



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

J. Linder

July 28, 1982

MEMORANDUM FOR: Chairman Palladino
Commissioner Gilinsky
Commissioner Ahearn
Commissioner Roberts
Commissioner Asselstine

FROM: *Forrest J. Remick*

SUBJECT: REVISED CLINCH RIVER BREEDER REACTOR PLANT REPORT:
REQUEST FOR AUTHORIZATION UNDER 10 CFR 50.12 TO CONDUCT
CERTAIN SITE PREPARATION ACTIVITIES

On July 22, 1982, we provided the staff report on the Clinch River Breeder Reactor Plant (CRBRP) exemption request. That report identified the technical and policy issues raised by the request, summarized the relevant background information, summarized the applicants' position on the various factors of 10 CFR 50.12, and provided certain staff evaluations.

The enclosed report is a revision of the July 22, 1982 report. This report incorporates the positions of the Natural Resources Defense Council, Inc. and the Sierra Club (Intervenors) and the Union of Concerned Scientists on the various factors of 10 CFR 50.12. The positions of the intervenors were taken from their brief dated July 22, 1982 or from their prior submittals which the intervenors incorporated by reference.

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REVISED

CLINCH RIVER BREEDER REACTOR PLANT REPORT

July 28, 1982

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1. Introduction

This report has been prepared for Commission use in considering the merits of the Clinch River Breeder Reactor Plant (CRBRP) exemption request. The purpose is to identify the technical and policy issues raised by the request, to summarize background information relevant to the issues, and to summarize the position of the participants in this proceeding.

However, on certain environmental and cost issues discussed, the report includes staff evaluations which present conclusions. These are provided for Commission use and consideration in reaching its decision on the exemption request. However, following Commission guidance this report makes no recommendations on the merits of the exemption request.

The report addresses each of the various factors of 10 CFR 50.12 that the Commission must consider and balance in reaching a decision. For each factor the views of the participants are summarized.

1.1 Applicants' Request

By letter dated July 1, 1982, (Davis' Letter),¹ The Department of Energy (DOE), on behalf of itself and coapplicants Project Management Corporation (PMC) and Tennessee Valley Authority (TVA) (applicants) requested authorization from the Nuclear Regulatory Commission (NRC), under 10 CFR 50.12, to conduct site preparation activities for the Clinch River Breeder Reactor Plant at the proposed site in Oak Ridge, Tennessee, beginning in August 1982. The applicants state in their Site Preparation Activities Report (SPAR), which accompanied the letter, that completion of these preliminary activities will result in significant time savings in the project completion schedule and will advance the date when the objectives of the demonstration project can be accomplished.

¹Due to the large number of documents used to prepare this report, references have been abbreviated for convenience. Attachment A provides complete citations for these reference abbreviations.

The site preparation activities that are proposed by the applicants under this request are as follows:

- About 292 acres of land would be cleared and graded for roads, railroads, temporary construction facilities, parking lot, main plant, cooling towers, switchyards, storage areas, onsite quarry, runoff treatment ponds, concrete batching and mixing plant, and the barge unloading facility.
- Earthwork would include excavation, of approximately 2,151,000 cubic yards of soil and rock for roads and railroads, concrete batching and mixing plant, parking lot, main plant, cooling towers, switchyards, storage areas, temporary construction facilities and buildings, runoff treatment ponds, and quarry operations. Limestone and siltstone from the excavations would be used for surfacing parking and laydown areas or as backfill. Topsoil would be preserved for future use in landscaping the site.
- Facilities that would be constructed include: a permanent access road; temporary onsite roads; construction parking areas; railroads and railroad spurs; contractor work and storage areas; construction utilities, including electric power, potable and raw water, and compressed air; concrete batching and mixing plant; onsite quarry, crushing facility, and stockpile areas; sanitary facilities and sewage treatment plant; fire protection system; runoff treatment ponds; storm drainage system; barge unloading facility; construction buildings; permanent main survey control lines and benchmarks; circulating water piping between the cooling tower and turbine-generator building; and emergency plant service water piping between the electrical equipment building and emergency cooling tower.

The above activities are described in more detail in Section 3 of the SPAR. They do not include construction of permanent main plant buildings and, except for the emergency plant service water piping, are not safety related.

The emergency plant service water piping is part of the safety-related emergency plant service water system. The emergency plant service water system is designed to provide sufficient cooling water to permit the safe shutdown and

the maintenance of the safe shutdown condition of the plant in the event of an accident resulting in the loss of the normal plant service water system, or the loss of the plant ac power supply and all offsite ac power supplies. The emergency plant service water system is not used during normal plant operation. The system provides the emergency chilled water system chiller condensers and the standby diesel generators with cooling water. Additionally, this system provides fire fighting water for the seismically qualified fire pumps of the nonsodium fire protection system.

The emergency plant service water piping consists of four 16-inch diameter, carbon steel pipes designed to seismic Category 1, Safety Class 3 and Quality Group C requirements. The applicants propose to install the piping between the electrical equipment building and the emergency cooling tower and backfill with Class A fill in order to permit easier crane access and more appropriate areas for prefabrication of cell liner and rebar modules.

The staff has not completed its construction permit stage safety review of the emergency plant cooling water system. However, the staff has reviewed the applicants' quality assurance plan which is described in Chapter 17 of the CRBRP PSAR and believes that it is acceptable for the ~~installation of the emergency plant service water piping between the electrical equipment building and the emergency cooling tower~~. The staff believes that if this activity is permitted, it should be conducted and documented in accordance with the applicable provisions of the applicants' quality assurance plan. The documentation should include but not be limited to backfill data, flush test results, hydrotesting results, weld inspection and test data, and pipe physical and chemical properties data. Also, prior to the installation of the piping, the applicants should provide to the staff, in the context of its construction permit stage safety review, analyses and procedures which assure that subsequent overground loads will not compromise the quality of the piping.

~~OPF recommends that the staff consider accepting the applicants' during their presentation on March 18, 1982, for further justification to why this safety-related work is requested as part of the 10 CFR 50.12 exemption request.~~

1.2 Exemption Criteria

The applicants have requested an exemption from some of the requirements of 10 CFR 50.10 under 10 CFR 50.12. Section 50.12 provides that:

- (a) The Commission may, upon application by any interested person or upon its own initiative, grant such exemptions from the requirements of the regulations in this part as it determines are authorized by law and will not endanger life or property or the common defense and security and are otherwise in the public interest.
- (b) Any person may request an exemption permitting the conduct of activities prior to the issuance of a construction permit prohibited by §50.10. The Commission may grant such an exemption upon considering and balancing the following factors:
 - (1) Whether conduct of the proposed activities will give rise to a significant adverse impact on the environment and the nature and extent of such impact, if any;
 - (2) Whether redress of any adverse environmental impact from conduct of the proposed activities can reasonably be effected should such redress be necessary;
 - (3) Whether conduct of the proposed activities would foreclose subsequent adoption of alternatives; and
 - (4) The effect of delay in conducting such activities on the public interest, including the power needs to be used by the proposed facility, the availability of alternative sources, if any, to meet those needs on a timely basis and delay costs to the applicant and to consumers.

Issuance of such an exemption shall not be deemed to constitute a commitment to issue a construction permit. During the period of any exemption granted pursuant to this paragraph (b), any activities conducted shall be carried out in such a manner as will minimize or reduce their environmental impact.

1.3 CRBR Programmatic Objectives

The applicants' exemption request is an initiative to implement the Administration's policy in regard to the Liquid Metal Fast Breeder Reactor (LMFBR) technology demonstration program and the CRBRP. The President's October 8, 1981 nuclear energy policy statement established this Administration's policy on the LMFBR program and CRBRP, as follows:

"I am directing that government agencies proceed with the demonstration of breeder reactor technology, including completion of the Clinch River Breeder Reactor. This is essential to ensure our preparedness for longer term nuclear power needs."

According to the 1977 NRC Staff Final Environmental Statement (FES), NUREG-0139, the CRBRP is expected to play a major role in meeting the following objectives (FES, p. 8-3). (These objectives have not been altered in the 1982 FES Draft Supplement):

- (1) Demonstrate that the necessary technology is available to scale up and successfully construct and operate commercial-sized LMFBRs,
- (2) Provide a technical basis for extending the technology to future commercial plants where improvements in fuel life, plant capacity and thermal efficiency will be made for economic reasons,
- (3) Develop operating data on the environmental impact of the LMFBR before large numbers of commercial development,
- (4) Provide a demonstration of the nuclear parameters necessary for commercial development,
- (5) Demonstrate the minimal impact from disposal of radioactive waste materials,
- (6) Demonstrate the equipment on a large scale, and
- (7) Demonstrate the breeder concept in an industrial environment.

In their recent submittals to the Commission, the applicants have not indicated that these objectives have been changed since 1977.

The Energy Reorganization Act of 1974, Section 202, mandates that one purpose of the CRBRP is to demonstrate its suitability for commercial application, including licensing and regulation by NRC.

2. Positions on 10 CFR 50.12(a)

As noted above, 10 CFR 50.12(a) calls for a determination by the Commission, in the event an exemption is granted, that the exempted activities are authorized by law, do not endanger life or property or the common defense and security, and are in the public interest. In this Section, the applicants' position on these factors is described.

2.1 Authorized by Law

The need to determine whether the requested exemptions, if granted, are authorized by law involves consideration of the requirements of relevant statutes.

2.1.1 Atomic Energy Act (AEA)

Applicants' Position

The applicants believe that the AEA does not contain any provisions or requirements which prohibit the conduct of site preparation activities at this time. The AEA does not require hearings or any other form of approval prior to the commencement of site preparation activities. Indeed, prior to the enactment of NEPA, applicants routinely initiated site preparation activities without any AEA action whatsoever (Supporting Memorandum, pp. 4, 10).

Intervenors' Position

The National Resources Defense Council, Inc. and the Sierra Club (intervenors) state that Section 189a of the AEA provides intervenors a statutory right to a hearing on their contentions. A contention in the proceeding is that the LWA procedure is not applicable to CRBRP. The substance of this contention is similar to the substance of the exemption request. Therefore, the Commission cannot decide this contention in a non-adjudicatory forum (Intervenors' Answers, pp. 22-23).

2.1.2 National Environmental Policy Act (NEPA)

Applicants' Position

The applicants state that in granting their request to begin site preparation activities pursuant to 10 CFR 50.12, the Commission would not waive any requirements of the National Environmental Policy Act (NEPA). In light of the conclusions of the 1977 FES, the analysis in the SPAR, the NRC staff's favorable review of the applicants' site preparation activities, and the Commission's finding that the activities will not cause significant environmental impacts all requirements of NEPA have been satisfied. The National Environmental Policy Act only requires "full environmental disclosure and review" and does not require a Federal agency to convene hearings.

Thus, in requesting authorization to allow site preparation activities to run in parallel with the hearing process, the applicants are asking that the Commission exercise its lawful discretion--where the requirements of NEPA have been met--to permit site preparation activities prior to completion of the hearing process required solely by Commission regulations (Supporting Memorandum, pp. 4, 9, 9-11).

Intervenors' Position

The intervenors noted that it is perhaps clearer today than it was in March that granting the Section 50.12 exemption request would violate NEPA and is therefore not "authorized by law" within the meaning of Section 50.12. On July 19, 1982, the Staff determined that significant new information concerning the environmental impacts of the CRBR project has necessitated the preparation and circulation of a 390-page "Draft Supplement to the 1977 Final Environmental Statement related to construction and operation of Clinch River Breeder Reactor Plant" (NUREG-0139, Supplement No. 1, Draft Report). This weighty document updates virtually every section of the 1977 FES, and, under NEPA, must be circulated to the public and interested agencies for comments before a final Supplement is prepared. Until a final Supplement

is issued, however, NEPA prohibits the Commission from authorizing commencement of site preparation work at the proposed CRBR site, (Intervenors' Brief, p. 6).

2.1.3 Commission Practice

Applicants' Position

The applicants believe that in promulgating Section 50.12, the Commission recognized its obligation to ensure that its regulatory requirements do not cause undue hardship. Indeed, Section 50.12 reflects a conscious Commission policy decision to preserve its discretion to authorize site preparation in exceptional cases involving undue hardship. In this regard, Section 50.12 establishes an explicit set of conditions which assure that any Commission decision authorizing site preparation will comport with sound discretion and full consideration of environmental values.

The Commission has stated that the exercise of its Section 50.12 authority would be limited to truly exigent and exceptional cases. This case is both exigent and exceptional in at least three respects: (1) there are national policies in favor of expeditious completion of the project; (2) the project is in an advanced stage of development, and unless relief is granted, undue hardship will inevitably result; and (3) in light of the project's unique nature, the grant of relief in this case would not be precedent-setting and would be entirely consistent with the Commission's sparing use of its Section 50.12 authority (Supporting Memorandum, pp. 12-15).

Intervenors' Position

The intervenors stated that in considering an exemption request under 10 CFR §50.12, the Commission must conduct essentially a three-step inquiry. First, it must decide, as a threshold matter, whether there are fundamental deficiencies in applicants' request which compel its denial as a matter of law or policy. Second, it must determine whether there are "emergency" and "exigent" circumstances which would justify extraordinary relief from standard licensing process.

Third, even if such circumstances do exist, it must consider and balance each of the four specific criteria set forth in 10 CFR §50.12(b) (Intervenors' Brief, pp. 2-4).

Current Staff Evaluation

The staff's current evaluation of Commission practice is contained in the Commission's Memorandum and Order of December 24, 1981 in the matter of the Clinch River exemption request, especially footnote 2, which is quoted below for Commission reference.

Only 5 exemption requests have been considered by the Commission over the years, and in only two cases did the Commission hold a hearing. However, both cases arose under unusual circumstances. In Carolina Power and Light Company (Shearon Harris Nuclear Power Plant, Units 1, 2, 3, and 4), CLI-74-9, 7 AEC 197 (1974) (Shearon Harris I), the Deputy Director for Reactor Projects, Directorate of Licensing had granted the applicant's request for an exemption without notice to the intervenors or an opportunity for a hearing. Upon learning of the grant of the exemption, an intervenor petitioned the Commission for a stay of that exemption. The Commission referred the stay request to the Board having jurisdiction over the construction permit proceeding, and also determined that "under the circumstances of this case" the Board should conduct a hearing on the merits of the exemption request "even though the rule as written does not require adversary hearings in connection with applications for these exemptions." Id. at 198. Thus, the Commission's initiation of a discretionary hearing in Shearon Harris I must be viewed as a response to the Director's previous failure to notify interested parties of the grant of an exemption. In Kansas City Gas and Electric Company, Kansas Power and Light Company (Wolf Creek Generating Station, Unit No. 1), CLI-76-20, 4 NRC 476 (1976) the Commission referred the applicant's request for an exemption to the Licensing Board already considering the application for a construction permit. This exemption request was filed after the United States Court of Appeals for the District of Columbia Circuit had decided Natural Resources Defense Council v. NRC, 547 F.2d 663 (D.C. Cir. 1976) which found inadequate the Commission's original rule on the environmental effects of the uranium fuel cycle (Table S-3). In response to that decision, the Commission decided that licensing could resume only if an examination of the revised values in Table S-3 showed that the cost-benefit balance would not tip against a proposed plant. 41 Fed. Reg. 49898, 49899 (November 11, 1976). Thus, the Commission's referral of the exemption request to the Licensing Board was primarily for the purpose of obtaining an assessment of fuel cycle impacts. The Licensing Board, having considered the cost benefit issue, was obviously in the best position to consider if fuel cycle impacts would change the decision.

The Commission has not initiated a hearing in the three other exemption requests it has considered. In Louisiana Power and Light Company (Waterford Steam Electric Generating Station, Unit 3), CLI-73-25, 6 AEC 619, 622 n.23 (1973) (Waterford) the Commission stated that in the "circumstances of this case" it would be inappropriate to circumvent normal adjudicatory procedures by granting the exemption. Among the circumstances referred to by the Commission was the presence of seriously contested environmental issues in ongoing adjudicatory proceedings which were actually ongoing at that time. The Commission did not specify the "construction activities for which an exemption was sought. The Commission then denied the request without a hearing. In Gulf States Utilities Company (River Bend Station, Units 1 and 2), CLI-76-16, 4 NRC 449 (1976) (River Bend) the Commission granted an exemption request without a hearing before it or a Board. Here again, the Commission's decision was based on the particular facts of the proceeding. The exemption request was not contested, and the proposed action was considered not to have any adverse environmental impacts. Id. at 450. In Washington, Public Power Supply System (WPPSS Nuclear Project Nos. 3 and 5), CLI-77-11, 5 NRC 719 (1977) (WPPSS) the Commission stated that it would not assume the function of an existing Board and scrutinize factual issues itself absent a showing of extra-ordinary circumstances such as emergency situations in which time is of the essence and relief from the Licensing Board is impossible or highly unlikely. WPPSS at 723. Such circumstances has not been shown in that proceeding. Thus WPPSS addresses the question of when the Commission will preempt a sitting Board and conduct a hearing on an exemption request. The decision does not address the question of how the Commission will handle an exemption request when there is no Board currently immersed in a proceeding on the very same issues raised by that request.

This review of Commission precedent shows that there has not been a uniform Commission practice to require a hearing before a Board for factual issues associated with an exemption request. Rather, the Commission has tailored its procedures to the factual circumstances of each case.

2.1.4 Endangered Species Act

Refer to Section 3.1.3.

2.1.5 Federal Water Pollution Control Act

The participants made no comments related to this Act.

2.1.6 Other

The participants did not comment on other Acts.

2.2 Endanger Life or Property

The participants did not comment on endangering life or property.

2.3 Common Defense and Security

The participants did comment on common defense or security.

2.4 Public Interest

The public interest issue is discussed in Section 3.4 below.

2.4.1 Congressional Mandate

The Congressional mandate is discussed in Section 3.4.5 below.

2.4.2 Hardship

Applicants' Position

The applicants state that project design and hardware fabrication are now in an extremely advanced stage of development. As of April 1982, design work, and engineering research and development work were approximately 90% complete and more than \$600 million worth of hardware was delivered or on order with suppliers and fabricators. Because of the advanced stage of the design work, the project has lost its ability to work around delays in the licensing process. Accordingly, the licensing activities and, in particular, authorization to begin site preparation are now on the critical path. The project will be ready to proceed with site preparation as soon as approval of this request can be obtained from the Commission. If the Commission does not grant the request, the project must mark time while awaiting authorization to proceed with site preparation. This will force the project to maintain its design team throughout

the period of delay, and to spread that manpower over the remaining limited design and engineering R&D requirements, thus precluding the most productive use of project funding, and inevitably increasing project costs.

The applicants believe that unless timely relief is granted, the project and the Nation's taxpayers will continue to suffer additional project delays and cost increases. In the longer term, the delays will be reflected in the Nation's lack of preparedness for future nuclear power needs. Further, the national policies in favor of expeditious project completion will be frustrated. In short, the circumstances attending the present request clearly are exceptional and demand relief under Section 50.12 (Supporting Memorandum, pp. 19-20).

