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UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
BEFORE THE  
ATOMIC SAFETY AND LICENSING BOARD

In the Matter of

UNITED STATES DEPARTMENT OF ENERGY  
PROJECT MANAGEMENT CORPORATION  
TENNESSEE VALLEY AUTHORITY

(Clinch River Breeder Reactor Plant)

Docket No. 50-537

APPLICANTS' MOTION TO STRIKE PORTIONS OF THE  
TESTIMONY OF DR. THOMAS B. COCHRAN (PART III)

Pursuant to 10 C.F.R. §2.730, the United States Department of Energy and Project Management Corporation, for themselves and on behalf of the Tennessee Valley Authority, (the Applicants) hereby move to strike certain portions of the Testimony of Thomas B. Cochran (Part III), dated November 1, 1982.

The Applicants move to strike the portions of the testimony identified herein ab initio because each identified portion of the testimony has already been ruled beyond the scope of this proceeding by the Board. Granting

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this motion, at the outset will allow the hearings to proceed without unwarranted delay.<sup>\*/</sup>

The portions of Dr. Cochran's testimony which should be stricken and the reasons for striking each portion are presented below:

I. Answer A.7 (p.6).

A. Testimony.

The underlined portions of Answer 7, below, should be stricken:

A.7: As indicated in Figures A5.1 (DSFES, p.5-16) and D.1 (DSFES, p. D 3), most of the specific facilities that are listed for the proposed CRBR fuel cycle do not now exist; they are hypothetical future facilities. For example, the source of plutonium to fuel the CRBR has not been established; whether and, if so, where CRBR spent fuel will be reprocessed has not been established; and the sites for interim high level waste storage and for the final high level waste repository have not yet been established. The Staff has failed to analyze all reasonably foreseeable fuel cycle alternatives, including, for example:

a) providing the initial plutonium fuel by reprocessing commercial reactor spent fuel at (i) Barnwell or (ii) the Savannah River Plant (SRP), or obtaining the initial plutonium from (iii) foreign sources (e.g., the UK);

b) as an alternative to the postulated "developmental Reprocessing Plant" (DRP), using one of the existing chemical reprocessing

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<sup>\*/</sup> The Applicants reserve their right to cross-examine at the hearings and to move to strike based on witness qualifications or any other grounds which arise during the course of the cross-examination.

facilities at SRP, the PUREX facility at Hanford, or a small facility built into the FMEP, for recycling CRBR fuel;

c) using plutonium bred in CRBR in nuclear weapons;

d) the potential unavailability of adequate plutonium to fuel the CRBR (ruled by the Board as beyond the scope of the LWA 1 proceeding). \*/

\* \* \*

B. Reasons for Striking.

1. In its April 14, 1982 Prehearing Order the Board ruled that the issue of plutonium availability was beyond the scope of these proceedings. In addition, in its Protective Order of May 27, 1982, the Board ruled that the amount of plutonium that the United States intends to obtain from the United Kingdom presents an issue which "concerns environmental impacts outside the United States and beyond the scope of NEPA." Id. at 2-3.

2. The testimony in subparagraph d) of A.7 should be stricken because, as Dr. Cochran noted in his testimony, the Board has ruled that the availability of fuel for the CRBRP is beyond the

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\*/ The parenthetical remark is contained in the testimony.

scope of this proceeding "as a matter of law."  
See, Order Following Conference With Parties dated  
April 14, 1982 at 7-8. The Board stated therein  
that the "contention involves questions of DOE  
policy and future actions which go wholly beyond  
the proper issues relevant to this particular  
plant." Id. at 8.

II. Answer A.8. (p.7)

A. Testimony.

The following portion of A.8 should be stricken:

A.8 First, I believe there is insufficient plutonium  
to provide the initial inventory and first four  
reloads of the core, and consequently the CRBR  
will not be able to meet its programmatic  
objectives during its five-year demonstration  
period (ruled by the Board as beyond the scope of  
the LWA-1 proceeding).

B. Reason for Striking.

The reason for striking is the same as that given  
in I.B.2, supra, i.e. the testimony deals with  
fuel availability, a subject ruled beyond the  
scope of this proceeding.

III. Question Q.9 and Answer A.9 (pp.8-15).

A. Testimony.

Dr. Cochran's Q.9 and A.9 deal with the  
availability of fuel for the CRBRP. Q.9 is provided

below. A.9, because of its length, is attached as an appendix to this motion.

