Department of Energy
Washington, D.C. 20585

February 25, 1982

The Honorable Nunzio J. Palladino
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U.S. Nuclear Regulatory Commission
Washington, DC 20555

The Honorable Peter Bradford
Commissioner
U.S. Nuclear Regulatory Commission
Washington, DC 20555

The Honorable Victor Gilinsky
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U.S. Nuclear Regulatory Commission
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The Honorable John F. Ahearne
Commissioner
U.S. Nuclear Regulatory Commission
Washington, DC 20555

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

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

Gentlemen:

This is in response to the Commission's request that those with current responsibility within DOE for doing cost estimates for Mr. Bevill and his Committee examine and provide comments on the Applicants' estimates of the costs of delays in the Clinch River Breeder Reactor Plant (CRBRP) project. 1/ I am advised that the Department of Energy no longer provides cost analyses as part of the monthly report to Mr. Bevill and his Committee. In view of this and recent reorganizations within the Department, the Office of Policy, Planning and Analysis is the organization with the relevant responsibility and expertise for this review. The information provided herein was developed by and carries the endorsement of that Office and the Department of Energy.

We believe that the Applicants' submissions of January 18, 1982 and January 28, 1982 and those of Mr. Walker of Arthur Andersen on February 16, 1982 and February 23, 1982, provide one

1/ Transcript of February 16, 1982, NRC meeting at 201-204.

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appropriate method for evaluation of the cost of delay to the CRBRP. At the same time, we believe that the record has become confused as to the relationships between the several elements of these analyses, and thus we welcome the opportunity to place these elements in perspective.

First, we should emphasize that the Applicants' analyses have attempted to measure the cost of an assumed one year delay. As of January 18, 1982, the NRC Staff's best estimate for issuance of an LWA was September of 1983. A comparison of this to a March, 1982 grant of the 50.12 request yielded a 15 month schedular savings. To account for uncertainty, the Applicants then assumed a tolerance of minus zero, plus one year, and a resultant 15-27 month range of potential schedular savings. This was, in turn, conservatively reduced to a range of 12-24 months as the potential time savings associated with grant of the Section 50.12 request. The NRC Staff's more recent best estimate of a one year savings vis-a-vis its revised LWA schedule remains consistent with the Applicants' 12-24 month schedular savings estimate. We believe, therefore, that the estimates of delay cost for a one year delay represent a cost at the lowest end of the expected range, and that the actual costs would range up to twice the values estimated for a one year delay.

Second, we should emphasize that the Applicants' cost estimates have included three distinct perspectives on the cost of delay, all of which have merit in their own right and all of which should be considered by the Commission in its evaluation of the Section 50.12 (b)(4) public interest factor. Likewise, none can or should be excluded in a fair analysis of the costs of delay to the project. In what follows, I will summarize the Department's views as to each of these three perspectives on the cost of delay: a) the appropriations or fiscal perspective; b) the economic or resource perspective; and c) the financial perspective.

A. The Appropriations or Fiscal Perspective

The Clinch River Breeder Reactor Project is funded through Congressional appropriations and thus operates with, and all costs are estimated based upon, year of expenditure dollars. Due to the delay during the past five years, inflation has already increased project costs by nearly $800 million. An additional delay at this time will further increase the project cost and ultimately the cost to the taxpayers due to inflation. It is small solace to the Congress or to the Nation's taxpayer to suggest, based on economic theory, that inflation simply does not matter.

Each year, as Congress debates the funding to be appropriated to the project, the legislator's viewpoint for the decision will be in terms of inflated dollars. The cost of the project to date is always expressed in inflated dollars, not constant dollars. In the future, the postmortem on the final cost of the project will inevitably be discussed only in terms of inflated 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. 2/ These have been estimated to be: $136 million in cost inflation; $42 million in management costs; 3/ and higher revenues (a net credit) of $49 million. 4/ This results in a net total of $129 million in increased appropriations over the life of the project.

These appropriations costs, however, are merely the immediately quantifiable costs arising in the appropriations perspective. In this context, the more important, if not decisive qualitative costs of the one year delay are: 1) the delay in obtaining the informational benefits from this R&D project; 2) the increased likelihood that the project will be placed in jeopardy as to future appropriations; and 3) the adverse effect upon the Congress' intention that the project be expeditiously completed.