Intervenors' Position

The intervenors state that in the final analysis, the hardships catalogued by applicants lack substance. It is simply not possible to project with any certainty whatsoever short term delays in 1982 into impacts felt in a program decades from now. Projections with respect to the entire LMFBR program are little more than guess-work, and the Department of Energy itself admits that, even in the best of circumstances we will see LMFBR generating plants "no earlier than 2005 to 2010," LMFBR EIS at 40, and LMFBR deployment could be "several decades later."

Further, most recent information indicates that the need for fast reactors will be later rather than sooner. When the CRBR was originally proposed, certain assumptions were made with respect to the growth of electrical energy, the numbers of operating nuclear power plants, and the availability of uranium. Today, all those assessments have been revised. In such circumstances, it is plain that "delay" of the CRBR demonstration at this point by a matter of months cannot possibly do irreparable damage to the LMFBR program as a whole (Intervenors' Brief, pp. 27-30).

2.4.3 Demonstration of Licensability

Applicants' Position

The applicants state that their request to begin site preparation activities, if granted, will not obviate a single step in the NRC licensing procedures. Should the Commission grant this request, the CRBRP will still undergo and satisfy all elements of NRC's licensing procedure. Specifically, the CRBRP will:

- (a) Seek and obtain all findings including environmental findings, necessary for a Limited Work Authorization-1 (LWA-1) pursuant to 10 CFR 50.10(e)-(1)-(2) as a prerequisite condition to an LWA-2. See Section 10 CFR 50.10(e)(1)-(3).
- (b) Seek and obtain all findings necessary for a Limited Work Authorization-2 (LWA-2) pursuant to 10 CFR Section 50.10(e)(3) (i)-(ii).
- (c) Seek and obtain all necessary findings for a Construction Permit (CP). See 10 CFR Section 50.35.
- (d) Seek and obtain all necessary findings for an Operating License (OL). See 10 CFR Section 50.57.

In short, should the Commission grant this request, the CRBRP will still undergo all NRC staff reviews and hearings related to all applicable environmental and radiological health and safety matters under NEPA and the AEA (Supporting Memorandum, pp. 11-12).

Intervenors' Position

The intervenors point out that the applicants' argument that granting of the exemption would not be "precedent setting" because of the "unique nature" of the CRBR (Supporting Memorandum, pp. 22-23) can only be considered ironic. It

is precisely the project's unique nature which should make the exemption procedure inapplicable.

The Commission's mechanisms to allow site activities prior to the issuance of a construction permit (Section 50.12 and the Limited Work Authorization procedure) were developed in connection with the licensing of conventional light water reactors. The Commission's experience with these reactors allowed it to make site-related decisions, factoring in safety considerations as appropriate, prior to completion of a full safety review. But this rationale simply does not apply in the case of the CRBR and thus a complete review must be required before any work is allowed to begin.

Further, the notation that granting an exemption is permissible because the CRBR is unique runs wholly counter to the objective of demonstrating "licensability", which is at the heart of this project. Indeed, until this past year, this was Applicants' own understanding (Intervenors' Brief, pp. 30-31).

2.4.4 Benefits to LMFBR Program

CRBRP's importance to the LMFBR Program is discussed in Section 3.4.1 below.

2.4.5 International Considerations

International considerations are discussed in Section 3.4.2 below.

2.4.6 Costs

Costs are discussed in Section 3.4.4 below.

3. Positions on 10 CFR 50.12(b)

As noted in Section 1.2, 10 CFR 50.12(b) cites four factors that should be considered and balanced in deciding whether to grant an exemption. In this section, the position of the applicants and NRC staff are described for each of the four factors.

3.1 Potential Adverse Environment Impacts (50.12(b)(1))

The purpose of this Section is to summarize the applicants' position on the significance of the environmental impacts of the proposed site preparation activities. In its evaluations, the staff considered the 1977 FES, its 1982 Draft Supplement, and more recent information including the applicants' Site Preparation Activities Report and supplements to the applicants' Environmental Report, as well as other material submitted by participants in the proceeding.

3.1.1 Impacts on Land and Water Uses

Applicants' Position

According to the applicants' SPAR, the site preparation activities are essentially the same as those considered in the FES.

Section 4.1 of the FES details the site preparation activities which were requested under a Limited Work Authorization in 1975. Those activities included: clearing, grubbing, and excavation, construction of "site access roads and on-site temporary roads, railroads and spurs, construction parking areas, work and storage area, construction power and lights, concrete batch plant, sewage treatment plant and toilet facilities, construction office and warehouse, fire protection system, storm drainage system, and barge unloading facility." These are essentially the same activities which form the basis of this request.

In reviewing the site preparation activities, the NRC, in its FES, concluded that the environmental effects of site preparation activities would not be significant:

"In the event the applicant is permitted to proceed with site preparation under a Limited Work Authorization, it is the Staff's opinion that the environmental impacts of such work would not be significant." (FES, pp. 9-23)

The applicants believe that the SPAR confirms that the site environmental conditions and the environmental effects of the proposed site preparation activities do not differ significantly from those described in the FES. And, thus, the

environmental effects of the proposed activities will not be significant (Supporting Memorandum, pp. 24-25).

In addition, they state that the proposed site preparation activities will be performed in an area zoned for future industrial use and development. The land use plan developed by the Oak Ridge City Planning Department contemplates clearing of trees, shrubs and undergrowth and installation of access roads, railroad service and water and sewer lines. Similar activities are included in the scope of the proposed site preparation work. Thus, the proposed activities conform to the industrial uses for which the site area is already dedicated, and on that basis the applicants believe that the impacts of those activities will not be significant (SPAR, pp. 8-10).

They also note that the FES concluded that historic and archaeological resources, except for the Hensley cemetery and the Indian Mound, are at distances sufficient to have no involvement with the construction plan. Borrow pit activity would be restricted so as not to interfere with the two nearby sites (ER, p. 4.1-3) and, thus, these sites would be unaffected. And the applicants note that the State's archeologist determined that the applicants had given adequate consideration to archaeological resources and the State Historic Preservation Officer concurred that no structure of historic interest remains in the area (FES, p. 4-3).

The applicants, in their SPAR, indicate that none of the surveys conducted since NRC's issuance of the FES, in 1977, have uncovered any new historical or archaeological features which would alter the conclusions reached in the FES (SPAR, p. 2-11).

Intervenors' Position

In their December 15, 1981 memorandum to the Commission (Intervenors' Memorandum), the intervenors note the applicants' admission that circumstances have changed since the LWA application was filed, that the proposed scope for site work has increased, and that the environment itself has been altered to some extent. While the applicants characterize all these changes and differences as "minor" or "insignificant," the intervenors believe that the very narrowness of the

standard which the Commission must use in assessing the impact of site preparation activities compels a skeptical approach to such characterization.

They note that as the Commission emphasized in Kansas Gas and Electric Co., Kansas City Power and Light Co., in the slightly different context of a claim under 10 CFR 50.10(c) that certain preparatory activities did not "adversely affect the environment," the inquiry must be whether the activities at issue have an impact "so trivial" that "no conceivable harm" can be done to the interests sought to be protected by NEPA.

In this case, the intervenors believe that while the applicants assert that their activities onsite are "essentially the same as those included in the construction activities considered by the NRC in preparing Chapter 4, 'Environmental Impacts Due to Construction,' of the FES" (SPAR, p. 3-1), in fact there are a number of changes in the scope of site preparation activities. Most importantly, the acreage disturbed has grown from 195 acres to 260 acres--more than a 25 percent increase--and the excavation volume has almost doubled, increasing from 1,445,000 cubic yards to 2,790,000 cubic yards (SPAR, p. 3-1). A quarry of 45 acres, 40 to 140 feet deep, will be required. (SPAR, p. 3-1, 3-18) The intervenors question whether spending \$88 million on construction activities can really be characterized as insignificant. The Intervenors think it best to test this assessment properly in a hearing process (Intervenors' Memorandum, pp. 31-32)

Current Staff Evaluation

The present scope of proposed site preparation activities differs principally from that discussed in FES (Chapter 4) in the greater number of acres affected and the larger amount of excavation required. These changes have been considered by the staff in the following evaluations.

(1) Impacts on Land Use

The CRBRP site consists of approximately 1,364 acres, most of which are covered by various forest communities which have been managed mostly for forest production and used for ecological and biological research. However, the SPAR notes that the site is zoned for industrial use by the City of Oak Ridge.

The total area to be cleared and graded during the proposed site preparation activities is approximately 292 acres, including 4 acres offsite for the access railroad, as shown in Table 1. About 113.5 acres of the cleared area would be covered by permanent facilities. Also Table 1 includes 19 acres of additional security areas. Prior to clearing the land, the timber of commercial value would be harvested and removed. The staff concluded in the FES (p. 4-3) that "the loss, for the life of the plant, of 73 acres for production of biota would not constitute a significant impact since there are thousands of similarly forested acres in the vicinity." That conclusion is not affected by an increase to 113.5 acres in the amount of land lost to production. The rest of the land disturbed during site preparation would eventually be graded and revegetated (SPAR, p. 4-10); however, the plant area would reflect a major change from woodland to industrial use.

Table 1 Land areas affected by CRBRP site preparation activities (SPAR, Table 3-1)

<u>Category</u>	<u>Acres Disturbed</u>	
	<u>Temporary Facilities</u>	<u>Permanent Facilities</u>
Access Roads and Railroads (onsite)	30	30
Access Railroad (offsite)	4	4
Parking Area	19	2
Barge Unloading Area	4	4
Runoff Treatment Ponds	7	7
Quarry Including Stock Pile Area and Crusher Facility	60	-
Concrete Batch Plant	5	-
Riverwater Intake, Pumphouse, Discharge Line	6	.5
Spoil Areas	43	-
Storage and Other Work Areas	67	-
Permanent Plant Buildings and All Land Within Security Barrier	37	37
Meteorological Tower Areas	10	10
Additional Security Areas	-	19
TOTAL	292	113.5

The applicants have stated (SPAR, p. 4-17) that extreme care will be exercised to ensure that the Hensley family cemetery in the southern part of the site (SPAR, Fig. 3-1) remains intact, with the family retaining the right of access. A borrow pit operation, which was the only construction activity noted in the FES as being near the cemetery and the Indian Burial Mound, has been eliminated from the construction plans. The staff's opinion is that these historical and archaeological features are therefore unlikely to be disturbed by site preparation.

(2) Impacts on Water Use

Compaction of fill, quarry and crushing operations, and dust control are currently expected to require less than 60,000 gallons of Clinch River water per day (SPAR, p. 4-16). Since this is about 0.002% of the river's annual average flow, the staff believes it should have no effect on navigational and recreational uses of the river or on any downstream water uses (FES, p. 4-4).

Construction of the barge unloading facility and placement of fill at the river bank for the access road and railroad spur would not obstruct barge traffic or pleasure craft. These activities would increase siltation temporarily in the immediate stretch of the river but would be scheduled to minimize impact. Siltation from site preparation activities in other areas of the site would be negligible since the runoff water would be controlled in accordance with the Erosion and Sediment Control Plan required by the Draft NPDES Permit.

3.1.2 Impact on Terrestrial Ecology

Applicants' Position

The applicants believe the greater impacts on vegetation and wildlife due to enlargement of the affected area from the 195 acres previously considered does not alter the conclusion on p. 4-5 of the FES that on balance the environmental impact on the terrestrial ecology would be "minimal in view of the fact that the amount of land affected would be less than 1 percent of similar available

land on site and the Oak Ridge Reservation" SPAR, p. 4-1). All but the 113.5 acres covered by permanent facilities would be revegetated following construction, and wildlife populations that had been killed or displaced would largely revive.

Excavating and grading activities will cause disturbance of soils in the plant site area and some resultant short-term erosion. Judicious use of ditches and the impoundment of all storm runoff streams will control erosion and prevent siltation of the Clinch River. Any discharges from erosion control devices will be implemented in accordance with applicable Federal and State standards.

Access roads and stockpiled soils are the major contributors to erosion. Improvements to the road and ditching around stockpiled soils will minimize runoff. Topsoil, which will not be used for several years, will be contoured, seeded and mulched in addition to being ditched to control runoff (SPAR, pp. 4-12, 13).

Intervenors' Position

The intervenors characterize the proposed site preparation as radically altering approximately 260 acres of property. They also state that the SPAR contains "disturbing omissions of detail" and other "serious short comings" (Intervenors' Answers, pp. 44, 46, 47).

Current Staff Evaluation

Most of the effects on terrestrial ecology from construction and operation of CRBRP would result from the site preparation activities and subsequent revegetation of temporarily disturbed areas. Approximately 292 acres, about 20 percent of the CRBRP site, would be cleared according to the applicants' current plans. This is an increase of about 40% over the 195 acres considered in the FES, but it does not change the staff's previous opinion (FES, p. 4-9) that the impact on terrestrial biota would be minimal in view of the fact that the amount of land affected would be less than 1% of similar available land on the Oak Ridge Reservation.

After the timber is harvested, most of the plant life on the 292 acres would be destroyed during clearing operations. However, the staff notes that the site preparation activities have been planned so as to avoid rare plant species and two "natural areas" which are of ecological interest because of their stages of succession and relatively undisturbed condition (FES Section 2.7.1, SPAR Section 2.6.1.1).

The U.S. Fish and Wildlife Service has notified the NRC that one endangered faunal species, the gray bat (*Myotis grisescens*), may occur on site; a cave search and mist-netting survey found no individuals on site (SPAR, p. 2-23). The bald eagle (*Haliaeetus leucocephalus*) is on the Federal list of endangered species for this region but no nesting eagles have been found on the site.

The State of Tennessee's list of endangered or threatened species shows four bird species (sharp-shinned hawk, Cooper's hawk, marsh hawk and American osprey) which have been observed on or near the site. None of these species use the area for nesting purposes; therefore, it is the staff's opinion that these species will not be impacted by construction activities at the CRBRP site.

The wildlife present would be affected in approximate proportion to changes in effective habitat. In the forested areas which are cleared, animals would either be killed or displaced to surrounding woodland where they would compete for space and food with populations already present. Following restoration of the temporarily cleared areas, the net effects of site preparation and plant construction would be a small increase in open, brushy habitat preferred by wildlife such as quail and rabbits and decreases in populations of woodland species. None of the shifts in animal populations would ultimately be greater than 20% of the corresponding populations on the site.

3.1.3 Aquatic Impacts

Applicants' Position

In the SPAR, the applicants reviewed the effects of site preparation on aquatic ecology and concluded those effects will be insignificant. Constructing the

barge unloading facility is the only activity considered in the SPAR that potentially could impact biota in the river. It is now expected to involve substantially less dredging (11,000 yd³) than anticipated in the FES (19,000 yd³). Benthic communities in the dredged area of the barge unloading area will be eliminated and those nearby will be disturbed; however, they will recover rapidly. Fish species are expected to avoid high turbidity areas and will not be impacted by construction activities (SPAR, pp. 3-13, 3-14).

The NRC staff has raised a question as to whether the striped bass may be adversely affected by the CRBRP thermal plume in extended low or no-flow conditions in the late summer months. Under typical summer conditions the thermal plume is so small that adverse effects on striped bass would not be expected. Under hypothetical worst case conditions the avoidance of surface waters in the immediate area of the discharge would not result in any significant adverse impacts.

The Project has initiated additional studies to address the NRC staff question and has committed to such remedial measures as may be appropriate (SPAR, p. 2-32).

Intervenors' Position

The intervenors point out that the Draft FES Supplement indicates that, according to the U.S. Fish and Wildlife Service, several species of endangered fresh water mussels may be present in the Clinch River near the proposed CRBR site, and one such specimen has been discovered at Clinch River mile 19.1. Draft FES Supplement at 5-6 -- 5-7. The Commission Staff has not yet developed a final staff position on the project's potential impacts on the endangered species. *Id.* In addition, there still exists uncertainty concerning the use of the Clinch River for spawning by the sauger, an important game fish, and a report on spawning habitats will not be issued until December, 1982. Draft FES Supplement at 2-17; SPAR II at 2-32. The Draft Supplement discussion of these and other environmental impacts must be circulated for public comment before the Commission's position is final. The environmental review, in sum, cannot be considered closed (Intervenors' Brief, p. 32).

Current Staff Evaluation

As indicated in Section 4.4.2 of the FES, the staff's opinion is that the precautions to be used in plant construction would assure minimum effects upon aquatic resources. With respect to site preparation specifically, the applicant plans to construct drainage ditches around all stockpile areas and at the base of all excavation slopes, then collect the drainage water in settling basins prior to discharge to the river in accordance with applicable Federal and State Standards (SPAR, p. 3-6).

The draft NPDES Permit, Part III.J., requires that site preparation activities not be implemented until after EPA has approved an Erosion and Sediment Control Plan for construction of the project. A draft plan has been submitted to EPA and EPA and DOE are working on final details of the plan. The objective of the plan is to control erosion from areas exposed during construction and to prevent eroded soil from reaching the Clinch River in potentially damaging amounts. Discharge of silt will be controlled by intercepting runoff in treatment ponds and discharging from the ponds to the river through a filtration system.

Aquatic life would be effected by construction of the barge unloading facility which will be located on the west bank of the Clinch River at the NW corner of the site. About 600 linear ft of shoreline would be disturbed during construction and about 11,000 yds³ of sandy silt material would be moved from the river bank and the bottom of the dredged area would be covered with 700 yds³ of sand to cushion the grounded barges during unloading. Only 1742 ft² of river bottom below the 741-ft normal pool elevation of Watts Bar Lake (Clinch River) would be disturbed for construction of the barge unloading facility. Based on the area to be affected and the fact that a significant portion of this area is dry during parts of the year, no significant long-term impact on biota is expected.

Although not covered in the SPAR, improvement of the access road and construction of the railroad spur would involve some dredging and placement of granular fill and riprap (ER-OL, p. 4.1-15). These activities would affect about 34,000 ft²

of existing river bottom below the 741-ft elevation (ER, p. 4.1-15). Disposition of the fill material would initially destroy the underlying benthic community; however, this impact would be temporary since the benthic organisms would rapidly colonize the new rock substrate. The staff recommends that fill material not be placed in the river during the late summer when striped bass utilize this part of the Clinch River as a thermal refuge or during late spring when sauger are spawning.

The U.S. Fish and Wildlife Service has notified the NRC that 11 species of freshwater mussels from the family Unionidae and one species of fish from the family Cyprinidae, all federally listed as threatened or endangered, may be present in the Clinch River. The species of fish, Hybopsis cahni, the slender chub, is not known near the site despite intensive sampling conducted or contracted by TVA, Project Management Corporation, the Tennessee Wildlife Resources Agency, Exxon Nuclear Corporation and the Oak Ridge National Laboratory.