Q.9. What is the basis for your view that there will not be adequate supplies of low burnup plutonium and consequently the plutonium isotopic concentrations assumed by Applicants and Staff cannot be met?

B. Reason for Striking.

Q.9 queries Dr. Cochran as to why he believes "that there will not be adequate supplies" of fuel for the CRBRP. A.9 deals entirely with the response to that question. As noted in I.B.2, supra, the availability of fuel for the CRBRP has been ruled beyond the scope of this proceeding.

IV. Answer A.18 b), c) and d) (pp. 32-38).

A. Testimony.

Dr. Cochran's A.18 b)-d) deal with the generic issue of long-term nuclear waste management, with no direct reference to the specific environmental impacts of wastes resulting from operation of the CRBRP. Furthermore, A.18 d) also deals with the validity of Table S-3, 10 C.F.R. §51.20, as it relates to the "risk of radioactive releases from a permanent waste storage facility." Due to the length of A.18 b), c) and d), they are included as an attachment to this motion.

B. Reasons for Striking.

In its Special Prehearing Conference Memorandum and Order of April 6, 1976, the Board ruled that Intervenor's Contention 12, dealing with "the problem of disposal of nuclear wastes, and the problem of control of plutonium and prevention of its diversion and release into the environment," id. at 28, raised issues "already generic to existing plants", id. at 29, which were beyond the scope of the proceeding unless "these fuel cycle considerations raise concerns specific to the location or mode of operation of the CRBR facility itself." Id. A.18 b), c) and d) deal with the generic issue of waste management without identifying any specific impacts resulting from the location or mode of operation of the CRBRP.<sup>\*/</sup>

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\*/ In denying a Natural Resources Defense Council, Inc. petition for rulemaking regarding the feasibility of long-term storage or disposal of high level wastes, 42 Fed. Reg. 34391 (July 5, 1977) the Commission stated:

As part of the licensing process for an individual power reactor facility, the Commission does review the facility in question in order to assure that the design provides for safe methods for interim storage of spent nuclear fuel. But it is neither necessary nor reasonable for the Commission to insist on proof that a

(Continued)

Furthermore, since the testimony in A.18 d) draws no distinction between the waste management problems for the nuclear fuel cycle in general and CRBRP in particular, it constitutes a challenge to the validity of Table S-3. The Commission recently stated that "the Commission directs its Licensing and Appeal Boards to proceed in continued reliance on the Final S-3 rule until further order from the Commission . . . ." 47 Fed. Reg. 50591, 50593 (November 8, 1982). Table S-3 is a valid part of NRC regulations, which are not open for challenge in any licensing proceeding. See, Board's Special Prehearing Conference Memorandum and Order of April 6, 1976 at 10 (denial of contentions "as constituting a direct challenge to Commission regulations, which we are not empowered to consider.")

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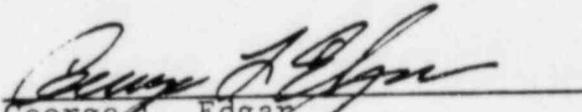
means of permanent waste disposal is on hand at the time reactor operation begins, so long as the Commission can be reasonably confident that permanent disposal (as distinguished from continued storage under surveillance) can be accomplished safely when it is likely to become necessary.

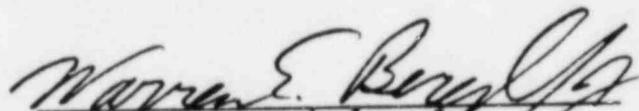
That denial was upheld in *Natural Resources Defense Council, Inc. v. Nuclear Regulatory Commission*, 582 F.2d 1000 (2nd Cir. 1978)

CONCLUSION.

For the reasons presented, the Applicants request the Board to strike those portions of Dr. Cochran's Testimony (Part III) designated, supra.

Respectfully submitted,

  
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Management Corporation

  
Warren E. Bergholz, Jr.  
Attorney for the  
Department of Energy

Dated: November 12, 1982

releases are a function of the concentrations of the various Pu isotopes.

Third, the environmental (and safeguards) effects associated with supplying CRBR fuel, including the first core and initial reloads, and recycling CRBR fuel can vary significantly depending upon the actual facilities that will be used.

The Staff's DSFES is inadequate in its failure to address any of these considerations.

Q.9: What is the basis for your view that there will not be adequate supplies of low-burnup plutonium and consequently the plutonium isotopic concentrations assumed by the Applicants and Staff cannot be met?

