED STATES OF AMERICA
2 NUCLEAR REGULATORY COMMISSION

3
4 ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
5 SUBCOMMITTEE ON THE CLINCH RIVER BREEDER REACTOR

6 Room 1046
7 1717 H Street, N.W.
8 Washington, D.C.

9 Wednesday, May 5, 1982

10 The Subcommittee on Clinch River Breeder
11 Reactor met, pursuant to notice, at 9:35 a.m., Dr. Max W.
12 Carbon, Chairman of the Subcommittee, presiding.

13 ACBS MEMBERS PRESENT:

14 M.W. Carbon, Chairman
15 J.C. Mark, Member
16 W.S. Mathis, Member
17 M. Bender, Member
18 Z. Zujans, Consultant
19 W. Kastenberg, Consultant
20 W. Lipinski, Consultant

21 DESIGNATED FEDERAL EMPLOYEE:
22 P. Boehnert
23
24
25

1 meeting which calls for the discussion of this subject.
2 You have \$3 million or \$\$ million invested in the
3 discussion. If we thought this was a far-out thing like
4 how will you find the water you need on the moon or
5 something like that, we might not want to have the
6 meeting.

7 MR. CHECK: Cardis is referring in his earlier
8 comments to the manner in which we pursue this. I think
9 while almost irrespective of a probability we could
10 assign to this class of events and agree upon, we would
11 nevertheless be looking at the capability of the plant
12 to withstand them. That just is the way.

13 MR. MARK: Look, I am not really that far away
14 from you.

15 MR. CHECK: I understand that.

16 MR. MARK: What we are saying is we have to
17 understand something about the progress of such an
18 event. We have not been quite able to decide whether it
19 is a design-basis event or not a design-basis event. We
20 have not been able to decide whether it is a likely
21 event or an unlikely event. But we have decided that we
22 must understand it.

23 We are going to have to face up, however, at
24 some point to the extent to which we insist that this
25 event be prepared for in the design. Is it or is it not

1 design basis?

2 In 1974, I believe it was a design basis. In
3 1976 it was set aside as not a design basis. Yesterday
4 we heard it is not design basis. Usually, we do not
5 really discuss things which are not design bases nor
6 feel that it is necessary.

7 Here, for some reason not totally clear to me,
8 we are acting as if it were.

9 MB. CHECK: I am glad you bring this up. It
10 is worth discussing. I agree with much of what you
11 said, but I disagree with parts of it. I think you will
12 find a consistency in our approach with what is being
13 done in water reactors. The committee has listened to
14 the staff, not this Staff, on questions of hydrogen in
15 containment that takes place beyond the design basis,
16 much of that does.

17 So it is in that same sense that we are
18 looking at the CDAs here. You said something about how
19 it is classified, whether it is DBA or not. While I am
20 not the ultimate historian, I think it has never really
21 been classified as a design basis event. It has skirted
22 it; it has come close. I think we are prepared to say
23 that it is not a design-basis event without being able
24 to prove that today, without wishing to make that case
25 today.

1 Ultimately, we will have to, we know that.
2 And we will be prepared at the time of our SER to defend
3 our position more fully. But for now, we state it as a
4 requirement and an objective that the CDAs will not be
5 design-basis events. And I believe that you will see
6 the treatment we are giving them is consistent with that
7 beyond the design-basis classification.

8 MR. BELL: My name is Charles Bell. I am the
9 associate group leader for the safety analysis group at
10 Los Alamos National Laboratory.

11 I appreciate the background that Denny
12 Switwick and Dave Weber and his colleagues presented
13 yesterday. I think it is very helpful to have that
14 background as we proceed to try to delineate the areas
15 where we are struggling still to try to come to a clear
16 understanding of what some of the issues that are still
17 outstanding really are, what their implications are, and
18 if indeed they are really issues or not.

19 So part of what I would like to lead you
20 through now is a little bit of perspective, looking at
21 it perhaps in a little different aspect than was looked
22 at yesterday, where we are trying to think a little bit
23 more conservatively perhaps in the sense of seeing if
24 there are areas that perhaps have not been treated as
25 fully as we would like or perhaps interpretations of

1 an energetic core disruptive accident in general terms,
2 one in fact that exceeded the capability of the primary
3 system and one therefore that involved some release of
4 plutonium and fission products to the containment.

5 It was a conceptual and representative event
6 that was considered, and therefore in treating the
7 environmental impact of CDA's or Class 9 accidents, we
8 have taken a representative case and incorporated that
9 into the FES. And in treating the site suitability
10 report, we have not included a mechanistic bound for
11 CDA's in the site suitability source term.

12 In summary, the CDA energetics -- the siting
13 effort is not sensitive to CDA energetics.

14 MR. MARK: You said you will possibly
15 arbitrarily include some plutonium in the source term.
16 That takes more than melting, does it not? Does that
17 not take fuel vaporization?

18 MR. MORRIS: The source term is a
19 non-mechanistic source term, and the only reason that I
20 mentioned that it would involve something that could be
21 connected to a CDA would be that you would imagine a CDA
22 would have to occur in order to get one percent
23 plutonium inventory into the source term.

24 MR. MARK: You sure would have to imagine
25 that.

1 (Laughter.)

2 MR. MARK: So it is a hypothetical source
3 term, like the hypothetical core disruption that goes
4 with that.

5 (Laughter.)

6 MR. MORRIS: It is chosen to provide a
7 preliminary conservative bound to the kind of releases
8 that could occur in containment, and because it is
9 preliminary it has been chosen to be somewhat
10 conservative.

11 MR. MARK: And you say one percent is the kind
12 of number you are thinking of?

13 MR. MORRIS: Yes.

14 MR. MARK: The same as in WASH-1400?

15 MR. MORRIS: I'm not sure in which context you
16 refer to WASH-1400.

17 MR. MARK: I think some of the source terms
18 allow one percent of the solids to come up.

19 MR. MORRIS: I think the relation is not
20 necessarily one that the source term was inferred from
21 WASH-1400.

22 MR. CARBON: I would ask another hypothetical
23 question. It is going back to the same one. If the
24 project showed that the containment would withstand a
25 certain energy release and somewhere down the road you

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I hereby certify that copies of NATURAL RESOURCES DEFENSE COUNCIL, INC. AND THE SIERRA CLUB PETITION TO THE COMMISSIONERS TO EXERCISE THEIR INHERENT SUPERVISORY AUTHORITY TO DELINEATE THE SCOPE OF THE LIMITED WORK AUTHORIZATION PROCEEDING FOR THE CLINCH RIVER BREEDER REACTOR were served this 11th day of June, 1982 on the following:

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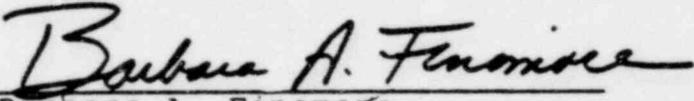
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