In April 1982 a single live specimen of the federally recognized endangered Lampsilis orbiculata orbiculata, the pink mucket pearly mussel, was taken incidental to a sauger spawning study approximately one mile upstream of the site (RM 19.1). In May and June of 1982, the applicant conducted a comprehensive mussel survey of the Clinch River between RM 14.0 and 21.0. Transects across the river were sampled every tenth of a mile. Area sampling was conducted in the vicinity of the proposed intake, discharge and barge unloading facility. A total of 10 species, 189 specimens were taken. Neither L. o. orbiculata or any of the remaining 10 species of federally protected freshwater mussels identified by the U.S. Fish and Wildlife Service were collected. The occurrence of a single specimen of L. o. orbiculata in a reach of river is not unusual and is not indicative of the presence of a nearby bed of mussels containing additional specimens of this species.

The staff has conducted a preliminary analysis on the potential impact of CRBR site preparation activities on L. o. orbiculata and has tentatively concluded that no significant impact would occur. The area survey in the vicinity of the barge unloading facility did not detect the presence of this species and the Erosion and Sediment Control Plan is adequate to reasonably assure the

protection of any individuals of this species found adjacent to or downstream of the site.

The State of Tennessee additionally has listed the blue sucker (Cycloleptus elongatus) as threatened. One specimen was taken near the mouth of the Clinch River in 1975 and one specimen was collected in 1977 from the Tennessee River near Loudon. One specimen was taken in 1968 during the preimpoundment of Melton Hill Reservoir. However, none have been reported taken from the stretch of river in the vicinity of the CRBR site. The staff, therefore, believes that no impacts on the blue sucker are likely to result from site preparation.

3.1.4 Socioeconomic Impacts

Applicants' Position

In their SPAR, the applicants stated that the surrounding area's population will increase by 770 due to site preparation personnel and families. This increase will cause minimal dislocation since it will constitute less than 1 percent of the population in all but one of the adjacent communities (SPAR, pp. 4-26 to 4-32).

Current Staff Evaluation

The social and economic effects of the peak workforce of 1100 currently expected during site preparation (SPAR, p. 4-27) would be substantially less than those of the 2800-person peak construction force assessed in the FES (Section 4.5).

Based on the staff's review of TVA's extensive construction experience, the applicants' assumptions of 27% worker in-mover rate, 70% married workers, and a total of 770 men, women and children relocating to residences within the four counties around the site are reasonable for this assessment. This is a small population influx compared to the total population in the four counties of more than 200,000. Knox County is expected to receive 45% of the in-moving workers and their families, Roane County 25%, Anderson County 20%, and Loudon County 10% (SPAR, p. 4-28).

Schools in western Knox County could experience slight increases in existing overutilized conditions from the addition of approximately 65 students. The staff believes that additional teachers may be required, but no school would be faced with the need for capital expenditures. All other school systems in the area appear to have sufficient excess capacities to handle the estimated increases in students.

Housing, the water supply and treatment capacities, health care, public safety and recreational services are expected to be adequate. However, water distribution and wastewater collection systems may require limited expansion or improvement in rural utility districts.

The existing level of service on several road segments near the site would deteriorate somewhat during non-rush-hour periods due to increased traffic related to site preparation. The most noticeable impact would be an extension of peak commuting times in the vicinity. In addition to this inconvenience, there could be some acceleration of road deterioration and a potential for increased accident frequency.

The communities in which the workers are located can expect to benefit from payroll expenditures. In general, the staff believes the revenue generated by the in-moving population through sales taxes, taxes on property and beverages, etc., would be sufficient to cover the local costs of increased services to accommodate these workers and their families (FES, pp. 5-14, 15).

3.1.5 Dust and Noise Impacts

Applicants' Position

In the SPAR, the applicants state that dust would be controlled by water sprinkling on construction areas and on roads, followed by revegetation and road paving (SPAR, pp. 4, 16, 18).

Applicants noted that the noisiest equipment types to be operated during the proposed site preparation and excavation activities include the rock drill which would produce maximum noise levels of approximately 58 dBA at one mile. This

noise level falls in the category of "clearly acceptable" noise (less than 62 dBA) defined by EPA's Noise Pollution Level criteria. Explosion noise from blasting will be minimized by the use of small multiple charges. Noise levels resulting from operation of the rock crushing facility will typically range from 80 dBA at 100 feet to 70 dBA at 300 feet and will fall within limiting noise level regulations at the site boundary. The noise created by preparation activities will be within acceptable limits at nearby inhabited areas (SPAR, pp. 4-23, 24).

Current Staff Evaluation

The applicants' procedures should minimize dust and noise to the extent practical and the staff believes their offsite effects would be acceptable, except possibly the noise impact at the nearest residence. Table 4-2 of the SPAR shows that noise from the rock drill could be 64 dBA at 0.5 mile. The SPAR also indicates that the nearest residence is located over 0.3 mile from the river-water pump-house. Consequently, the noise at that residence might be greater than the "clearly acceptable" level when the rock drills are in operation, and that some activity interference could occur during evening and nighttime hours.

3.1.6 Impacts from Wastes and Chemicals

Applicants' Position

In Sections 4.2 and 4.3 of the SPAR, the applicants describe the methods that will be used for disposal of forest slash, scrap combustible materials, chemicals, used oil, sweeping compounds, sanitary waste and conventional garbage. The applicants conclude that the identified precautions and proposed treatment of sanitary and other wastes will adequately protect the environmental quality of the site and its environs and ensure compliance with applicable regulations and substantive standards (SPAR, pp. 4-16, 17).

Current Staff Evaluation

The methods described by the applicants for disposal of slash, chemicals, sanitary wastes, etc., are consistent with those previously assessed as having insignificant effects on the aquatic (and terrestrial) ecosystem (FES, pp. 4-5, 6).

3.2. Redress of Adverse Environmental Impacts (50.12(b)(2))

3.2.1 Feasibility of Redress

Applicants' Position

The applicants assert, in the SPAR and their Supporting Memorandum, that the environmental impacts of the proposed site preparation activities are slight and are redressable either to the site's original condition or to a state appropriate for alternative use. They point out that the significance of the environmental impacts and the degree of redress necessary must be viewed in the context of the intended future alternate uses for the site. The site, which is within an area of government-owned land managed by TVA, is zoned industrial. All alternative uses for the area proposed by the Oak Ridge City Planning Department in its land use plan involve clearing, road construction, railroad service, and water and sewer lines. The applicants conclude that it would be desirable to leave intact the access road and railroad, the barge unloading facility, the storm drainage and potable water distribution systems and other utility services. However, if it becomes necessary to dismantle and re-landscape the area affected by such roads and facilities, the applicants state that this can be accomplished by removal of railroad ties, etc., followed by application of fill material and topsoil, regrading and reseeding.

The scope of redress activities proposed by the applicants include removal of buildings and other temporary facilities and the crushing facility; backfill of the excavations for major plant buildings and the quarry; and regrading, reseeding and landscaping of the general site and quarry areas. Grading to facilitate drainage would leave the site in a condition most compatible with its intended future use for industrial purposes (SPAR, Chap. 5; Supporting Memorandum, pp. 26, 27).

Intervenors' Position

The intervenors characterize the proposed site preparation activities as "radically altering approximately 260 acres of property" and appear to question whether redress "can actually be accomplished effectively." "Moreover," the

interventors stated, "because the staff has at no time made any determinations with respect to redressibility, the Commission has no environmental record to go on to judge the reliability of applicants' assertions" (Intervenors' Memorandum, pp. 44, 48).

Current Staff Evaluation

The staff's opinion is that affected areas of the site could be restored essentially to their present conditions of vegetation and animal life, but that perfect restoration of the topography could not be achieved. The site area consists of steep limestone ridges, hills and knobs which would be cleared, graded and then excavated. Once substantial grading activities have been completed, it would not be possible in any reasonable fashion to restore all of the original topographic features. However, mitigative actions can be undertaken, as described by the applicants, which would restore the site to essentially the same environment or to a lesser vegetative condition compatible with other industrial uses. For either restoration option, the cleared areas would be graded, seeded and planted. During the process of restoration and before a dense forest cover could recur, the restored land would provide a variety of habitats which could increase the overall density of animal species on the site. Until an adequate ground cover is established, the restoration activities must include control of water runoff; impounding ponds or other acceptable techniques will have to be in place to allow discharges to the river to be made in accordance with Federal and State standards. The critical ecological elements indicated in SPAR Table 4.4, item 17, must also be protected during restoration.

The staff recognizes that leaving intact the access road and railroad spur and various utility services would be consistent with any future industrial development of the property for which it is zoned. Whether the barge unloading facility would also prove useful depends on the nature of the future industrial development. The presence of this concrete slab recessed into the river bank would limit the type of vegetation planted at that location, while removal of the slab would cause temporary disruption of aquatic life in the immediate vicinity. Although the concrete slab would be large enough to be noticeable from the river and the opposite shore, the staff's opinion is that the slab should not be particularly obtrusive due to its low profile.

3.2.2 Costs of Redress (50.12(b)(2))

Applicants' Position

The SPAR estimates a cost of \$7.017 million (reference year not indicated) for redress of the site in the event the project is not completed. This estimate assumed a scope of redress activities consisting of backfill of the excavations for major plant buildings and the quarry; regrading, reseeding and landscaping of the general site and quarry areas; and removal of the crushing facility and temporary plant facilities. In this estimate, the construction utilities, access road, railroad and barge facilities were assumed to be left intact. Restoration of the general site area to the original contours with two ridges straddling the area where the main excavation would be located was estimated to cost an additional \$2.6 million.

Intervenors' Position

In their January 28, 1982 response to the applicants' arguments (Intervenors' Response), the intervenors state that the applicants' response severely underestimates the feasibility and cost of site redress, since it interprets the term "redress" in an extremely limited fashion. They believe that the applicants base their estimated \$6.8 million redress cost on the premise that most of the construction and access facilities would not have to be removed during redress. They cite the applicants' claim that since the site is "dedicated" to industrial use, they could leave intact the construction utilities, temporary buildings, access road, impounding ponds, railroad spur and barge facilities, and would not be required to restore the site to its approximate original contours. The intervenors believe that such an approach misinterprets the requirements of site redressibility for several reasons.

First, Section 50.12(b)(2) contemplates a commitment by the Applicants to restore the site to a condition as nearly approaching its original condition as possible, not a transformation to a completely new use. They maintain that redress means removal of all structures and facilities, and restoration of a reasonable area. These actions would substantially increase the cost of redress and raise serious questions regarding feasibility.

Second, even if it were appropriate for Applicants to rely upon a proposed future use of the site, they believe that the Applicants have not demonstrated that the site would actually be used for industrial purposes and that failure to make such a demonstration undercuts their entire presentation (Intervenors' Response, p. 10-13).

Current Staff Evaluation

Using the 1982 Dodge publications for prices and costs, the NRC staff has independently estimated the redress costs at \$7.0 million confirming the applicants estimate of \$7.017 million for the same scope of activities. The staff, therefore, concludes that the applicants' cost estimates are accurate. For discussion of extent and feasibility of redress, the reader is referred to Section 3.2.1 of this report.

3.3 Foreclosure of Adoption of Alternatives (50.12(b)(3))

Applicants' Position

In their Supporting Memorandum, the applicants state that because no safety-related or permanent construction activities are proposed, an appropriate range of design alternatives will not be foreclosed. Likewise, a reasonable range of alternative site uses can be completely preserved by substantially restoring the site to its original condition.

The applicants state that the alternatives of abandonment of the CRBRP would not be affected by the proposed activities. The expenditures for the proposed site preparation activities are less than 8% of the project cost accrued to date and less than 3% of the estimated total project cost. The relatively small investment for site preparation activities will not cause an irretrievable tilt of the cost-benefit balance toward project completion, and the alternative of complete abandonment of the project will be kept economically viable (Supporting Memorandum, pp. 27-28).

Intervenors' Position

The intervenors take issue with the applicants' assertion (in SPAR) that "proposed site preparation activities do not entail any foreclosure of land use alternatives or irreversible commitment of natural resources." They note that this assertion is presumably premised, at least in part, upon the assumption that redressability will be approximately \$8 million -- an assumption which they assert deserves to be tested.

The applicants' response to the question of cost/benefit tilt is contested by the intervenors. They point out that, while the applicants characterize the investment in site preparation as "relatively small," it is difficult to dismiss the expenditure of \$88 million as having no impact on project momentum. The intervenors state that they are unaware of any case authorizing an expenditure of this magnitude for construction activities, prior to completion of an environmental review, as consistent with the mandates of NEPA (Intervenors' Memorandum, pp. 33-34).

Current Staff Evaluation

The assumed redress cost of \$7 million should be added to the applicants' \$81.5 million estimated cost of the site preparation activities and the estimated salvage value of \$13.4 million should be subtracted from it to arrive at a cost of abandonment of the CRBRP site. The resulting amount of \$75.1 million is less than 7% of the \$1.1 billion project cost to date.

The sum of \$75.1 million is a substantial amount of money when considered by itself; however, the staff agrees with the applicant that it is not so large a percentage of the project cost that it would create an irretrievable tilt of the cost-benefit balance away from the alternative of complete abandonment of the project or the alternative of utilizing another site.

No permanent plant structures are to be constructed as part of the site preparation activities. The excavations for those structures, once they have been made, can be filled if necessary and the site can be restored essentially to

its original condition. Therefore, in the staff's opinion, no design alternatives would be foreclosed by allowing the proposed activities to take place. However, the staff notes, as described in Section 1.1 of this report, that one safety-related activity is proposed by the applicants, i.e., construction of the emergency plant service water piping between the Electrical Equipment building and the emergency cooling tower. The applicants' inclusion of this safety-related activity in its proposed activities does not alter the staff's conclusion that no design alternatives would be foreclosed.

3.4 Effects on the Public Interest (50.12(b)(4))

3.4.1 Benefits to LMFBR Program

Applicants' Position

LMFBR development includes the design, construction, and operation of developmental plants in increasingly larger sizes demonstrating LMFBR technology as needed to support the progression of key technical decisions. The applicants believe that the CRBRP design, construction, and operating information is vital since it forms the basis for the key technical decisions at the appropriate extrapolation scale, guides the R&D Program, and offers potential LMFBR Program cost reductions. At the present time CRBRP serves as the major focal point for the overall program.

As the focal point of the LMFBR Program, the applicants state that demonstrable progress in the CRBRP project is essential to the vitality of the overall program. The granting of this request will result in substantial benefits to the overall LMFBR Program. The pace of CRBRP has a marked effect on the overall program momentum. Approval of this request and the subsequent prompt start of CRBRP site preparation would boost the momentum of the overall program, and enhance the probability of successful LMFBR development.

The applicants believe that the CRBRP has a unique importance to the LMFBR Program. The CRBRP will demonstrate reliable working relationships among diverse

power generation systems and components for the first time in an intermediate-scale U.S. LMFBR power plant. As such, it will be the first full-scale, integrated test of many of the individual elements of the LMFBR program which have been developed over the past 30 years. CRBRP operation will provide unique experience to further guide individual LMFBR program elements.

The applicants believe that termination of the overall LMFBR Program could foreclose the opportunity to exploit the vast source of energy available within the United States in the form of the depleted uranium tailings--a potential energy source that is already mined, processed, above ground and readily available for use when breeder reactors are deployed. Proceeding expeditiously with the CRBRP would greatly reduce the risk that negative events as described above would occur (SPAR, P. 7-3, 4).

Research Benefits

The applicants state that the R&D Program is responsible for performing the tasks that are necessary to develop the CRBRP components and systems, extrapolate components and systems from the CRBRP to the Large Developmental Plant (LDP) project and future LMFBR plants, and to resolve problems that may be encountered during CRBRP and LDP construction and operation. The applicants believe that approval of this request will primarily benefit the R&D program by enabling earlier identification of plant system and component problems that need resolution.

The applicants state that earlier identification of any problems that require R&D solutions will have additional indirect benefits. First, it will allow the total retention time required for the R&D staff to be reduced, thus helping reduce overall LMFBR Program development costs. Second, the ultimate LMFBR design acceptance will be determined by the operation of the CRBRP and each of the individual components and systems. Finally, it will lower the technical risk in conducting the R&D Program since R&D work will be focused on specific areas for potential improvements that are directly identified from CRBRP construction and operation (SPAR, p. 7-5, 7-8).

Large Developmental Plant Benefits

The applicants state that the next major step beyond the CRBRP in establishing the readiness of LMFBR technology in the U.S. Program is the development of a large scale LMFBR plant, presently designated as the Large Developmental Plant. Design, construction, and operation of the LDP will give industry and utilities the necessary technical information required for future private sector decisions on when to proceed with LMFBR commercial introduction. Conceptual design of the LDP began in October 1978. Establishment of the basic plant parameters was completed in late 1979, and preliminary design of key plant systems has been proceeding since that time. Funding has been provided for LDP during the last four fiscal years at the rate of \$15 million per year.

Because of the previous five years of delays of the CRBRP, data from construction, startup, and operation of the CRBRP is already significantly delayed and is required at the earliest opportunity for use in the LDP. The applicants believe that approval of this request and the prompt start of CRBRP site preparation will maintain the essential utility, industry, and Government expertise in breeder technology which is required for successful completion of the LDP. In addition, a gain of 6 to 12 months in the CRBRP schedule will directly translate into more breeder experience available to the LDP at an earlier date. For example, lessons learned from CRBRP construction and startup procedures will be more readily factored into the LDP design, at a time when such input would be most beneficial and thus would reduce LDP costs and R&D requirements.

The applicants state that another significant benefit to the LDP from prompt start of CRBRP site preparation is the positive effect that it would have on the potential private sector LDP sponsors. It will demonstrate the Government's commitment to the LMFBR program to industry, utilities, and potential foreign participants, and will encourage them to make a commitment to the LDP and further the development of the LMFBR option (SPAR, pp. 7-8, 7-9).

Fuel Cycle Program Benefits

Demonstration of the technology for reprocessing and recycling of LMFBR fuels will begin a few years after the initial criticality of CRBRP. The applicants

believe that an early demonstration of this technology is essential to commercialization of the LMFBR.

The demonstration of LMFBR fuel cycle closure is an essential part of the overall LMFBR program. LMFBR fuel contains a high concentration of valuable fissile material which makes storage a more severe economic penalty. Thus, the long range goal is to reduce to a minimum the time to complete the cycle of fuel removal from the reactor, fuel reprocessing, refabrication and reinsertion back into the reactor.

The applicants state that earlier completion of the CRBRP, followed by a reprocessing demonstration, would permit an earlier overall confirmation of our ability to close the LMFBR fuel cycle. This approach also provides, additional LMFBR fuel with which to conduct prototypic fuel cycle demonstrations that will optimize key performance factors including fuel assembly design, reprocessing and refabrication and irradiation of core and blanket fuel assemblies (SPAR, p. 7-9, 10).