A.9: The Applicants and Staff have assumed that "the initial [CRBR fuel cycle] feed materials would consist of [fuel-grade] plutonium (obtained from DOE stockpiles) ..." (DSFES, p. D-4), and have assumed that the CRBR is operated on an open fuel cycle with the initial plutonium making only one pass through the reactor (Deposition of Staff witness Lowenberg, Oct. 12, 1982, pp. 8-10). But DOE Deputy Assistant Secretary for Nuclear Materials F. Charles Gilbert stated on March 25, 1981, that quantities of available materials in the fuel-grade inventory are reserved for Defense Programs. Gilbert wrote that "the 4

MT of processed plutonium in the fuel-grade inventory is reserved for authorized activities in both defense and non-defense programs," and "a significant portion of the plutonium in N Reactor spent fuel is reserved for Defense Programs" for use in blending. (Letter of F. C. Gilbert to Thomas B. Cochran, March 24, 1981.)

With the conversion of the N-reactor from fuel-grade plutonium (12% Pu-240) to weapon-grade plutonium (6% Pu-240) scheduled to have been completed in October 1982, DOE no longer is producing fuel-grade plutonium (DOE, "Hanford Accomplishments, Jan. 1981-Present," Aug. 24, 1982). DOE is currently blending plutonium from its fuel-grade plutonium stockpile with super-grade plutonium (3% Pu-240) produced at SRP to meet nuclear weapons requirements. Under current DOE plans, there will be little if any fuel-grade plutonium available for allocation to CRBR for its first core and first few reloads by the time these cores are to be fabricated, due to the higher priority placed on meeting the plutonium requirements of the Defense Programs' activities.

On September 9, 1982, Deputy Secretary of Energy W. Kenneth Davis and Under Secretary of State Richard T. Kennedy testified on the Reagan Plutonium Policy before the Subcommittee on Energy, Nuclear Proliferation and Governmental Processes of the Senate Government Affairs

Committee. The following exchanges took place:

Senator Glenn: Gentlemen, why do we need the breeder and reprocessing now? Why do we need new plutonium production?

Mr. Davis: Our prospective need for plutonium, which is some years off, has to be arranged sometime in the near future. We need a substantial amount to continue in operation our principal research facility, the Fast Flux Test Facility at Hanford, and for some of the other experimental facilities, and we will need a substantial amount of plutonium for the Clinch River Breeder fuel as it continues to operate.

What we are contemplating is the possibility of entering into contracts for plutonium, but the plutonium itself would not be delivered for many years.

Senator Glenn: Correct me if I'm wrong, but I don't see how the plutonium is going to be used, because my understanding is that Barnwell will produce between 12 to 15 tons of this material per year, and that we only have a need for one or two tons per year for the U.S. breeder program. I understand that currently we have adequate plutonium to fuel all the upcoming breeder R&D that we have scheduled right now.

What are we going to do with the output of Barnwell?

Mr. Kennedy: We do not have the plutonium needed for Clinch River, we do not have the plutonium needed for the follow-on fuel for FFTF.

Senator Glenn: What is the relationship between Barnwell and Clinch River? Is the Department's view that the Clinch River reactor shouldn't be built unless the Barnwell facility is also built?

Mr. Davis: The Barnwell facility has already been built by private industry.

Senator Glenn: Does one depend on the other?

Mr. Davis: Only in the sense that we will need to acquire the reactor-grade plutonium needed for Clinch River somewhere.

Senator Glenn: Do we not now have enough plutonium stockpiled now to run Clinch River if it is built?

Mr. Davis: No, sir. Not earmarked for Clinch River.

Senator Glenn: How much is required to fuel Clinch River?

Mr. Davis: Over a period of some years, I will have to get the exact numbers.

Senator Glenn: Is the figure that Barnwell will produce 12 to 15 tons a year; is that correct?

Mr. Davis: Barnwell at full operation probably would produce something in the order of 10 tons a year, not 15.

Senator Glenn: How much will Clinch River use?

Mr. Davis: Over the period we are looking at, to the year 2000, about 15 tons.

Senator Glenn: Fifteen tons between now and--

Mr. Davis: FFTF about 8 tons. We foresee a requirement in total of perhaps 20 to 25 tons.

Senator Glenn: My time is up but I would just say, Gordon Chipman, head of the Clinch Project, and Kermit Laughan, head of DOE's reprocessing office, told my staff explicitly Barnwell is not needed for Clinch River and that adequate plutonium is available.

Were they wrong?