Intervenors' Position

The intervenors state that it is far from clear how one can leap, as applicants do, to a conclusion that six months of delay will hamper "current" efforts to obtain international participation in the LMFBR program, see SPAR II at 7-4, when the SPAR II itself notes that international agreements may be dependent upon obtaining data from construction "and operation" of the CRBR, id. (emphasis added) -- data which are more than a decade away.

It is important to stress that the CRBR is not the entire LMFBR program. The Department of Energy has other active breeder research and development projects. And, many supporters of breeder research have suggested that the entire program might be more efficient and better directed if the CRBR were not part of it at all at this time. It is simply fanciful to suggest that the fate of the entire LMFBR program depends upon whether site work is conducted at Clinch River in the fall of 1982.

Allegedly lost informational benefits, see SPAR II at 7-5 -- 7-8, are equally speculative. While it is true that earlier operation may result in earlier

resolution of certain problems, given the overall time frame for the LMFBR program, which is on the order of decades, it is inconceivable that a few months in the start-up of site preparation activities will make a significant difference.

When applicants seek to translate the CRBR experience into benefits for the Large Development Plant, see SPAR II at 7-8 -- 7-9, there are even greater uncertainties. Although there has been funding for the LDP in prior years, LDP funding was deleted from the Department of Energy's FY 1983 budget request and money will only be available if a formal cooperative agreement to proceed with LDP is reached by federal, private and foreign entities. And numerous factors, i.e., availability of private financing, corporate priorities and the like, will affect decisions to participate.

The translation of CRBR experience to an LDP which may never be built is a matter of some subtlety. Presumably if the Department of Energy is successful in getting partners for the LDP project, design work will be well along, if not complete, long before the CRBR is in operation. Thus, the CRBR experience would have little relevance to development of the basic parameters of the LDP system.

Fuel cycle program benefits are even farther down the line. Applicants argue that "earlier completion of the CRBRP, followed by a reprocessing demonstration, would permit an earlier overall confirmation of our ability to close the LMFBR fuel cycle." SPAR II at 7-10. But by applicants' own projections the reprocessing demonstration for the CRBR will not take place before 1996, some 14 years away. See LMFBR EIS at 76, 79. It strains credulity to think that delays measured in months in 1982 will have an important bearing on a demonstration scheduled to take place near the end of the century (Intervenors' Brief, pp. 20-24).

Current Staff Evaluation

The staff notes that the Department of Energy has the programmatic responsibility within the Government for the LMFBR program. The staff believes that the impact of delay for CRBR is represented by the deferral of the research

and informational benefits stemming from the project. Although these benefits can not be easily quantified, they are nevertheless an essential element of effect of delay on the public interest.

3.4.2 International Considerations

Applicants' Position

The applicants believe that the completion of CRBRP and continuation of the LMFBR Program are essential to the maintenance of active U.S. influence and leadership in the international nuclear field, particularly in relation with other nuclear nations that also ascribe considerable importance to breeder development.

The applicants state that nuclear power has obtained a central role in the energy programs of several nations, and in the next century the LMFBR will be a key element of several large electric power programs in western Europe and Japan due to the secure fuel supply that the LMFBR offers. Although the U.S. previously held a position of leadership in LMFBR development, other nations including France, the United Kingdom, and the USSR have surpassed the U.S. in intermediate-scale plant experience. Currently, the Japanese and Germans are both constructing CRBRP size developmental plants. The French plan to bring their first large-scale plant on line in 1983.

They cite President Reagan's reiteration of the crucial importance of supporting effective international measures to reduce the threat of proliferation to help achieve a credible nonproliferation policy. And they refer to his statement that we must reestablish our credibility in developing international nuclear policy and safeguards, as well as our credibility as a supplier of nuclear equipment, technology, and fuels.

The applicants also cite the International Nuclear Fuel Cycle Evaluation (INFCE) reaffirmation of the LMFBR as the preferred and acceptable advanced nuclear fuel cycle. Proceeding now with CRBRP is required to provide the U.S. with a needed technological basis to continue its influence over worldwide nonproliferation

aspects of LMFBR applications. A strong LMFBR Program, including prompt undertaking of CRBRP site preparation activities, is necessary to support this policy.

The applicants believe that the successful conduct of the U.S. LMFBR Program is necessary for us to reestablish our leadership role in world nuclear energy matters; the early construction and operation of CRBRP is an essential part of that program. CRBRP was deferred more than five years ago. It has been more than half a year since the President declared his intention of expeditiously completing CRBRP. An additional one-half to one year delay in initiating CRBRP site preparation will be viewed overseas as further indecision and as a continuation of the deferral policy of 1977. As a result, our role in the formulation of international nuclear policy will be further diminished, as will our acceptance as an active member in world nuclear commerce.

In summary, the applicants state that aggressively completing CRBRP will re-establish our commitment to the breeder, advance technology closer to a commercial status, and represent our stake and right to be an active participant in forming world nonproliferation policy and safeguards. As an additional benefit, it will enhance U.S. prestige overseas and re-establish our interest in world nuclear markets (SPAR, pp. 7-19, 11, 12).

Intervenors' Position

The intervenors state that when applicants come to describe "international program considerations," see SPAR II at 7-10 -- 7-12, their case trails off into incoherence. Applicants, still pressing their argument on the unfounded assumption that failure to conduct site preparations will result in the termination of the entire LMFBR program, refer vaguely to the loss of U.S. ability to maintain "active U.S. influence and leadership in the international nuclear field," SPAR II at 7-10, to "influence global events" id. at 7-11, and to reestablish our "credibility as a supplier of nuclear equipment, technology and fuels." Id. This exaggerated rhetoric attributes far too much to such a simple matter as site preparation activities. The United States is and will remain the premier nuclear power nation, regardless of what happens at Clinch River in August, 1982. The U.S. has in place an enormous fission research program not to mention the world's largest base breeder R&D program. Its influence is likely to remain unparalleled.

Finally, the assertion that failure to proceed with site preparation activities will adversely affect the "advancement of the Administration's nonproliferation objectives is ludicrous. When one examines the LMFBR EIS, the best that the Department of Energy can do is argue that development of breeder reactors will not aggravate existing non-proliferation problems; they certainly have nothing to do with helping to solve those problems. See LMFBR EIS at 167-169. In non-proliferation terms, development of breeder reactors is a risk that must be dealt with. As Frank Von Hippel of Princeton University noted in his letter of January 13, 1982 to the Commission "the breeder program, which relies on a plutonium fuel cycle, may promote the spread of nuclear weapons, immensely complicating our non-proliferation problems." And, in the particular context of the CRBRP, authorizing acceleration of site preparation activities gives precisely the wrong signal to the world: that even though safeguards and physical security problems have yet to be resolved, as they must eventually be in a rigorous licensing process, breeder development will be acceptable from a nonproliferation standpoint (Intervenor's Brief, pp. 24-27).

UCS Position

UCS states that the cloaking of this profoundly destabilizing project in the rhetoric of benign nonproliferation aims is a last-grasp argument that the Commission should summarily reject. The applicants appear to be arguing that this country's nonproliferation objectives will be more easily attained if we encourage, by action and example, the production and use of separated plutonium. This proposition virtually refutes itself; in our view, leadership in nonproliferation matters does not mean seeing who can move the fastest toward a plutonium economy. DOE's position here goes well beyond the "faintness of heart mixed up with a little greed" that (In Commissioner Gilinsky's phrase) characterizes the administration's overall plutonium policy. It reminds us more of the "black is white, war is peace" newspeak that George Orwell described in 1984, in which the ordinary meaning of words and concepts is turned upside down (UCS letter, p. 3).

Current Staff Evaluation

The staff has not attempted an independent appraisal of the international ramifications of a Commission decision on the CRBRP exemption request.

3.4.3 Power Needs and the Availability of Alternative Sources

This criterion is not applicable in this case.

3.4.4 Costs of Delay

Applicants' Position

The applicants' estimates of the monetary cost of delay are provided from three different perspectives. These are the appropriation (or fiscal) perspective, the economic perspective, and the financial perspective. All dollar estimates that follow are based on an assumed one year delay.

Appropriations Perspective -- The appropriations perspective represents a view similar to that taken by Congress and the Administration in which annual funding and project costs are estimated in year of expenditure dollars. From the appropriations perspective, a one year delay will cause the project costs to increase because of inflation on labor and materials, as well as the added costs of management during the delay. Offsetting these costs will be revenues that are higher due to inflation during the delay. These have been estimated to be: \$136 million in cost inflation; \$42 million in management costs; and \$49 million in higher revenues (a net credit). This results in a net total of \$129 million in increased appropriations over the life of the project.

Economic Perspective -- From the economic or resource perspective, only future changes in the requirements for labor resources, materials, plant and equipment as well as foregone revenues and R&D information are appropriate elements of the cost of delay. In this context a delay in the project will involve at least three elements of quantifiable economic cost. First, during the period of delay, the project must maintain the necessary managerial personnel to keep the project in a current status at a cost in present worth terms of approximately \$38 million per year. Second, the project revenue stream will be deferred for a one year period. The cost to the project has been estimated between \$6-20 million per year and the applicants' adopt the \$20 million cost as more closely approximating the real economic cost to the project. Finally, the project will realize an economic savings: due to the deferral of anticipated expenditures in an amount

of \$30 million per year. In summary, from an economic perspective, a delay in the project will result in a total quantifiable economic cost of \$28 million.

Financial Perspective -- The cost of delay from the financial perspective represents the impact on the project itself. From this perspective, the effect of a one year delay in completion will result in the capitalization of an additional one year of interest measured at the time of plant completion. In addition, the financial costs of delay include the additional management costs, the loss due to the deferral of revenue, and any savings due to delaying anticipated expenditures. From the financial perspective, the present worth of a one year delay in the CRBRP Project would result in a cost increase of \$218 million (SPAR, pp. 7-12, 13, 14).

Intervenors' Position

The intervenors argue that the applicant's analysis is "simplistic" because it fails to take into account the "time value of money." Their basic point is that while delay increases cost due to inflation, there are savings which are associated with delay because the government need not raise funds to pay for construction. Intervenors point out that if the interest rate on borrowed funds exceeds the rate of construction cost escalation, there are benefits to deferring construction. Aside from consideration of the time value of money, intervenors concede that the cost to employ various managers, administrators and engineers in the event that the project is delayed is non-zero but argue that the magnitude of the cost is speculative since this cost might be offset by improvements in design, engineering, and construction afforded by the delay (Intervenors' Answers, TAB A).

In their January 28, 1982 submission, intervenors continue to assert that applicants' delay cost estimate is without foundation. Further, intervenors contend that the additional interest charges on sunk costs now included in the applicants' delay cost estimate is entirely spurious. Intervenors point out that the future rate and level of expenditures on the CRBRP have no bearing on the cost of past expenditures. Intervenors note that applicants will have to pay interest on these investments at the same rate regardless of the project's

startup date. Intervenors, in their response, make some additional points concerning applicants' estimates of the cost of delay. With respect to the costs of unavoidable management activities, they argue: (1) that the job positions included in the applicants' estimate pertain to functions characterized elsewhere as having been largely completed; (2) that the annual per person cost estimate for salary and benefits is too high; and (3) that the estimates implicitly assume that the staff will not or cannot perform activities beneficial to the project during any delay (Intervenors' Response, p. 6).

UCS Position

UCS points out that as the record of declining Congressional support for CRBRP illustrates, the future of this costly project is now more in doubt than ever before. Any action by NRC that creates a false momentum for this project will carry significant fiscal as well as political implications. In that case, DOE's recitation of the potential savings of taxpayers' funds to be achieved from shortcircuiting the licensing process must be looked at in another light. If Congress reevaluates the wisdom of this project in view of current fiscal conditions and decides not to proceed with it, and this exemption is not granted, fewer tax dollars will have been spent in site preparation and other unnecessary activities. Here again, the wisest and most neutral course for NRC would be to proceed with the normal licensing process (UCS Letter, p. 3).

Current Staff Evaluation

Staff has reviewed the applicant's cost of delay estimates. The staff believes that delay cost should be measured in real resource terms with recognition of the time value of money. Thus, the applicants' estimate from an appropriation perspective, although relevant for Congressional funding actions, may not be as meaningful a measure of the cost of delay for a decision. Also, carrying charges on monies already expended would not be included. The staff concludes that the applicants' estimate of \$28 million/year based on the economic perspective comes closest to approximating the actual cost of delay. However, the impact of delay for CRBR is represented by the deferral of the research and informational benefits stemming from the project. Although these benefits can not be easily quantified, they are nevertheless an essential element of effect of delay on the public interest.

3.4.5 Analysis of Legislative History

Applicants' Position

Applicants do not maintain that either the CRBRP legislative history or established national policy mandates the Commission's use of Section 50.12 per se. Rather, they have consistently maintained that the Congressional, Presidential, and Department of Energy's clear determination to complete the project as expeditiously as possible should guide the Commission's evaluation of the public interest factor. Applicants have maintained that: (1) the Commission should defer to the Congress, President, and the Department of Energy in regard to the need for and timing of CRBRP; (2) the Commission should exercise its discretion to advance the established national policies favoring expeditious completion; and (3) Section 50.12 is an established mechanism for advancing these policies (Supporting Memorandum, pp. 17, 18).

Intervenors' Position

The intervenors state that it has been their position throughout this proceeding that Congress, while authorizing and appropriating monies for the CRBRP, has in no way mandated extraordinary deviations from standard licensing procedures.

They believe that not only is there no history indicating congressional support for regulatory exemptions, but the nature of the Congressional action taken positively militates against such a conclusion. They also note that Courts have resisted reading significant procedural mandates into federal status, unless plainly required by the language of the statute itself or its legislative history, on the grounds that Congress presumably knows how to make its intent understood in a clear and manifest fashion.

The intervenors believe that, with respect to the CRBRP, Congress has made no attempt explicitly to establish a time period within which site preparation or, for that matter, actual construction should be authorized.

They also state that, in light of the expressed and long-standing purpose of demonstrating the licensability of fast breeder reactors, it would be shocking

if Congress -- without explicit direction -- intended to provide for regulatory exemptions. From its inception, they believe that a fundamental purpose of the CRBRP has been to demonstrate the licensability of large-scale LMFBRS. Congress has, in each successive consideration of the project, affirmed this purpose, and never indicated that any variance from standard licensing practice would be appropriate (Intervenors' Answers, pp. 9-19).

The intervenors believe that the legislative history of CRBRP shows it has always been a controversial project that has been losing support in Congress. Moreover, the language in the report accompanying the Omnibus Budget Reconciliation Act of 1981 is only a small part of a 1000-page report not available at the time the Act was voted on. Moreover, that language is not equivalent to a clear command to the NRC to grant an exemption (Intervenors' Response, pp. 1-5).

UCS Position

UCS states that the applicants' use of the fleeting reference in the conference report on the 1981 reconciliation bill (H. Rep. 97-298) to the "timely and expeditious" completion of CRBRP to justify this licensing exemption is at best misplaced, because that phrase does not carry any implication whatsoever that the normal licensing process should be bypassed.

In view of the unique legislative history of the reconciliation bill, we believe that any reliance on this language as an expression of Congressional intent verges on the fraudulent. Those familiar with the 1981 budget process should remember that the reconciliation bill was by all accounts the longest and most complex legislation ever to pass the Congress, encompassing dozens of disparate issues linked only by some connection, however tenuous, with the federal budget. This legislation was effectively adopted en bloc by a single roll-call vote with no opportunity for amendment in the House of Representatives. The CRBRP was not a major subject of debate in either branch. The Conference report upon which applicants rely ran more than 1000 pages. To pinpoint a small portion of the legislative history (rather than the law itself) as a clear expression of Congressional intent to depart from a long-established policy that CRBRP should undergo the entire licensing process strikes us as more than simply aggressive advocacy (UCS Letter, pp. 2-3).

Current Staff Evaluation

Discussion

Staff has conducted an independent review of the authorization and appropriation Acts relevant to the CRBRP and their legislative histories.²

In 1975, Section 202(1) of the Energy Reorganization Act of 1974 (ERA) explicitly provided for NRC licensing of ERDA's demonstration LMFBR. CRBRP is such a reactor and, thus, is licensable by the NRC. But since 1975, the perceived impact of licensing on the CRBRP project has been somewhat related to the more general issue of the need for the project itself. Accordingly, staff has divided the period from 1975 to the present into separate periods corresponding to the changes in political party of the Administration.

1967-1974

The legislative history of the AEC Authorization Acts during this period provides a brief history of the development of CRBRP from the initial recognition of the need to go beyond the Fast Flux Test Facility (FFTF)³ to the determination to construct a liquid metal fast breeder demonstration reactor as part of the TVA system and to locate it at a site on the Clinch River.⁴ Throughout this period the Joint Committee on Atomic Energy (JCAE) characterized the LMFBR as the AEC's highest priority civilian program, and urged the AEC to speed up

²In determining Congressional intent, the most important factor is the language of the statute itself. Next, the legislative history is used to aid in the determination of intent. The various elements of such history are not accorded equal weight. A rough hierarchy of the relative importance of various types of materials follows starting with the most persuasive: Conference report, committee report, statements made in the course of floor debate by a bill's sponsors or managers, statements by Congressman and Senators in favor of the legislation and testimony during hearings, post-enactment statements by Congressmen and Senators, especially floor managers or sponsors. Various courts have ascribed various levels of persuasiveness to each type of legislative material depending on how much that material was relied on in reaching a decision.

³H. R. Rep. No. 90-369, 90th Con., 1st Sess. 16 (1967).

⁴H. R. Rep. No. 93-969, 93rd Cong., 2nd Sess. 17 (1974).

progress on the program and to proceed without delay.⁶ These calls for expeditious progress were buttressed by President Nixon's June 4, 1971, energy message to Congress in which he announced a national commitment to the successful demonstration of a fast breeder reactor by 1980.⁷ The JCAE was in complete accord with this goal as well as other goals which flow from that basic decision and which it believed were equally important. In particular, the JCAE stated that the purpose of the program was not limited to demonstrating the ability to construct and operate a LMFBR but also included the simultaneous establishment of industrial capability for designing, constructing, and operating large LMFBR.⁸

1975-1976

The Energy Reorganization Act of 1974 divided the AEC into the NRC and the ERDA⁹ and provided for NRC licensing of certain ERDA facilities. This licensing authority was provided by Section 202 of ERA, which was characterized as a "major enhancement of the new Regulatory Commission's authority, enabling it to develop early expertise in new generations of nuclear technology as they approach commercial application."¹⁰ Congress expected that this new authority to license demonstration facilities would provide the NRC earlier access to and greater expertise in new nuclear technology and result in speedier licensing of commercial facilities.¹¹

In 1976, Congress failed to enact an Authorization Act for ERDA for 1977. Funds for Clinch River were provided by the Public Works for Water and Power Development and Energy Research and Appropriation Bill, 1977.¹² Thus, the legislative

⁵See for example, H.R. Rep. No. 91-315, 91st Cong., 2d Sess. 22 (1969).

⁶H. R. Rep. No. 91-1036, 91st Cong., 2d Sess. 20-26 (1970).

⁷See, H. R. Rep. No. 92-325, 92nd Cong., 1st Sess. 25 (1971).

⁸Id.

⁹ERDA was subsequently incorporated into the Department of Energy.

¹⁰S. rep. No. 93-980, Cong., 2d Sess. 59 (1974). See also, H. R. Rep. No. 93-1445 (Conference Report), 93d Cong., 2 Sess. 33 (1974).

¹¹Id. at 21.

¹²Pub. L. No. 94-355 (July 13, 1976).

history of the 1977 authorization bill is of interest to the extent that it indicates Congressional intent at that time. Section 2(e)(5) of the bill would have provided that:

Prior to issuing a construction permit for the Clinch River Breeder Reactor Demonstration Plant the Nuclear Regulatory Commission must find that there is reasonable assurance that the plant can be constructed and operated at the proposed location without undue risk to the health and safety of the public and that, in the opinion of the Commission, the issuance of a Construction Permit will not be inimical to the common defense and security.

The Conference Committee explained that this provision had been added in response to some Congressmens' lack of understanding of the licensing process for CRBRP.

The provision incorporated into the statute the NRC's construction permit requirements contained in 10 CFR 50.35. However, adoption of this language was not intended to preclude the NRC from imposing additional requirements.^{12,14}

ERDA's schedule is contingent upon the issuance of a Limited Work Authorization (LWA) by the Nuclear Regulatory Commission in November 1976, which would permit site preparation to commence at that time. The present schedule now projects reactor criticality in October 1983.¹⁵

Moreover, the JCAE noted that an 11-month delay in the expected issuance of the LWA, as well as other delays, caused ERDA to replan the project. As a result the cost estimate for the project increased by \$214 million; of which \$168

¹³H.R. Rep. No. 94-1718 (Conf. Rpt.) 94th Cong., 2d Sess. 58 (1976).

¹⁴The Conference Committee left open the possibility of stricter NRC requirements apparently as part of a compromise with the House. Its report on the ERDA authorization bill stated that because CRBR would be licensed pursuant to Sections 104 and 182a. of the Atomic Energy Act of 1954, as amended...the NRC will treat that facility exactly the same as a privately owned nuclear plant applying for a license for construction and operation except that (1) the NRC's examination will be more exhaustive, and (2) because the Clinch River Plant is not a light water reactor, those portions of the Commission's regulations which are applicable only to light water reactors will not apply. H.R. Rep. No. 94-1081, Part I, 94th Cong., 2d Sess. 18-19 (1976).

¹⁵H.R. Rep. No. 94-1081, Part 1, 94th Cong., 2d Sess. 17 (1976).

million was directly attributable to the delay.¹² The legislative history makes no mention of the availability of an exemption pursuant to 10 CFR 50.12.

1977-1980

Two significant political events mark the beginning of this period. The Administration changed and, the new Administration's nonproliferation policy was inconsistent with the plutonium energy cycle and, thus, CRBRP. In addition, the JCAE was disbanded and its oversight functions were distributed to other Congressional committees. Pub. L No. 95-240 provided funds only to terminate the project. The 1978 ERDA Authorization Bill was vetoed by the President. However, the Congressional Reports do provide an indication of Congressional assumptions and thinking on procedures for licensing CRBRP.¹⁷ The House Committee on Science and Technology stated that:

The Project is ready for site clearance upon issuance of LWA. All work is on schedule supporting a mid-1984 criticality.¹⁸

Moreover, the ERDA Authorization Act of 1978 would have explicitly permitted issuance of an LWA. Section 106 provided that:

Site preparation and also those construction activities for which a construction permit is required shall not commence during the fiscal year ending September 30, 1978, but the foregoing limitation on commencement of site preparation activities shall not be deemed to prohibit or in any way limit the grant of a limited work authorization for those activities during any fiscal year.¹⁹

It should be noted at this point, although it is not in sequence, the former Director of ERDA's Division of Reactor Development and Demonstration testified that ERDA had initially contemplated seeking an exemption under 50.12(b) but

¹⁷The applicants also rely on the legislative history of this bill as demonstrating Congressional support for CRBRP. (See Supporting Memorandum, Appendix A, p. 14)

¹⁸H. R. Rep. No. 95-349 Part I, 95th Cong., 1st Sess. 90 (1977).

¹⁹See S. R. No. 95-482 (Conference), 95th Cong., 1st Sess. 10 (1977).

¹⁶Id., p. 18.

changed its mind when the LWA rule was promulgated. On July 11, 1977, Eric S. Beckjord testified as follows before the Subcommittee on Nuclear Regulation of the Senate Committee on Environment and Public Works:

The CRBR Project has asked for no special license variances. Consistent with one of the major CRBR Project objectives of demonstrating the licenseability of the LMFBR concept, the CRBRP is being subjected to the identical licensing process by the NRC as would any commercial nuclear power plant. At the time of the Burns and Roe memorandum, the Project was expecting to request an exemption to conduct certain site preparation activities prior to the receipt of a Construction Permit, as was permitted by the AEC Regulations under 10 CFR 50.12(b). At that time, the AEC was granting exemptions for commercial nuclear power plants under this regulation since this was prior to institution of the use of LWAs.

When the regulations were changed to incorporate the LWA procedure, the Project abandoned consideration of an exemption request and oriented licensing activities toward obtaining an LWA.

Thus, the current request for an exemption represents a change in policy. In 1978, because of a presidential veto of the Public Works for Water and Power Development and Energy Research appropriations Bill, 1979 funding for CRBRP was provided as part of the joint Resolution making continuing appropriations for 1979.²⁰ The report by the Senate Committee on Appropriations with regard to the vetoed appropriations bill noted that:

The Committees on Appropriations have supported consistently the Clinch River Demonstration Project in view of the need to determine at an early date the licensing, technical and economic issues that must be resolved if there is to be viable breeder reactor option for this nation.²¹

The House Committee on Appropriation in its report on the Energy and Water Development Appropriations Bill for 1980²² similarly stated:

²⁰Pub. L. No. 95-482 (October 18, 1979).

²¹S. Rep. No. 95-1490 (Conference), 95th Cong., 2d Sess. 10 (1978).

²²P. L. No. 96-69. Although that Bill was enacted into law, Pub. L. No. 96-69, it did not provide funds for CRBRP: the Committee defined funding the project until the dispute over its continuation was resolved. Funding was finally provided by Pub. L. No. 96-86.

The Committee has been and continues to be a strong supporter of the Liquid Metal Fast Breeder Reactor development program, including the Clinch River project. The Nation needs to know at an early date the technical, licensing and economic issues that must be resolved in order to develop a viable breeder reactor option. Clinch River remains an essential step in a development program. It is not an effort to commercialize breeder reactors.²³

Thus, an early determination of licensability was a Congressional objective of the CRBRP program.

1981-Present

The start of this period is marked by the change in Administration and a reversal of the previous administration's policy not to pursue reprocessing. Late in 1981, funding for CRBRP for fiscal year 1982 was provided by the Omnibus Budget Reconciliation Act of 1981.²⁴ The Conference Report explicitly stated:

The Conferees intended that the plant should be constructed in a timely and expeditious manner so that a decision on the commercialization and deployment of breeder reactors can be made on the basis of information obtained in the operation of the plant.²⁵

The intent of the Conference Bill and Conference Report language was explained by the Floor Managers of the bill in the House and Senate. In the Senate, a colloquy between Senators Domenici and McClure explains that construction should be undertaken as expeditiously as possible to minimize the effect of delays resulting from the 1977 decision to stop the project.²⁶ In the House, Congresswoman Bouquard stated:

²³H. R. No. 96-243, 96th Cong., 1st Sess. 22 (1980)

²⁴Pub. L. No. 9735 (August 13, 1981).

²⁵H. R. Rep. No. 97-208, 97th Cong., 1st Sess. (1981).

²⁶127 Cong. Rec. 58998, C.2 (daily ed., July 31, 1981).

The Conferees' intent is clear on this project, that the DOE should move ahead with all deliberate speed and I trust the administration will obtain the cooperation of other agencies in seeing that construction will go ahead at a significant pace.

The Conferees' choice of the words "timely" and "expeditious" were purposely chosen with the intent that licensing, construction, and other related project activities be undertaken promptly and with as In the same sentence the phrase "so that a decision on commercialization and deployment of breeder reactors can be made on the basis of information obtained in the operation of the plant" in conjunction with the words "timely" and "expeditious" means that the effect of unrecoverable delays resulting from the 1977 decision to stop the project should be minimized and that to the maximum extent possible an overall liquid metal fast breeder reactor program should proceed in accordance with the pre-April 1977 project schedule.²⁷

Although these quotations do not explicitly discuss the NRC's licensing procedures, there is debate in the Senate indicating that at least that body was on notice that DOE intended to apply for a waiver of certain licensing requirements.²⁸

This review of the legislative history of the funding for CRBR shows that Congress has neither specifically prohibited nor specifically allowed use of 10 CFR 50.12 in licensing the facility. DOE's current request under 50.12 is a change from its previously announced policy of strictly following the normal procedures for commercial power reactors. However, that earlier policy does not appear to have been statutorily mandated.

²⁷127 Cong. Rec. H5817, C.3 (daily eds., July 31, 1981).

²⁸127 Cong. Rec. 512862, C.3 (November 4, 1981).

Attachment A: Reference Abbreviations

Applicants

Davis' Letter Letter from W. Kenneth Davis, Acting Secretary of Energy, to the Nuclear Regulatory Commission, July 1, 1982.

SPAR Site Preparation Activities Report, Department of Energy, June 1982.

Supporting Memorandum Applicants' Memorandum in Support of Request to Conduct Site Preparation Activities, Department of Energy and project Management Corporation, July 1, 1982.

ER The Environmental Report for the Clinch River Breeder Reactor Plant, Project Management Corp., Chicago, IL, April 7, 1975, and Amendments I through VII.

Nuclear Regulatory Commission

FES Final Environmental Statement, Clinch River Breeder Reactor Plant, U.S. Nuclear Regulatory Commission, NUREG-0139, February 1977.

SSR Site Suitability Report, Clinch River Breeder Reactor Plant, U.S. Nuclear Regulatory Commission, June 11, 1982.

Commission Order Order, U.S. Nuclear Regulatory Commission, July 9, 1982.

FES Supplement	Draft Supplement to Final Environmental Statement, Clinch River Breeder Reactor Plant, U.S. Nuclear Regulatory Commission, NUREG-0139 Supplement 1, July 1982.
<u>Other Participants</u>	
Intervenors' Memorandum	Memorandum of Intervenors, Natural Resources Defense Council, Inc., and Sierra Club, In Opposition to Applicant's Request to Conduct Site Preparation Activities, December 15, 1981.
Intervenors' Answers	Comments of the Natural Resources Defense Council, Inc., and the Sierra Club in Opposition to Applicants' Exemption Request Under 10 CFR 50.12, Natural Resources Defense Council, Inc., and Sierra Club, January 18, 1982.
Intervenors' Response	Supplemental Comments of the Natural Resources Defense Council, Inc., and the Sierra Club in Opposition to Applicants' Exemption Request Under 10 CFR 50.12, National Resources Defense Council, Inc., and Sierra Club, January 28, 1982.
Intervenors' Brief	Brief of the National Resources Defense Council, Inc. and the Sierra Club in Opposition to Applicants' Exemption Request under 10 CFR 50.12, July 22, 1982.
UCS Letter	Letter from the Union of Concerned Scientists on the Clinch River Breeder Reactor Plant Exemption Request under 10 CFR 50.12, July 22, 1982.



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555

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COMMISSIONER

Docket No. 50-537
(Exemption request
under 10 CFR 50.12)

MEMORANDUM FOR: Secy
FROM: John Ahearn
SUBJECT: CRBR QUESTIONS

SERVED JUL 13 1982

The July 9th order states the Commission will distribute questions today.

Attached are mine.

Attachment

cc: Chairman Palladino
Commissioner Gilinsky
Commissioner Roberts
Commissioner Asselstine
OCA
OPE
OGC

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DOCKET

Commissioner Ahearne's Questions for CRBRP Applicants

6-13

1. On page 2 of his letter dated July 1, 1982 to the Commission, Acting Secretary Davis states:

"Most importantly, acceleration of the CRBRP schedule by 6 to 12 months will:

SERVED JUL 13 1982

- o Support the timely completion of. . .the Large Developmental Plant. . . ."

Please describe the current funded program for this plant and the funding in the FY 83 DOE budget proposal.

2. On page 2 of the Davis letter:

". . .as indicated in the Department's letter of February 25, 1982, [acceleration of the CRBRP schedule] will also yield substantial monetary cost savings to the taxpayer."

Does the Department wish the February 25th letter to remain as part of their submission? Does the Department wish to modify any part of that letter?

3. Page v, Site Preparation Activities Report (SPAR), June 1982:

"Approval by NRC to proceed as proposed can. . . achieve a substantial cost savings to the taxpayer."

Page 7-2:

"The estimated 6-12 months reduction in schedule will result in substantial cost savings."

Page 7-13:

"The net effect of an additional 1 year delay to the project from an appropriation perspect, [sic] is estimated at \$129 million."

Page 7-13:

"From the economic perspective. . . [t]he net of these costs is estimated at a minimum of \$28 million for a 1 year project delay."

Page 7-14:

"From the financial perspective, the present worth of a one year delay in the CRBRP Project would result in a cost increase of \$218 million."

Are the estimates from pages 7-13 and 7-14 the "substantial cost savings to the taxpayer"? (Note that on page 28 of the "Applicants' Memorandum in Support of Request to Conduct Site Preparation Activities," dated July 1, 1982, the applicants refer to:

"[t]he relatively small investment for site preparation activities. . . ."

According to the SPAR, this investment would be \$81.5 million (p. 3-22).)

4. The quotes from pages 7-13 and 7-14 of the SPAR referenced in question 3 apparently are to be supported by reference 7-5 (page 8-7 of the SPAR):

"The calculations supporting the cost of delay are contained in W. Kenneth Davis, Deputy Secretary DOE to NRC Commissioners, February 25, 1982, Applicants Response to NRDC, Incorporated, and Tennessee Attorney Generals Comments, January 28, 1982, and Applicants Answers to Questions Set forth in Attachment A to the Commissioners, December 24, 1981, Order (January 18, 1982)."

Does the DOE continue to support all cost calculations in reference 7-5?

5. . Page 25, "Applicants' Memorandum in Support of Request to Conduct Site Preparation Activities":

"This case in [sic] on all fours with Shearon-Harris."

Given that the site preparation work addressed in the Shearon Harris case was authorized before the LWA rule went into effect, please explain why Shearon Harris is "on all fours" with the current request.

6. Page 16, "Applicants' Memorandum in Support of Request to Conduct Site Preparation Activities":

"The Department of Energy has implemented Congressional and Presidential policy and its own independent statutory responsibility for energy research and development, by determining that CRBRP should be completed as expeditiously as possible. The program called for in the Environmental Impact Statement for the Liquid Metal Fast Breeder Reactor Program (Supplement to ERDA-1535, DOE/EIS-0085-FS, May 1982) is construction of CRBRP as expeditiously as possible."

Page 29:

"[G]rant of the Section 50.12 request will permit CRBRP to provide information in a timely fashion necessary to support the LFMNR Base Research and Development Program, and Large Developmental Plant, and the LFMNR Fuel Cycle Program, and will substantially enhance the prospects for success in those programs."

Page 39, "Final Environmental Impact Statement (Supplement to ERDA-1535, December 1975), Liquid Metal Fast Breeder Reactor Program" (DOE/EIS-0085-FS, May 1982) (footnote omitted):

"There are four main reasons to proceed expeditiously with the U.S. LMFBR development program:

- o Even with a relatively vigorous LMBFR development program, a commercially viable LMFBR cannot be available for several decades.
- o There is significant uncertainty in any prediction of a date for LMFBR need.
- o In view of uncertainties, the penalties for developing the breeder too early are small compared to the penalties for developing too late.
- o "Continuity is essential to progress in any high technology development program."

Page 40:

"Even if the LMFBR program is pushed ahead now in a vigorous fashion, commercial-scale demonstration cannot be accomplished until the mid-1990's and resulting utility commitments to commercial LMFBRs would result in LMFBR generating plants no earlier than 2005 to 2010."

Page 43:

"As noted earlier, the prudent course is to gear the development program toward possible commercialization of LMFBRs fairly early in the next century. . . .This course provides the maximum programmatic flexibility and minimizes the risk of not having options available."

Page 45:

"The nation has a considerable investment in the team of people and the facilities that now make up the LMFBR program. If development were substantially deferred, experienced people would be lost to other fields, and existing facilities would have to be closed."

The timing of the program called for in the EIS seems to be measured in terms of years and decades rather

than months. The "Applicants' Memorandum in Support of Request to Conduct Site Preparation Activities" states to the NRC that the public interest would be best served by granting the request. The Applicants argue that the information and program benefits support this position. Certainly grant of the Section 50.12 request will "permit CRBR to provide information in a timely fashion." However, since the Applicants raise the issue, it is important to understand how failure to grant the request will cause the information to be untimely. Therefore, how will delay of site preparation activities until (a) December 1982 or (b) August 1983 affect the "informational and programmatic benefits"?



THE SECRETARY OF ENERGY
WASHINGTON, D.C. 20585

July 1, 1982

WES/H

The Honorable Nunzio J. Palladino
Chairman
Nuclear Regulatory Commission
Washington, D.C. 20555

The Honorable James K. Asselstine
Commissioner
Nuclear Regulatory Commission
Washington, D.C. 20555

The Honorable Victor Gilinsky
Commissioner
Nuclear Regulatory Commission
Washington, D.C. 20555

The Honorable John F. Ahearn
Commissioner
Nuclear Regulatory Commission
Washington, D.C. 20555

The Honorable Thomas F. Roberts
Commissioner
Nuclear Regulatory Commission
Washington, D.C. 20555

Re: Clinch River Breeder Reactor Plant
Docket No. 50-537 (Section 50.12 Request)

Gentlemen:

The Department of Energy (DOE), for itself and on behalf of Project Management Corporation and the Tennessee Valley Authority, hereby requests authorization from the Nuclear Regulatory Commission (NRC), under 10 C.F.R. Section 50.12, to conduct site preparation activities for the Clinch River Breeder Reactor Plant (CRBRP) project. DOE seeks prompt NRC approval to conduct site clearing, grading, excavation, and construction of temporary support and certain service facilities at the Clinch River site.