Mr. Davis: We do not know exactly where we will get the plutonium for Clinch River and some of the follow-on activities. We could

get it from our military resources, but that doesn't seem to be a very good prospect if we are to meet our current Weapons Stockpile Memorandum requirements.

(Senate Governmental Affairs Transcripts for Sept. 9, 1982, after editing by DOE, pp. 44-50, emphasis added.)

In Mr. Davis's testimony above, he notes that DOE will need reactor-grade plutonium for CRBR. Reactor-grade plutonium is obtained from high-burnup spent fuel. By DOE definition, reactor-grade Pu contains an isotopic concentration of Pu-240 of 19% or greater.

From the above testimony, it is apparent that DOE now wishes to obtain the initial feed material for CRBR from Barnwell and that the feed is contemplated to be reactor-grade plutonium. I believe it is unlikely that Barnwell will be operated due to the lack of private interest in completing and operating this facility without a huge government subsidy, which is unlikely to be forthcoming. Furthermore, the alternative of obtaining plutonium from foreign sources, namely the UK, appears highly unlikely due to the controversy this proposal has generated in the UK.

With regard to the Barnwell alternative, there have been numerous reports in trade journals on the lack of interest in private ownership of the Barnwell plant. One of the present owners, Allied General, is not interested in completing the plant and plans to "shut it down"

whenever government funding runs out (Nucleonics Week, June 10, 1982, p. 10). A company official responding to a DOE plan for encouraging private ownership stated, "People don't go into the position of investing stockholders' money if it doesn't make sense" (ibid.). There are no reliable reports of other potential owners in private industry, and Bechtel and other potential investors are not interested in ownership themselves (ibid.).

Papers with tentative plans to encourage private ownership of Barnwell have been put forth by DOE and the Office of Science and Technology Policy (OSTP) (Nucleonics Week, June 3, 1981, p. 1; Inside Energy, Oct. 18, 1982, p. 1), but, according to press reports, there does not seem to be the remotest agreement within the government on how this is to be achieved. DOE's request for \$250 million in FY 1984 to subsidize Barnwell through the guaranteed purchase of plutonium from an operating plant is considered grossly insufficient by OSTP for convincing the private sector to get involved (Inside Energy, Oct. 18, 1982, p. 1). OSTP is reported to have suggested a subsidy of five times more, or \$1.25 billion, for the guaranteed plutonium purchase, but it has yet to make a formal recommendation (ibid.). There is no indication that Congress would be willing to appropriate this level of funding.

On the possibility of export of UK civil plutonium to the U.S. for the breeder program, British Under-Secretary of State for Energy John Moore emphatically announced to Commons on July 27, 1982, that there were "no further developments" and "no negotiations" following his original announcement of "approval in principle" on October 19, 1981 (Hansard, 19 Oct. 1981, c.79; 27 July 1982, c.438). Moore had stated on Dec. 21, 1981, that a US-UK agreement would probably take the form of a commercial contract between the Central Electricity Generating Board (CEGB) and DOE (Hansard, 21 Dec. 1981, c.732-739). Subsequently, strong opposition to the possible export of UK plutonium to the US emerged from individual employees of CEGB and from the Electrical Power Engineers' Association (The Times, April 29, 1982, p. 3). Finally, reports appeared after the end of April 1982 that the US had abandoned plans to buy or lease plutonium from the UK civil stockpile (Financial Times, London, May 6, 1982, p. 9).

In sum, there is no basis for assuming that there is sufficient low-burnup plutonium from the DOE fuel-grade stockpile or from civilian power reactor fuel to meet CRBR needs. Furthermore, there is no basis for assuming that the plutonium initially recovered at Barnwell, should that facility ever be operated, or obtained from alternative sources (other than the DOE stockpile) would have

concentrations of the controlling isotopes (Pu-238 and Pu-241) as low as the concentrations assumed by the Staff and Applicants.

Q.10: How is the hazard of plutonium affected by the origin of the plutonium fuel and the manner in which it is recycled?

A.10: In calculating the Site Suitability Source Term doses at the exclusion area and low population zone (LPZ) boundaries, the Staff assumed that the plutonium had the following isotopic concentrations (weight %):

1% Pu-238

74% Pu-239

20% Pu-240

5% Pu-241

0% Pu-242

(Staff Response to Interrogatory 23, 26th Set, July 27, 1982, p. 23; Tr-3128, Morgan.) While the basis for the choice of concentrations is not well documented, these values were apparently derived by working backwards from a calculation of total curie release made some five years ago, for the CRBR homogeneous core fueled with plutonium recovered from processing spent LWR fuel (Tr. 2346-47, Bell).