The enclosed Site Preparation Activities Report (SPAR) describes the specific activities proposed, and provides the detailed technical justification and support for this request. A Memorandum in Support of Request for Authorization to Conduct Site Preparation Activities, which provides the detailed legal justification and support for this request, is being filed separately by the applicants.

In filing this request, there is no intent to abrogate the NRC licensing process. Approval of this request in accordance with NRC's established Section 50.12 procedures would allow site preparation activities to commence, while at the same time assuring full consideration of all relevant environmental issues, and preserving all elements of NRC's environmental, safety, and hearing processes. In addition, grant of this request will advance established national policies in favor of expeditious project completion.

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This request implements Congressional policy in regard to the CRBRP. The project has been continually authorized and funded by the Congress for more than a decade. More recently, the Conference Report for the Omnibus Budget Reconciliation Act of 1981 reaffirmed the intent of the Congress that the CRBRP project is an essential step in the development of the LMFBR and that the project must be constructed in a timely and expeditious manner.

This request furthers the Administration's policy in regard to the LMFBR technology demonstration program and the CRBRP project. The President's October 8, 1981, nuclear energy policy statement established this Administration's definitive policy on the LMFBR program and CRBRP project as follows:

"I am directing that government agencies proceed with the demonstration of breeder reactor technology, including completion of the Clinch River Breeder Reactor. This is essential to ensure our preparedness for longer-term nuclear power needs."

This request reflects Department policy in regard to CRBRP. DOE is committed to the programmatic timing of CRBRP--as expeditiously as possible.

These established Congressional, Presidential, and Department policies in favor of expeditious project completion are further buttressed by the substantial informational benefits which will be derived from grant of the request. Most importantly, acceleration of the CRBRP schedule by 6 to 12 months will:

- o Support the timely completion of the LMFBR base technology program, the Large Developmental Plant, and the LMFBR Fuel Cycle program, and enhance the prospects for success in those programs.
- o Support the achievement of the Administration's nonproliferation policy objectives, and enhance the prospects for a U. S. leadership position in nuclear technology.

While acceleration of the CRBRP schedule will yield primary benefits in terms of information, as indicated in the Department's letter of February 25, 1982, it will also yield substantial monetary cost savings to the taxpayer. From any of three perspectives--appropriations, financial, or economic--these cost savings will accrue at the rate of no less than \$28 million per year. Moreover, as shown by the February 25 letter, since the project is funded and its costs are estimated in year of expenditure dollars, from the perspective of Congress and the taxpayer, inflationary cost increases are real and should be avoided. Continued delay in the project can only serve to jeopardize its prospects for success, without any offsetting benefit to the public interest.

An appropriate balance of the four Section 50.12 factors weighs heavily in favor of the request. The SPAR presents a strong affirmative case on the first three Section 50.12 factors. The NRC's 1977 FES concludes that the environmental effects of site preparation would not be significant.

Any impacts that may occur are redressable, and grant of the request will not foreclose any reasonable alternatives. For these reasons, grant of the request will be entirely consistent with NRC's primary responsibility to protect the public health and safety and the environment. At the same time, grant of the request will yield substantial programmatic benefits and advance the Department's ability to carry out its primary responsibilities for energy research and development and policy. In this regard, the Commission which by statute does not have programmatic or developmental responsibility should afford the Department substantial deference regarding public interest considerations and, on balance, grant this request.

Sincerely,



W. Kenneth Davis
Acting Secretary

Enclosure - IN BP.

Before the
UNITED STATES
NUCLEAR REGULATORY COMMISSION
Washington, D.C. 20555

DOCKETED

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

BRIEF OF THE NATURAL RESOURCES DEFENSE COUNCIL, INC.
AND THE SIERRA CLUB IN OPPOSITION TO APPLICANTS' EXEMPTION
REQUEST UNDER 10 C.F.R. §50.12

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Sierra Club

Dated: July 22, 1982
Washington, D.C.

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Before the
UNITED STATES
NUCLEAR REGULATORY COMMISSION
Washington, D.C. 20555

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

BRIEF OF THE NATURAL RESOURCES DEFENSE COUNCIL, INC.
AND THE SIERRA CLUB IN OPPOSITION TO APPLICANTS' EXEMPTION
REQUEST UNDER 10 C.F.R. §50.12

By letter dated July 1, 1982, the Department of Energy, Project Management Corporation and the Tennessee Valley Authority (the "Applicants") have launched their third effort under 10 C.F.R. §50.12 to obtain Commission authorization to conduct site preparation activities for the Clinch River Breeder Reactor (the "CRBR"). Once again, major construction is at issue.^{1/} And, once again, the lack of support for their request for extraordinary relief from standard licensing processes is predictable. Indeed, they present no new facts, cite no changes in circumstances, point to no modifications in applicable law, and rely upon no

^{1/} The current projected cost is \$81.5 million. See Applicants' Site Preparation Activities Report 3-23 (June 1982) (hereinafter cited as the "SPAR II").

shifts in public policy which would in any way justify a reversal of the Commission's prior considered rejections of Applicants' claim for relief. ^{2/} Any reopening at all of Section 50.12 issues in this licensing is thus questionable. See generally Intervenors' Memorandum in Support of Motion for Summary Denial, dated July 9, 1982 at 2-10.

In considering an exemption request under 10 C.F.R. §50.12, ^{3/} the Commission must conduct essentially a

^{2/} If anything, the facts on this exemption request are less compelling than they were in March, 1982 when Applicants' first request was denied. The only change in circumstances since then is that the hearing phase for environmental and site suitability issues before the Atomic Safety and Licensing Board is now substantially closer. The hearing is scheduled to commence on August 23. See Notice of Evidentiary Hearing and Prehearing Conference, dated July 19, 1982. Even if the hearing date is deferred because of the Staff's decision to issue and recirculate as a draft a supplement to the 1977 Final Environmental Statement (the "FES"), the hearing is likely to commence well before the end of this year.

^{3/} 10 C.F.R. §50.12 provides:

(a) The Commission may, upon application by any interested person or upon its own initiative, grant such exemptions from the requirements of the regulations in this part as it determines are authorized by law and will not endanger life or property or the common defense and security and are otherwise in the public interest.

three-step inquiry. First, it must decide, as a threshold matter, whether there are fundamental deficiencies in Applicants' request which compel its denial as a matter of law or

Footnote continued.

(b) Any person may request an exemption permitting the conduct of activities prior to the issuance of a construction permit prohibited by §50.10. The Commission may grant such an exemption upon considering and balancing the following factors:

(1) Whether conduct of the proposed activities will give rise to a significant adverse impact on the environment and the nature and extent of such impact, if any;

(2) Whether redress of any adverse environment impact from conduct of the proposed activities can reasonably be effected should such redress be necessary;

(3) Whether conduct of the proposed activities would foreclose subsequent adoption of alternatives; and

(4) The effect of delay in conducting such activities on the public interest, including the power needs to be used by the proposed facility, the availability of alternative sources, if any, to meet those needs on a timely basis and delay costs to the applicant and to consumers.

Issuance of such an exemption shall not be deemed to constitute a commitment to issue a construction permit. During the period of any exemption granted pursuant to this paragraph (b), any activities conducted shall be carried out in such a manner as will minimize or reduce their environmental impact.

policy. Second, it must determine whether there are "emergency" and "exigent" circumstances which would justify extraordinary relief from standard licensing process. Third, even if such circumstances do exist, it must consider and balance each of the four specific criteria set forth in 10 C.F.R. §50.12(b).

Applicants, having largely abandoned their prior reliance on asserted costs of delay as the primary basis for obtaining relief, now focus primarily on what might loosely be characterized as "national policy" factors. They contend that a radical departure from the Commission's standard licensing process is necessary to avoid catastrophic consequences for United States nuclear power policy at home and abroad. The fate of our energy production capability and global influence in the 21st century are now said to depend on whether site preparation activities for the CRBR commence in August, 1982, rather than several months later.

Given the thrust of Applicants' latest request, Intervenors, Natural Resources Defense Council, Inc. and the Sierra Club (the "Intervenors"), will direct their attention in this brief on the second of the three elements of the Commission's inquiry under Section 50.12 -- the presence or absence of "emergency" or "exigent" circumstances -- and on the "public interest" criterion of the waiver provision, 10

C.F.R. §50.12(b)(4). ^{4/} As we will demonstrate below,

4/ Intervenors continue to maintain that, as a threshold matter, at least six specific legal and policy grounds compel denial of the exemption request without regard to the validity of Applicants' factual assertions: (a) the exemption provision has no applicability to the conduct of site preparation activities for a reactor in the licensing posture of the CRBR; (b) there is no mandate in law for the Commission to deviate from standard licensing practice; (c) such a deviation would undercut a fundamental purpose of the CRBR project, which is to demonstrate the licensability of fast breeder reactors; (d) grant of an exemption would substantially undermine public confidence in the CRBR and its licensing process; (e) a waiver is impermissible, where, as here, it would result in the predetermination of Intervenors' environmental contentions; and (f) because of the incomplete environmental record in this proceeding, an exemption, if granted, would be in violation of the National Environmental Policy Act of 1969 ("NEPA"). In addition, with respect to the first three factors specified in 10 C.F.R. §50.12(b), there are serious questions whether \$80 million-plus of site preparation activities can properly be characterized as having no significant environmental effects (see CLI-82-4, opinion of Commissioner Ahearne at 15); whether full redress of the site is possible or, more importantly, likely, given its high cost; and whether, as a practical matter, conduct of the proposed activities could foreclose subsequent adoption of alternatives (see CLI-82-4, opinion of Commissioner Bradford at 2-3, noting "the unwisdom of piling large sunk costs on the licensing process unnecessarily"; opinion of Commissioner Ahearne at 17, noting "potential prejudice to the alternate sites issue"). Our views on these matters, as well as "costs of delay," are set forth in our prior presentations and will not be reiterated here. See generally, Memorandum of Intervenors, Natural Resources Defense Council, Inc. and the Sierra Club, in Opposition to Applicants' Request to Conduct Site Preparation Activities, dated December 15, 1981 (hereinafter cited as "Dec. 15 Mem."); Comments of the Natural Resources Defense Council, Inc. and the Sierra Club in Opposition to Applicants' Exemption Request Under 10 C.F.R. §50.12, dated January 18, 1982 (hereinafter cited as "Jan. 18 Mem."); Supplemental Comments of the Natural Resources Defense Council, Inc. and the Sierra Club in Opposition to Applicants' Exemption Request Under 10 C.F.R. §50.12, dated January 28, 1982 (hereinafter cited as "Jan. 28 Mem."); Transcript of Commission Hearing, dated February 16, 1982, at 122 - 186. We continue to rely fully on these presentations and incorporate them herein by reference.

there is little if any supporting evidence for Applicants' assertions, and the benefits they foresee flowing from the grant of the exemption request, as well as the risks resulting from its denial, are wholly speculative. Applicants' new emphasis on "programmatic" risks and benefits, in other words, falls far short of meeting the exacting standards for grant of an exemption request. ^{5/}

I. THERE ARE NO EMERGENCY OR EXIGENT CIRCUMSTANCES WHICH WOULD JUSTIFY GRANT OF THE EXEMPTION REQUEST

To the extent that the exemption provided in 10 C.F.R. §50.12 has any application as a matter of law to the CRBR licensing, the Commission must apply an exceedingly stringent standard in determining whether relief should be

^{5/} It should further be noted that it is perhaps clearer today than it was in March that granting the Section 50.12 exemption request would violate NEPA and is therefore not "authorized by law" within the meaning of Section 50.12. On July 19, 1982, the Staff determined that significant new information concerning the environmental impacts of the CRBR project has necessitated the preparation and circulation of a 390-page "Draft Supplement to the 1977 Final Environmental Statement related to construction and operation of Clinch River Breeder Reactor Plant" (NUREG-0139, Supplement No. 1, Draft Report). This weighty document updates virtually every section of the 1977 FES, and, under NEPA, must be circulated to the public and interested agencies for comments before a final Supplement is prepared. Until a final Supplement is issued, however, NEPA prohibits the Commission from authorizing commencement of site preparation work at the proposed CRBR site. See Dec. 15 Mem. at 24-28; Jan. 18 Mem. at 23-30.

afforded. As the Commission stated in Washington Public Power Supply System (WPPSS Nuclear Power Project Nos. 3 and 5), CLI-77-11, 5 NRC 719, 723 (1977):

We regard this method as extraordinary, and we reiterate that it should be used sparingly Parties should resort to this method of relief only in the presence of exigent circumstances, such as emergency situations in which time is of the essence and relief from the Licensing Board is impossible or highly unlikely."

Indeed, in this very proceeding, Commissioner Ahearne has emphasized that there is a "high threshold for exemptions" under this "exceedingly unusual" procedure. See Order, CLI-82-4 (March 16, 1982) (Opinion of Commissioner Ahearne at 10, 12). Applicants essentially make three arguments to support their claim that the requisite "exigent" or "emergency" circumstances exist: (1) that asserted dictates of national policy warrant positive action on their request; (2) that alleged hardship to the Liquid Metal Fast Breeder Reactor ("LMFBR") program would result if relief is not granted; and (3) that because of the "unique" nature of the CRBR grant of the exemption request would not be precedent-setting.

Applicants' Memorandum in Support of Request to Conduct Site

Preparation Activities, dated July 1, 1982, at 12-23 (hereinafter cited as "App. Mem").^{6/} None is the least persuasive.

^{6/} In this latest round, Applicants do not appear to press seriously their claims with respect to dollar costs of delay. They note, however, that they continue to rely upon the assertions made in the Deputy Secretary's letter of February 25. See letter of Acting Secretary Davis, dated July 1, 1982, at 2; see also SPAR II at 7-12 -- 7-14. In other words, they still seem to be arguing that there are three cost perspectives in this matter: an "appropriations" perspective, a "financial" perspective, and an "economic" perspective. As we have pointed out previously, however, an "appropriations" perspective has nothing to do with real economic costs; it simply reflects a political argument about why Congress may or may not act. Similarly, a "financial" perspective is completely artificial, based largely on accounting convenience. And, as to "economic" costs, which Applicants now claim to be on the order of \$28 million a year, all objections made previously continue to pertain. Not only do these figures keep changing -- at various points they have been claimed to be \$31 million, \$38 million and \$42 million, leading Commissioner Ahearne in March to express no confidence in any of Applicants' estimates (CLI-82-4, opinion of Commissioner Ahearne at 39) -- but Applicants' own presentation is inconsistent. Thus, for example, on one hand, Applicants note that these costs are essentially associated with the maintenance of management personnel during the period of delay, see SPAR II at 7-13, while, on the other hand, they note that one asserted result of delay will be the "continued loss of the cadre of technical experts as they transfer to other areas . . ." SPAR II at 7-4. Surely, Applicants cannot have it both ways. In addition, as both Commissioners Gilinsky and Bradford previously pointed out, Applicants' figures are arbitrary, are based on an "artificially" and "implausibly" low discount rate, and could well be "zero" or even a "benefit". See CLI-82-4, opinion of Commissioner Gilinsky at 8, 9; opinion of Commissioner Bradford at 1. Finally, the calculation of "unavoidable" management costs by Applicants is largely unsupported by reliable data, see Jan. 28 Mem. at 6-10, and, as Charles Komanoff explained in his Supplemental Statement of January 28, 1982, in calculating these costs, Applicants have failed to weigh the benefits of design improvements initiated during delay, have used excessive charging rates, and have given insufficient consideration to personnel reassessments, with the result that the true net cost of personnel retention is likely to be greatly overstated.

(a) Considerations Of National Policy Do Not Warrant Granting The Exemption Request

In making their case for an exemption request, Applicants lay great stress on the asserted "national policies" in favor of "expeditious" completion of the CRBR. See App. Mem. at 15-19. But Congressional policy, if anything, makes it plain that licensing exemptions are not appropriate, and general Administration policy, reflected in self-serving statements that may appear, for example, in the Department of Energy's Final Environmental Impact Statement For The Liquid Metal Fast Breeder Reactor Program (Supplement to ERDA-1535, DOE/EIS-0085-FS, May, 1982) (the "LMFBR EIS"), neither can nor should be dispositive of the outcome of this proceeding.

In their latest submission, Applicants concede that neither "the CRBRP legislative history nor established national policy mandates the Commission's use of §50.12 per se." App. Mem. at 17 (emphasis added). But then they argue tortuously that in the exercise of its admittedly discretionary authority under Section 50.12 the Commission must defer to "established national policies favoring expeditious completion." App. Mem. at 18. To the extent this argument is premised on Congressional (and not current Administration) policy, it is little more than the statutory mandate argument

in disguise and should be utterly rejected by the Commission.
See generally Dec. 15 Mem. at 11-14; Jan. 18 Mem. at 9-14.

Through all the long history of legislative consideration of the CRBR, Congress, while appropriating monies, has never mandated any deviations at all from standard licensing procedure or even suggested that they are appropriate. To the contrary, Congress has always stressed the importance of following strict licensing procedures. See Dec. 15 Mem. at 14-18; Jan. 18 Mem. at 15-19.

While the Omnibus Budget Reconciliation Act of 1981 -- upon which Applicants greatly rely -- calls for the construction of the CRBR in a "timely and expeditious manner," H. Rep. No. 97-208, 97th Cong., 1st Sess. 827 (1981), "timely and expeditious" completion can in no way be equated with a mandate (or even an invitation) to short-circuit required licensing procedures. As Commissioner Ahearne stated in March:

[A]lthough it is clear Congress supported moving ahead expeditiously on the CRBR, there is nothing to show this was not intended to direct DOE to get the licensing process restarted -- rather than to direct the NRC to waive our normal procedures. Consequently, I do not read the Congressional action as a directive to waive - or not to waive - our normal procedures."

CLI-82-4, opinion of Commissioner Ahearne at 25.

Further, despite Applicants' efforts to create an impression to the contrary, Congressional support for the CRBR is tenuous. Congressional support for the CRBR project has steadily eroded from year to year, see Dec. 15 Mem. at 12, n. 12, and, in the last Congress, it was only a hair's breadth decision to move the CRBR forward at all. In 1981, despite a favorable Administration stance on the project for the first time in four years, measures in both the Senate and the House which would have deleted funding for the CRBR in fiscal year 1982 were only narrowly defeated. For example, on May 7, 1981, the House Science and Technology Committee voted 22-18 to terminate the project. On July 24, 1981, the House of Representatives upheld continued funding by a margin of only 20 votes. See 127 Cong. Rec. H.4839-4862 (July 24, 1981). In the Senate, on November 4, 1981, the vote was only 48-46 for continued funding. See 127 Cong. Rec. S.12858 (November 4, 1981). The CRBR, in other words, is before the Commission today not because of an overwhelming Congressional mandate but because of the narrowest victory of its Congressional supporters. And, as Applicants have candidly admitted, see Transcript of February 16, 1982, Hearing at 7-9, 86 (statement of Mr. Davis), they desperately fear that, absent

the movement of earth at the CRBR site, their "mandate" will shortly disappear altogether. ^{7/}

When one turns one's view from Congress, one finds no single, clarion voice of national policy. See generally GAO, The Liquid Metal Fast Breeder Reactor -- Options for Deciding Future Pace and Direction (GAO/EMD-82-79, July 12, 1982) (describing a variety of CRBR "options" for the future). ^{8/} The Department of Energy's own Energy Research Advisory Board ("ERAB") ranks the CRBR as a lower priority item. ERAB has stated, "The ERAB believes that the construction of a breeder reactor demonstration at this time is not an urgent priority and thus, under current budget constraints, recommends that such a demonstration be delayed

^{7/} A recent Budget Resolution vote in the House on an amendment which would have deleted funding for a number of projects (not just the CRBR), see App. Mem. at 16, n. 15, does not reflect a change in sentiment. The debate made it plain that the vote related only to overall budget figures and did not reflect a decision with respect to any individual projects. See 128 Cong. Rec. H.3069 (May 27, 1982).