Dr. Morgan demonstrated that the Pu-238 and Pu-241 isotopes are controlling in terms of the bone surface

people will reside within 80 km of the site (DSFES, pp-21; DOE 1980b, Vol 2, p F.2). Applying this same population density within the 10 km radius implies there might initially be some 30,000 persons in this region, which is not part of the "accessible environment" as defined by EPA. The proposed EPA limits permit unlimited exposure to this population, for all times, and consequently the proposed EPA standards would not limit human health effects associated with CRBR waste operations to 10 persons (or 0.3/year).

b) Second, in light of the present status of the Federal efforts associated with HLW disposal, while it is theoretically possible to store HLW safely, I do not believe that there is currently any basis for high confidence that the radioactive waste will be safely sequestered. The basis for this view is set forth generally in NRDC testimony in the NRC's Waste Confidence Rulemaking (PR-50,51 (44 Fed. Reg. 61372)).

As but one further example of the many difficulties that remain unresolved, the first of three alternative HLW repository sites which DOE plans to characterize in preparation for licensing review by NRC, is Basalt site at the Hanford Reservation. Following a November 1981 trip report to the Basalt Waste Isolation Project, NRC consultants concluded that the DOE's forthcoming site

characterization report, when completed, may be inadequate, in part because

There are currently several widely different views on the general pattern of groundwater flow in the Pasco Basin....

It appears the five year hydrology test program will not result in sufficient data to answer basic questions about groundwater movement....

The conceptual repository design is inadequate because it ignores the consequences of the indicated high stress field,...

"The in situ test program that was discussed with NRC (i.e., Phase I of the Exploration Shaft), is insufficient to characterize the site at depth, determine site suitability, and determine design parameters for the repository."<sup>3/</sup>

c) Third, in light of the uncertainties associated with HLW disposal, the Staff's analysis is inadequate in its failure to discuss the full range of potential health effects associated with these uncertainties. M.J. Brown and E. Crouch (Health Physics 43, September 1982, pp. 345-354) have attempted to bound the potential health effects by examining two "extreme scenerios." Under one highly unlikely scenario involving a volcanic eruption at the repository site, Brown and Crouch estimated that the number of cancer doses from Sr-90 alone exceeded the

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<sup>3/</sup> Brooks, D.J., et al, "Visit to the Basalt Waste Isolation Project (BWIP) - Hernford, Washington, USNRC, Nov. 1981, pp. 1-2.

population of the U.S. The second scenario, which I find far more credible, involved the contamination of a municipal drinking water supply. For a containment time of 400 years and a leach time of 6300 years, the cancer risk (from all causes) was increased 25% (id.).

DOE analyzed the 70-year "whole-body" dose commitment from solution mining a 47,000 MTHM salt dome repository for human salt consumption (i.e., for table salt) 1000 years after closure and estimated such an event could result in  $1.6 \times 10^{-7}$  person-rem. (DOE, "FEIS, Management of Commercially Generated Radioactive Wastes," DOE/EIS-0046F, Vol. 1, pp. 5.89-5.92.) Prorating 1/100 of this dose to CRBR, the resulting 160,000 person-rem is 1000 times the whole body dose commitment assumed by the Staff for the entire CRBR fuel cycle.

I do not mean to imply that the probability of such events is large; rather these examples are only to suggest that the Staff's assumption that the health effects will be zero does not adequately reflect the uncertainties and in this regard also could be considered "extreme," but in the opposite direction.

d) Fourth, EPA and the U.S. Geological Survey ("USGS") have both expressed substantial reservations about the NRC's finding of no significant risk of radioactive releases from a permanent waste-storage facility. EPA,

for example, suggested that the "Table S-3" chart (from which some of the DSFES Table D.4 entries were derived), should be accompanied by a narrative statement emphasizing the uncertainties underlying the numerical entries, particularly for long-term waste storage:

A purely numerical table is, in fact, an implication of far greater certainty than is warranted by the facts. Clearly, for the time spans involved in presenting the impacts of certain radioactive effluents, there are environmental impacts difficult to quantify that require accompanying narrative.

EPA Response to NRDC's Proposed Questions of November 18, 1977, #2(d) at 1 (undated) (Table S-3 Rulemaking). These criticisms apply equally to the DSFES Appendix D discussion of HLW disposal, particularly Table D-4 (at p. D.7). A report by a panel of earth scientists, submitted to EPA, concluded that there are "extreme numerical uncertainties" attached to most of the factors bearing on the possibility of disruption of a waste repository. Report of Ad Hoc Panel of Earth Scientists, The State of Geological Knowledge Regarding Potential Transport of High-Level Radioactive Waste from Deep Continental Repositories, EPA/520/4-78-044, at 32 (June 1978).