^{8/} Of eighty comments submitted to the Commission as of February 8, 1982 in connection with Applicants' first request, "only two . . . favored granting the exemption." See Memorandum, dated February 8, 1982, from Forrest J. Remick to the Members of the Commission. And, of course, the wisdom of proceeding with the CRBR is the subject of major national debate. The Washington Post editorialized just two weeks ago, "The Clinch River Breeder Reactor, as a project, is outmoded, expensive, dangerous and unneeded." The Washington Post, July 6, 1982 at A16.

until a future time." Energy Research Advisory Board, Federal Research and Development Priorities at 19, 43 (November 1981). To take just one comment from many in the earlier record, Bruce Babbitt, John Deutch and Hal Lewis in a letter dated January 13, 1982, expressed substantial doubts about the need to start site preparation work now or, indeed, to proceed expeditiously with the project:

"[M]ost informed observers believe that the CRBR project is both obsolete and premature, obsolete in that it reflects a technology that has matured since the inception of the project and premature in view of the projected time scale for the depletion of uranium resources. The industry, NRC and DOE would be well advised to focus effort today on light water reactors and to structure a long-term breeder development program aimed at producing genuinely competitive breeder reactors when they are needed."

The General Accounting Office has noted that "a number of industry spokesmen told GAO that the Department's current plan could result in too rapid development of breeder reactors." See GAO, The Liquid Metal Fast Breeder Reactor -- Options for Deciding Future Pace and Direction v (GAO/EMD-82-79, July 12, 1982). Numerous other experts concur that proceeding rapidly with the CRBR makes little if any

sense. 9/

Applicants' response to this avalanche of negative opinion is simply that it should be ignored and that, instead, the Commission should rely exclusively on the views of Applicants in deciding whether an exemption is warranted. They assert that the Commission's 1976 decision with respect to its NEPA responsibilities, U.S. Energy Research and Development Administration (Clinch River Breeder Reactor Plant), CLI-76-13, 4 NRC 67 (1976), must be construed to mean that, if Applicants assert that programmatic policies favor early site preparation activities, then the Commission must find that the requisite "exigent" and "emergency" circumstances exist. We think the Commission did not go so far in

9/ These include: Dr. Earl Callen, Professor of Physics, American University; Dr. Walter W. Heller, Regents' Professor of Economics at the University of Minnesota; Dr. Richard L. Garwin, IBM Thomas J. Watson Research Center, and Adjunct Professor of Physics, Columbia University; Professor Abram Chayes, Professor of Law, Harvard University; Dr. Robert S. Pindyck, Professor of Applied Economics, Alfred P. Sloan School of Management, Massachusetts Institute of Technology; Denis Hayes, former Director, Solar Energy Research Institute, Department of Energy; Dr. Joseph S. Nye, Professor of Government, John F. Kennedy School of Government, Harvard University; Dr. Linus Pauling, Nobel Laureate, Palo Alto, California; Dr. James C. Fletcher, Whiteford Professor of Technology and Energy Resources, University of Pittsburgh; and Dr. George Rathjens, Professor of Political Science, Massachusetts Institute of Technology. A summary of the views of these distinguished critics of the CRBR is attached as Exhibit A.

1976 to abdicate its authority and indeed such an approach would make a travesty of the licensing process.

The Commission's decision laid down the principle that the Commission would not substitute its judgment for that of the Department of Energy with respect to the general question of the "need for a demonstration-scale facility . . . including its timing and objectives." 4 NRC at 92. While eschewing involvement in "broad planning decisions", however, the Commission carefully retained its authority to deal with "matters of greater specificity" which involve "implementation of planning decisions." 4 NRC at 84. In other words, while the Commission would not second guess Applicants with respect to the overall timing and objectives of the proposed action, more detailed, "implementation" decisions are well within its purview. Whether site preparation activities should commence now or in several months plainly fall within this category of implementing decisions. The LMFBR EIS nowhere states that six months here or there is critical; indeed it expresses substantial uncertainty with respect to timing of the entire program. See, e.g., LMFBR EIS at 30. And general statements by Applicants that there is a need to move forward expeditiously simply do not answer the question whether, in the specific context of this exemption request, a six to twelve month advancement in the sche-

dule constitutes the kind of emergency justifying relief under Section 50.12. That is for the Commission to decide, in the exercise of its independent licensing judgment, on the basis of the facts, if any, of hardship, and not on the basis of claimed "national policy".

(b) No Undue Hardship Will Result To Applicants If Relief Is Denied

In assessing claims of hardship, even Applicants do not dispute that the Commission must take a hard, independent look at the facts. Indeed, under the Commission's 1976 decision, the Commission emphasized that "[t]he likelihood that the proposed CRBR project will meet its objectives within the LMFBR program . . . is an issue relevant to this proceeding." 4 NRC at 92. The benefits of waiver -- and the risks of denial -- plainly bear on whether the CRBR's objectives will be met, and are not matters on which deference to Applicants is appropriate. Yet Applicants' case for a waiver on these "hardship" grounds is pathetically thin.

Applicants have mounted a parade of horribles, mixing willy-nilly short term and long term, project-specific and broadly programmatic effects, in an effort to leave the impression that, in domino fashion, a several-month delay in

site preparation activities will translate into termination of the LMFBR program, jeopardization of future U.S. nuclear power needs, and loss of United States global influence. See SPAR II at 7-1 -- 7-12; App. Mem. at 19-21. The relevance of this asserted damage is uncertain, however, since the LMFBR program objectives are limited in nature and relate only to demonstration of "technical performance, reliability, maintainability, safety, environmental acceptability and economic feasibility of a LMFBR central station electric power plant in a utility environment." LMFBR EIS at 10. Industry, in theory, will ultimately decide whether to invest in LMFBRs, and the program, by its own terms, is not intended to achieve "global" objectives for the United States. In any event, the future is not quite so certain. And the evidence submitted is so conclusory as to give no basis for lending credence to it. 10/

10/ It is appropriate, in any case, to view Applicants' assertions of hardship with a jaundiced eye. In the first round, Applicants contended that the CRBR would be "dead in the water" if the exemption request were not granted. See Transcript of December 16, 1981 Hearing at 11 (Statement of Mr. Silverstrom). It soon became apparent that this was not the case. See Jan. 28 Mem. at 13. Now Applicants argue that there is a new date, August, 1982, after which the CRBR will be off the "critical path" and will have to "mark time while awaiting authorization to proceed" App. Mem. at 19, 20. But, as might have been

(1) "Overall" Program Benefits

Applicants argue that the absence of "demonstrable progress" in the CRBR project will in some unspecified way sap "the vitality of the overall program." SPAR II at 7-3. In so doing, they conveniently ignore progress which is being made. Indeed, elsewhere we are advised that design work and engineering research and development work are proceeding at a rapid pace and that there is a high completion rate. See App. Mem. at 19. Suppliers and fabricators are presumably quite busy. Id. And, a full scale adjudicatory hearing on a Limited Work Authorization is scheduled to begin shortly. Demonstrable progress in the CRBR, in other words, is there if Applicants wish to point to it.

Applicants further profess concern about "loss of momentum" in the overall program (although that would seem to pale in comparison with the Carter Administration four year

Footnote continued.

expected, the basis for the conclusion is not supplied, and one has a sneaking suspicion that work on the project will go forward after this magic date. Further, in other contexts, Applicants appear cavalierly to have manipulated information presented to the Commission so as to conceal damaging uncertainties and inadequacies in their analysis. See Intervenors' Petition for Investigation, dated July 14, 1982.

pause) 11/ and a "blurring" of the focus of the LMFBR program. But it is Applicants' own focus which seems to be blurred. Short term versus long term risks are so confused that it is difficult to understand what Applicants are think-

11/ Of course, to the extent the purpose of seeking the Section 50.12 exemption is to gain "momentum", this is one reason why the Commission should turn Applicants down. Applicants wish to create the impression that this project can no longer be halted or modified. They are seeking to bolster their position for future Administration budget battles and Congressional funding debates. There is no question that they believe that turning a "spade of dirt" will foreclose one alternative -- the no action alternative. In such circumstances, the case law under NEPA makes it plain that expenditures of the sort contemplated here would be inconsistent with 10 C.F.R. §50.12(b)(3) and should not be permitted. See, e.g., Stop H-3 Ass'n. v. Volpe, 349 F. Supp. 1047, stay pending appeal denied, 353 F. Supp. 14 (D. Haw. 1972) (enjoining expenditure of \$2.5 million for design and engineering on highway); Steubing v. Brinegar, 511 F.2d 489 (2d Cir. 1975) (enjoining expenditures of \$4.6 million on bridge and highway construction); Environmental Defense Fund, Inc. v. Corps of Engineers, 325 F. Supp. 749 (E.D. Ark. 1971) (enjoining \$5 million of construction work on Gillham Dam); Warm Springs Dam Task Force v. Gribble, 417 U.S. 1301, motion to vacate stay denied, 418 U.S. 910 (1974) (enjoining \$7 million of dam construction). As Commissioner Bradford noted earlier:

The difficulty with special exemptions that go beyond the Limited Work Authorization procedures is that they slice applications into inscrutable segments. Bit by bit, plants are built with their full implications unreviewed until completion. As the economic commitment grows, the safety and environmental reviews are inevitably subject to increasing economic pressure. For all the Commission's past protestations to the effect that the work is done at the risk of the Applicant, this has rarely been completely true and is in any case unpersuasive when the Applicant is government funded to so great an extent.

ing about. For example, it is far from clear how one can leap, as Applicants do, to a conclusion that six months of delay will hamper "current" efforts to obtain international participation in the LMFBR program, see SPAR II at 7-4, when the SPAR II itself notes that international agreements may be dependent upon obtaining data from construction "and operation" of the CRBR, id. (emphasis added) -- data which are more than a decade away.

Finally, it is important to stress that the CRBR is not the entire LMFBR program. The Department of Energy has other active breeder research and development projects. The 1983 Departmental budget request allocates \$252.5 million for the CRBR, but \$324 million for other breeder research. See 2 U.S. Department of Commerce, Energy Research and Technology Administration, FY 1983 Congressional Budget Request 147-165 (DOE/MA-0057) (February 1982) (the "DOE Budget Request"). And, many supporters of breeder research have suggested that the entire program might be more efficient and better directed if the CRBR were not part of it at all at this time. See, e.g., letter of Babbitt, Deutch and Lewis, dated January 13, 1982, and the compilation of expert views attached as Exhibit A. It is simply fanciful to suggest that the fate of the entire LMFBR program depends upon whether site work is con-

ducted at Clinch River in the fall of 1982. 12/

(2) Informational Benefits

Allegedly lost informational benefits, see SPAR II at 7-5 -- 7-8, are equally speculative. While it is true that earlier operation may result in earlier resolution of certain problems, given the overall time frame for the LMFBR program, which is on the order of decades, it is inconceivable that a few months in the start-up of site preparation activities will make a significant difference. 13/ As Commissioner Gilinsky earlier noted, "The gain [of having information a year earlier] is intangible, and no persuasive

12/ That conduct of site preparation activities now is essential to preserve the option of the United States "to exploit the vast source of energy available within the United States in the form of the depleted uranium tailings", SPAR II at 7-4, is even more fanciful. These tailings will not disappear, if site activities are not carried out now. They will be available for utilization, should the United States at some future point decide to utilize them, i.e., when it makes economic sense to do so.

13/ Examination of the Table at SPAR II 7-6 -- 7-7 reveals how far away many of these benefits are. Presumably such items as "confirmation . . . of long term reliability and operation" (emphasis added) of pumps, valves, piping and other components, for example, will not be known, under the best of circumstances, until sometime in the late 1990's. And, of course, the usefulness of the information will depend upon the prospects for commercialization at that time.

argument was presented that it would be substantial." CLI-82-4, opinion of Commissioner Gilinsky at 5. Precisely the same conclusion holds true today.

In any event, the value of the data from this plant is open to question. As Henry Sokolski of the Heritage Foundation stated in recent Congressional hearings:

[T]he sort of data we might get from building CRBR will be less than helpful for designing better liquid metal fast [b]reeder reactors (LMFBRs) in the future. In fact, CRBR with its loop design is already six or more years behind the pool designs the French have built and when complete CRBR will be at least 16 years out of date. Again, to the extent that major atomic vendors and several utilities are doing work on this project, there is a danger that this project will lock them into a[n] inferior position producing technology that no one much wants.

Statement of Henry Sokolski in Hearings Before the Subcommittee on Energy Conservation and Power of the House Committee on Energy and Commerce, 97th Cong., 2d Sess. (March 11, 1982).

(3) Large Development Plant Benefits

When Applicants seek to translate the CRBR experience into benefits for the Large Development Plant (the "LDP"), see SPAR II at 7-8 -- 7-9, there are even greater

uncertainties. Although there has been funding for the LDP in prior years, LDP funding was deleted from the Department of Energy's FY 1983 budget request, see DOE Budget Request at 148, 150, and money will only be available if a formal cooperative agreement to proceed with LDP is reached by federal, private and foreign entities. And numerous factors, i.e., availability of private financing, corporate priorities and the like, will affect decisions to participate. ^{14/} Lastly, the translation of CRBR experience to an LDP which may never be built is a matter of some subtlety. Presumably if the Department of Energy is successful in getting partners for the LDP project, design work will be well along, if not complete, long before the CRBR is in operation. ^{15/} Thus, the CRBR experience would have little relevance to development of the basic parameters of the LDP system.

^{14/} For potential foreign participants, such as the British and Japanese, for example, it seems obvious that much more critical than on-site progress at the CRBR will be their overall national decisions with respect to direction of their fast breeder programs. See Inside Energy, July 9, 1982, at 1, 4. In any event, whether failure to commence site preparation activities in August "could be perceived . . . as a lack of commitment to the LMFBR program" which "could impede the prospect of cooperation," SPAR II at 7-9, simply has too many "ifs" to provide any solid basis for judgment.

^{15/} The Department of Energy's own projections show LDP design complete before CRBR start-up. See LMFBR EIS at 41.

(4) Fuel Cycle Benefits

Fuel cycle program benefits are even farther down the line. Applicants argue that "earlier completion of the CRBRP, followed by a reprocessing demonstration, would permit an earlier overall confirmation of our ability to close the LMFBR fuel cycle." SPAR II at 7-10. But by Applicants' own projections the reprocessing demonstration for the CRBR will not take place before 1996, some 14 years away. See LMFBR EIS at 76, 79. It strains credulity to think that delays measured in months in 1982 will have an important bearing on a demonstration scheduled to take place near the end of the century.

(5) International Program Considerations

When Applicants come to describe "international program considerations", see SPAR II at 7-10 -- 7-12, their case trails off into incoherence. Applicants, still pressing their argument on the unfounded assumption that failure to conduct site preparations will result in the termination of the entire LMFBR program, refer vaguely to the loss of U.S. ability to maintain "active U.S. influence and leadership in the international nuclear field," SPAR II at 7-10, to "influence global events" id. at 7-11, and to reestablish our

"credibility as a supplier of nuclear equipment, technology and fuels." Id. This exaggerated rhetoric attributes far too much to such a simple matter as site preparation activities. The United States is and will remain the premier nuclear power nation, regardless of what happens at Clinch River in August, 1982. The U.S. has in place an enormous fission research program -- \$1.016 billion the Department of Energy's FY 1983 proposed budget, see DOE, Federal Energy Programs, FY 1983 Budget Highlights, Feb. 1982 at 9 -- not to mention the world's largest base breeder R&D program. Its influence is likely to remain unparalleled.

Further, it is not as if breeder programs elsewhere in the world are making rapid progress over the U.S. The French breeder, for example, often cited as the leader in this field, "faces strong economic problems that portend a bleak future for its survival, much less its expansion -- contrary to what is presented in the popular and trade press." See "French Breeder Feels Hard Heel of Economics," Electrical World (Jan. 1981). Likewise, in West Germany, it is unclear whether the Kalkar SNR-300 demonstration plant will ever be completed due to financial, political and technical difficulties. See Nucleonics Week, March 11, 1982 at 8-9; Nuclear News, May, 1982 at 57-58. And, in Japan, the 300 Mwe Monju fast reactor, originally scheduled for opera-

tion in 1984, has yet to start construction. In other words, the United States, with or without site preparation activities at the CRBR this August, seems likely (to the extent the CRBR is a viable plant) to remain abreast of the field.

In addition, it is hard to see how CRBR relates in any way to our "credibility as a supplier of nuclear equipment, technology and fuels." SPAR II at 7-11. We do not supply fast reactors and are unlikely to do so in the near future. And one must assume that we will continue to meet our uranium supply commitments even if, in the worst case, the CRBR is never built.

Finally, the assertion that failure to proceed with site preparation activities will adversely affect the "advancement of the Administration's non-proliferation objectives," see letter of Acting Secretary Davis, July 1, 1982 at 2, is ludicrous. When one examines the LMFBR EIS, the best that the Department of Energy can do is argue that development of breeder reactors will not aggravate existing non-proliferation problems; they certainly have nothing to do with helping to solve those problems. See LMFBR EIS at 167-169. In non-proliferation terms, development of breeder reactors is a risk that must be dealt with. As Frank Von Hippel of Princeton University noted in his letter of January 13, 1982

to the Commission "the breeder program, which relies on a plutonium fuel cycle, may promote the spread of nuclear weapons, immensely complicating our non-proliferation problems." And, in the particular context of the CRBR, authorizing acceleration of site preparation activities gives precisely the wrong signal to the world: that even though safeguards and physical security problems have yet to be resolved, as they must eventually be in a rigorous licensing process, breeder development will be acceptable from a non-proliferation standpoint.