Perhaps more significantly, the USGS -- the federal agency with the greatest technical expertise in geological matters -- concluded that "Table S-3 by itself clearly does not convey an appreciation of the risks involved in

geologic disposal of high-level radioactive wastes or the uncertainties involved in determining such risks." USGS Reponse to NRDC's (Table S-3 Rulemaking) follow-up questions of December 16, 1977, #1 at 1 (undated). Moreover, a later USGS report warned that "given the current state of our knowledge, the uncertainties associated with hot wastes that interact chemically and mechanically with the rock and fluid system appear high," and these uncertainties are compounded by "the lack of a method for determining the future rates of many [geological] events and processes." Geologic Disposal of High-Level Radioactive Wastes -- Earth Science Perspectives, USGS Circular 779 at 6, 11 (1978).

Indeed, two government reports -- one issued by NRC -- have cautioned that predictions about the performance or feasibility of a waste-storage facility are subject to considerable uncertainty. The "Report to the President by the Inter-Agency Review Group on Waste Management" ("IRG Report"), for example, pointed out that risk assessments "based on idealized repository characteristics ...are subject to significant uncertainties," and concluded that the "zero release of radionuclides cannot be assured." IRG Report, TID-29442, March, 1979, p. 45. Moreover, the Commission's own staff conceded:

There are still uncertainties in areas such as the effect of waste presence on repository

stability; the probabilities and consequences of intrusive acts by humans; the validity of data used in modeling studies; the design and regulatory actions needed to minimize possibilities of respository failure; projection of future societal habits and demography; and finally, the relative importance of various potential initiating events.

NUREG-0116, at 4-94.

Finally, recent events serve to highlight the persistence of uncertainty regarding the technical feasibility and safety of a long-term waste repository, as well as the institutional question whether an appropriate site can be selected and maintained. In the currently ongoing Waste Confidence proceeding, for example, the NRC has developed substantial evidence -- summarized in the Report of the NRC Working Group<sup>4/</sup> -- that uncertainty over these issues continues. There are significant questions about the ability of the Department of Energy ("DOE") to find a suitable repository site and to design and build an adequate facility. As DOE has candidly admitted:

Additional engineering development work remains to be done before safe waste disposal can actually be achieved...Until the [waste research and development] program is completed, there necessarily remains a degree of uncertainty regarding whether DOE will find the answer to questions still open and whether those answers, when found, will turn out as

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4/ U.S. Nuclear Regulatory Commission, Report on the Working Group on the Proposed Rule-making on the Storage and Disposal of Nuclear Wastes (January 29, 1981)

hoped for.

NRC Report, Introductory Statement at 7. Having identified twenty-six "major issues" still in contention, the Working Group has concluded that "there appear[s] to be a number of contingencies, both technological and institutional, on which the success and timeliness of waste disposal may hinge." NRC Report, Introductory Statement at 12.

In addition, other agencies continue to note significant uncertainties about the risk assessment models used by DOE. USGS, for example, has stated that any generic assessment that radioactive waste can be contained in a federal waste repository at acceptable levels of risk deserves only "limited credibility." NRC Report, Part 1.B at 17. USGS has also commented that any current determination of when a repository will be available is necessarily "imprecise and premature." Id. at 18. DOE, too, recognizes that "important gaps exist in knowledge regarding rock properties and responses under extreme conditions of temperature, stress, and radiation over long periods of time."

Q.19: Why do you believe the Staff's somatic and genetic risk estimators (DSFES, p. 5-20) are nonconservative?

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

In the Matter of  
UNITED STATES DEPARTMENT OF ENERGY  
PROJECT MANAGEMENT CORPORATION  
TENNESSEE VALLEY AUTHORITY  
(Clinch River Breeder Reactor Plant)

Docket No. 50-537

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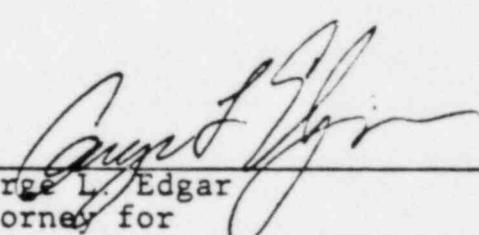
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DATED: November 12, 1982

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