(6) Conclusion

In the final analysis, the hardships catalogued by Applicants lack substance. It is simply not possible to project with any certainty whatsoever short term delays in 1982 into impacts felt in a program decades from now. Projections with respect to the entire LMFBR program are little more than guess-work, and the Department of Energy itself admits that, even in the best of circumstances we will see LMFBR generating plants "no earlier than 2005 to 2010", LMFBR EIS at 40, and LMFBR deployment could be "several decades later." Id. at 37. 16/

16/ The General Accounting Office has noted that the Department of Energy's "most recent study . . . shows that a commercial breeder reactor would most likely be eco-

Further, most recent information indicates that the need for fast reactors will be later rather than sooner. See generally, GAO, The Liquid Metal Fast Breeder Reactor -- Options For Deciding Future Pace and Direction (GAO/EMD-82-79, July 12, 1982). ^{17/} When the CRBR was originally proposed, certain assumptions were made with respect to the growth of electrical energy, the numbers of operating nuclear power plants, and the availability of uranium. Today, all those assessments have been revised. It was assumed, for example, that the 7% annual electrical growth rate that prevailed between 1960-73 would continue through the rest of the century, but in fact electrical growth rates have dropped below 3% annually. A September, 1981 House Science and Technology Committee report suggests that electrical demand growth may increase at a rate well below 2% per year for the

Footnote Continued.

nomical in the 2025 to 2035 time frame." GAO, The Liquid Metal Fast Breeder Reactor -- Options for Deciding Future Pace and Direction iv (GAO/EMD-82-79, July 12, 1982).

^{17/} GAO indicates that "our domestic [uranium] supplies are apparently sufficient to fuel conventional light water reactors well past 2020." Id. at 15.

foreseeable future. Subcommittee on Investigations and Oversight of the House Science and Technology Committee, Energy Demand Forecasting and Its Appropriate Role in Planning and Policy, 97th Cong., 1st Sess. v (September 1981). It was also assumed that nuclear power would account for much of that electricity growth, whereas, in fact, the Energy Information Administration now predicts that nuclear power will contribute less than 15% of what had been previously projected, III Energy Information Administration, 1981 Annual Report to Congress 2 (DOE/EIA 0173) (February 1982), and this estimate may be high. Remarks of Commissioner Victor Gilinsky, Nuclear Regulatory Commission, World Nuclear Fuel Markets International Conference on Nuclear Energy, Washington, D.C., October 10, 1981, at 2. Finally, it was assumed that uranium would be scarce and expensive by the year 2000. In fact, the cancellation of over 60 U.S. nuclear power plant orders since 1975, together with the drop in electrical demand growth and the development of new uranium reserves, has created a uranium glut. See Atomic Industrial Forum, Historical Profile of U.S. Nuclear Power Development 15 (December 1981). At the same time, uranium now costs much less (approximately \$23/lb. in the spot market) than was projected in the 1970's. See Nuclear Fuel, March 15, 1982 at 17. Breeder reactors, however, may not be economical until the price of uranium reaches at least \$165/lb. R.W. Hardie

and G.R. Thayer, Analysis of Nuclear Power Economics 18 (June 1981). In such circumstances, it is plain that "delay" of the CRBR demonstration at this point by a matter of months cannot possibly do irreparable damage to the LMFBR program as a whole.

(c) The "Unique" Nature of the CRBR Cannot Justify the Exemption

Applicants' argument that granting of the exemption would not be "precedent setting" because of the "unique nature" of the CRBR, see App. Mem. at 22-23, can only be considered ironic. It is precisely the project's unique nature which should make the exemption procedure inapplicable. See generally Dec. 15 Mem. at 22; Jan. 18 Mem. at 7-9.

The Commission's mechanisms to allow site activities prior to the issuance of a construction permit (Section 50.12 and the Limited Work Authorization procedure) were developed in connection with the licensing of conventional light water reactors. The Commission's experience with these reactors allowed it to make site-related decisions, factoring in safety considerations as appropriate, prior to completion

of a full safety review. But this rationale simply does not apply in the case of the CRBR and thus a complete review must be required before any work is allowed to begin.

Further, the notion that granting an exemption is permissible because the CRBR is unique runs wholly counter to the objective of demonstrating "licensability", which is at the heart of this project. See Dec. 15 Mem. at 14-18; Jan. 18 Mem. at 15-19. Indeed, until this past year, this was Applicants' own understanding. As the former Director of the Division of Reactor Development and Demonstration of the Energy Research and Development Administration testified before the Subcommittee on Nuclear Regulation of the Senate Committee on Environment and Public Works on July 11, 1977:

"The CRBR project has asked for no special license variances. Consistent with one of the major project objectives of demonstrating the licensability of the LMFBR concept, the CRBRP is being subjected to the identical licensing process by the NRC as would any commercial nuclear plant. At the time of the Burns and Roe memorandum, the project was expecting to request an exemption to conduct certain site preparation activities prior to the receipt of a construction permit as was permitted by the AEC regulations under 10 C.F.R. §50.12(b). At that time, the AEC was granting exemptions for commercial nuclear power plants under this regulation since this was prior to institution of the use of LWA's. When the regulations were changed to incorporate the LWA procedure, the project abandoned consideration of an exemption request and oriented licensing activities toward obtaining an LWA."

II. PUBLIC INTEREST CONSIDERATIONS EMPHASITICALLY CALL FOR DENIAL OF THE EXEMPTION REQUEST

In the balance of the four factors specified in Section 50.12(b) the Commission has devoted the most attention to the "public interest" and Applicants, likewise, have stressed "national policy" factors, see App. Mem. at 29, which purportedly support their position. It is thus important to clarify the nature of the Commission's "public interest" inquiry. ^{18/}

Applicants' asserted "national policies" are essentially irrelevant to considerations under subsection (b)(4). Subsection (b)(4) specifically mentions only two components

^{18/} Although Intervenors pass over the first three factors specified in Section 50.12(b), resting on their prior presentation, they do wish to bring to the Commission's attention new information relevant to considerations under subsection (b)(1). The Draft FES Supplement indicates that, according to the U.S. Fish and Wildlife Service, several species of endangered fresh water mussels may be present in the Clinch River near the proposed CRBR site, and one such specimen has been discovered at Clinch River mile 19.1. Draft FES Supplement at 5-6 -- 5-7. The Commission Staff has not yet developed a final staff position on the project's potential impacts on the endangered species. Id. In addition, there still exists uncertainty concerning the use of the Clinch River for spawning by the sauger, an important game fish, and a report on spawning habitats will not be issued until December, 1982. Draft FES Supplement at 2-17; SPAR II at 2-32. The Draft Supplement discussion of these and other environmental impacts must be circulated for public comment before the Commission's position is final. The environmental review, in sum, cannot be considered closed.

of the "public interest" criterion: "delay costs to the applicant and to consumers" and "power needs" to be met by the proposed facility. Applicants, as noted above, see page 8, note 6, supra, no longer primarily rest their case on the first component. And, as to the second component, Congress itself has made it clear in the Conference Report on the Omnibus Budget Reconciliation Act of 1981 that the CRBR should not be construed "on the basis of providing needed power in this specific region of the Clinch River site." H. Rep. No. 97-208, 97th Cong., 1st Sess. 827 (1981). ^{19/}

Even assuming that Applicants' "national policy" factors are relevant under subsection (b)(4), Applicants' contention that "there are no countervailing public interest factors," App. Mem. at 30, is patently wrong. At least two other factors emphatically call for denial of the exemption request.

^{19/} It bears emphasis that in the one contested case in the past eight years where an exemption has been granted, power needs, the availability of alternative sources to meet those needs on a timely basis and delay costs "to consumers" were important factors influencing the outcome of the deliberations on the request. See The Carolina Power & Light Co. (Shearon-Harris Nuclear Power Plant, Units 1, 2, 3 and 4), LBP-74-18, 7 AEC 538, 550-552 (1974).

First, the need for a careful, considered and complete environmental review under NEPA before authorizing work on a project of the magnitude of the CRBR has often been held to outweigh programmatic (or cost) considerations of the sort cited by Applicants. See, e.g., Steubing v. Brinegar, 511 F.2d 489, 497 (2nd Cir. 1975); Coalition for Canyon Preservation v. Bowers, 632 F.2d 774 (9th Cir. 1980). See also Calvert Cliffs Coordinating Committee, Inc. v. United States Atomic Energy Commission, 449 F.2d 1109, 1115 (D.C. Cir. 1971). As one District Court has stated in refusing to suspend a preliminary injunction barring further construction of a federal highway project:

[I]n the constellation of interests affected by the injunction or by a suspension of the injunction, I give primacy to this interest: that the federal agencies obey the Congressional command to assemble the information necessary to an informed decision, to perceive the choices to be made, to evaluate the factors thus perceived, and to articulate in writing the reason for deciding whether to proceed or not to proceed with a major project significantly affecting the quality of the human environment.

Scherr v. Volpe, 336 F. Supp. 882, 889-890. (W.D. Wis.), aff'd., 466 F.2d 1027 (7th Cir. 1972).

Second, there is an overwhelming public interest in this case in maintaining the integrity of the licensing process and avoiding actions which will tend to cast doubt upon that process. In the first round, it was the view of the

vast majority of the roughly 80 public commenters that public confidence was a central consideration for both the CRBR project and the Commission itself and, simply put, in the words of Messrs. Deutch, Babbitt and Lewis, grant of the exemption would "undermine public confidence in the licensing process."

Today, there are three reasons which make this consideration even more critical:

- Intervenors have raised serious questions with respect to the possible withholding of important safety data by Applicants. See Intervenors' Petition for Investigation, dated July 14, 1982. Because the Commission must rely heavily on Applicants' presentation in the licensing process, the integrity of that process has thus already been drawn in issue in this case.
- The Department of Energy following the March 16 decision left the impression that a change in the composition in the Commission would produce a different substantive result. See generally Intervenors' Motion for Recusal, dated May 17, 1982. That impression still lingers, and positive action

now on the new request, absent any new justification therefor, will inevitably raise questions about the independence and objectivity of the Commission. 20/

-- In his presentation to the Commission on February 16, Acting Secretary Davis was candid in stating that a fundamental purpose of Applicants' exemption request has been to bolster its position in the Congressional appropriations process, see Transcript of February 16 Hearing at 86, and this purpose is implicit in most, if not all, of Applicants' current argument about programmatic risks should the request be denied. We believe that, if the Commission were perceived as allowing itself to be used in a blatant effort to influence the outcome of Congressional deliberations, the damage would be incalculable. Applicants' arguments are political; there is no reference to them in the criteria established under Section 50.12; they do

20/ This problem is exacerbated by the serious questions about the legality under principles of administrative finality and res judicata of even proceeding to entertain the present request. See Intervenors' Motion for Summary Denial, and Supporting Memorandum, dated July 9, 1982.

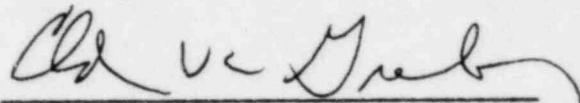
not involve the exercise of independent licensing judgment; and they have no place in this proceeding. The public interest requires that they be utterly rejected.

In our judgment, the bottom line of the public interest criterion is found in the Commission's basic statutory mandate, which requires it to act in a fashion that will insure the protection of the environment, the public health and safety, and the common defense and security. In this case this means assiduously adhering to the procedures which Congress and the Commission have established for the licensing of commercial reactors and providing a full, rigorous and independent review of the CRBR project. The public interest compels the rejection of special exemptions, shortcuts and extraordinary variances which run counter to this central goal.

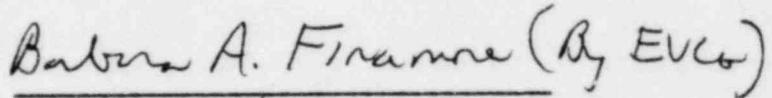
CONCLUSION

For all the reasons set forth above and in their prior submissions, Intervenors respectfully submit that the Commission should deny Applicants' exemption request.

Respectfully submitted,



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EXPERTS SPEAK OUT AGAINST THE CLINCH RIVER BREEDER REACTOR*

"Continuation of the Clinch River Breeder Reactor (CRBR) program would be a mistake and a great waste of money. The strange, and for me surprising result of my investigation was how easy it was to arrive at that conclusion. The fact is that no one I consulted with favored the continuation of the CRBR, neither nuclear hawks nor doves, nor does logic point me in the direction of continuation of the CRBR....

"If the nation does ultimately find it necessary to resort to a breeder technology, it is unlikely that the breeder employed will be on the Clinch River model; professionals tell me they consider the CRBR to be a white elephant, funded not for its technical merit but for political reasons.

"It would probably take twenty-five years to work through the experience needed to fix on which breeder decision to follow, and to get a program going. So we probably have twenty-five years during which we can think about breeders with detachment and in a low-level, unhurried 'basic research' climate. I conclude that the CRBR should be dropped. But prudence may dictate that a low-level program with long term funding securely assured be maintained, to work through those various breeder options that appear most attractive, and to provide the nation with some background of experience and expertise if in fact it ever does begin to look plausible that breeders will be coming up over the energy horizon. But this last suggestion is more one of management judgement than of technical necessity."

-- Dr. Earl Callen
Professor of Physics
American University

* The views presented here are those of individual experts and not necessarily the institutions with which they are affiliated or NRDC.

"Specifically, I would disagree with the argument that one must build the breeder reactor in order to avoid the loss of technical expertise (and enthusiasm) of a whole generation of reactor engineers. Nonsense!"

-- Dr. Richard L. Garwin
IBM Thomas J. Watson
Research Center, and
Adjunct Professor of
Physics, Columbia
University

"My position on Clinch River is and always has been that the United States probably doesn't need a breeder, that if we did want a breeder, the Clinch River technology is obsolescent, and that in any event, appropriations for this purpose now, in the face of the enormous projected deficit and the crying needs of the domestic sector, are wholly unwarranted."

-- Dr. Abram Chayes
Professor of Law
Harvard University

"In terms of basic economics, government funding for the CRBR is equivalent to large-scale subsidies for the commercialization of synthetic fuels. As such, it is wasteful to the utmost, and is unlikely to contribute significantly to solving any of our energy problems....

"There is simply no economic rationale for government funding of the CRBR. The CRBR does not represent an even remotely commercially viable technology, so that government funding represents a gross misallocation of economic resources. Also, even if the CRBR and other reactor programs eventually operate and produce power (as a result of massive government funding), the result would be an artificial inflation of energy consumption. This is so because the taxpayer would be financing much of the cost of producing this power, so that the price mechanism would be severed. Finally, expenditures for the CRBR are particularly undesirable today because they would have the effect of 'locking us in' to an uneconomical technology."

-- Dr. Robert S. Pindyck
Professor of Applied Economics
Alfred P. Sloan School of
Management
Massachusetts Institute of
Technology

"...I have always felt that it was premature to build a demonstration LMFBR since, with current projections of the use of uranium for PWR's and LWR's, a commercial breeder reactor won't be needed until 2010-2030 (if it's needed at all)....At this point, however, I have difficulty seeing how you 'stuff the genie back in the bottle' and therefore would only oppose continuing with the CRBR on the basis of unnecessary expenditures at too early a date."

-- Dr. James C. Fletcher
Whiteford Professor of
Technology and Energy
Resources
University of Pittsburgh

"With the currently poor prospects for the growth of nuclear power in this country and in most of the rest of the world, uranium is likely to be a glut on the market for many years and the price will continue to be depressed. In these circumstances, it makes absolutely no economic sense to consider commercialization of the breeder in this century. At least, it makes no sense for the United States....This situation is likely to continue until uranium prices exceed at least \$100 per pound (in 1982 dollars) and I doubt that I...will live to see that day.

"...I think the French are going ahead with commercialization more rapidly than is wise. But for better or worse, they are doing it, and with that, the case for U.S. demonstration and commercialization, and for the CRBR in particular, is greatly weakened....With the French, and others, active in breeder work, the technology will be developed. We can take advantage of that on a licensing basis if, and when, we need it; meanwhile, focusing U.S. technical efforts in other areas where we have comparative advantage or greater need, and in areas that are being neglected by others.

"...It must be understood that to the degree that there are suggestions in INFCE [the International Fuel Cycle Evaluation] that early breeder commercialization would be desirable they are based on projections for the growth of nuclear power, and hence for the demand and prospective price for uranium that seemed inflated when it began and almost laughably high by the time it ended, and which now are totally unreal."

-- Dr. George Rathjens
Professor of Political
Science
Massachusetts Institute
of Technology

CERTIFICATE OF SERVICE

COPIED

I hereby certify that a copy of the foregoing BRIEF OF INTERVENORS, NATURAL RESOURCES DEFENSE COUNCIL, INC. AND THE SIERRA CLUB, IN OPPOSITION TO APPLICANTS' EXEMPTION REQUEST UNDER 10 C.F.R. §50.12, was delivered by hand this 22nd day of July, 1982 to:

The Honorable Nunzio J. Palladino
Chairman
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

The Honorable James K. Asselstine
Commissioner
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

The Honorable Victor Gilinsky
Commissioner
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

The Honorable John F. Ahearne
Commissioner
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

The Honorable Thomas F. Roberts
Commissioner
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

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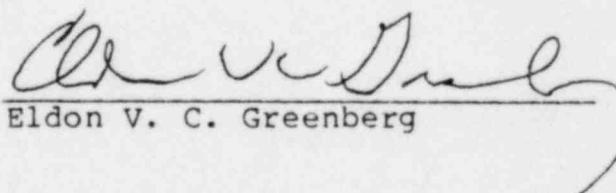
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Andrew Jackson Building, Suite 1007
Nashville, Tennessee 32219


Eldon V. C. Greenberg

Scheduling Notes for Oral Presentation on
Clinch River Breeder Reactor Project

Scheduled: 10:00 a.m., Thursday, July 29, 1982

Duration: Approx 2 hours

Purpose: To hear the views of commenters on the DOE exemption request for the Clinch River Breeder Reactor.

Participants: The following will speak in favor of granting the exemption request:

1. George Edgar (30 minutes)
Leon Silverstrom
(and possibly backup witnesses)
For DOE/TVA/Project Management Corp.
2. Miro Todorovich (5 minutes)
Executive Director
Scientists and Engineers for Secure Energy
3. A.K. Bissell (5 minutes)
Mayor of Oak Ridge
4. Ted vonCannon (5 minutes)
Tennessee Department of Economic and
Community Development
(on behalf of the Governor of Tennessee)
5. Randy McNally (5 minutes)
State Representative of Tennessee (Tentative)

The following will speak in favor of denying the exemption request:

1. Eldon Greenberg (30 minutes)
Barbara Finamore
Jacob Scherr
(for NRDC/Sierra Club)
2. Michael Faden (5 minutes)
(for the Union of Concerned Scientists)
3. Lee Breckenridge (5 minutes)
(for the Attorney General of Tennessee)
4. Theodore Taylor (5 minutes)
Independent Consultant

This list will be revised as necessary.

Dawn

— initial of stream "clearly in
public interest."

6-12 months shortening com date
substantial saving to public