B. The Economic or Resource Perspective

In order to minimize confusion regarding the elements of delay costs, it is necessary to identify the distinction between economic or resource costs on one hand, and financial costs on the other. Economic costs measure the total burden upon the productive capacity of the national economy. Financial costs measure the relative burden upon individual parties and provide a useful perspective when considering individuals, firms or governments as operating entities. Thus, while in a given case, past expenditures may have no economic cost, the individual, firm or government making those expenditures may sustain a real financial cost because capital is tied up unproductively.

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

2/ Applicants' Submission of January 28, 1982, Chart A.

3/ Applicants' Submission of January 18, 1982 at 77.

4/ Applicants' Submission of January 28, 1982, Chart C.

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. 5/

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. We believe that the $20 million cost more closely approximates the real economic cost to the project. 6/

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 the following quantifiable economic costs:

	Present Worth
Management Costs	$38 million
Deferred Revenues	$20 million
Savings	($30 million)
Total Quantifiable Economic Costs	$28 million

The $28 million quantifiable cost of delay only represents a portion of the loss in terms of economic or resource cost. The most important cost due to the delay is the cost associated with the one year deferral of the project's R&D informational benefits. Unfortunately, acceptable methods for quantifying this cost do not exist.

The primary project objective is to acquire these informational benefits, not the sale of electricity. Thus, the economic value of the deferred information must surely exceed the $20 million cost due to deferred revenues from the sale of electricity.

5/ At the February 16, 1982, Commission meeting, Applicants estimated that the effect of discounting would be to decrease management costs by about $11 million. A more precise analysis contained in the Arthur Andersen & Co. letter of February 23, 1982, shows that this effect is significantly less of a decrease. In particular, it was not necessary to discount Project Office or Stone and Webster management costs. The costs for both of these groups were already discounted in calculating the anticipated savings due to delay. After appropriate discounting, cost of management during delay on a net worth basis is $38 million per year.

6/ See Komanoff statement attached as Tab A to NRDC's January 18, 1982 comments. See also NRC transcript of February 16, 1982 meeting at 143.

We believe the economic cost of the deferred information to be several times the value of deferred electricity revenue.

C. Financial Cost Perspective 7/

From a financial cost perspective, a delay in the project will result in substantially increased costs. By analogy to commercial power or industrial plants, the effect of a one year delay in project completion will result in the capitalization of an additional 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. As with the appropriations and economic perspectives, these costs are real and meaningful in their own right and context.

In considering financial costs, it is often necessary to consider the present worth of cost differences between alternative project plans. The following table considers both actual dollars and the value of those dollars on a present worth basis.

Effect of 1-year delay	Actual Dollars	Present Worth
Inflation	$136 million 8/	($30 million)
Revenues	($49 million) 9/	$20 million
Management	$ 42 million 10/	$38 million
Interest	$737 million 11/	$190 million
Total Financial Costs	$866 million	$218 million

In summary, the costs of a one year delay in the CRBRP have been assessed from three separate, but independently valid perspectives. In each case, the quantifiable costs of a one year delay are real, substantial, and relevant to the Commission's determination in regard to the Section 50.12(b)(4) public interest factor. Further, those costs considered by the Commission must include not only the quantifiable monetary costs, but also the unquantifiable and equally important delay costs; namely, those

7/ The financial cost perspective is discussed more fully in the Arthur Andersen & Co. submission of February 23, 1982.

8/ Applicants' Submission of January 28, 1982, Chart A.

9/ Applicants' Submission of January 28, 1982, Chart C.

10/ Applicants' Submission of January 18, 1982 at 77.

11/ Arthur Andersen & Co. letter of February 23, 1982, Exhibit II.

resulting from: a) a deferral of informational benefits, b) the increased likelihood that the projects's success will be placed in jeopardy, and c) contravention of Congressional intent in regard to expeditious project completion.

The record before the Commission shows no disputes as to environmental issues. Such disputes as may exist have revolved around the cost of delay. If, however, those costs are properly distinguished and viewed in the perspective here presented, there is little room for dispute. We submit that the costs of delay here presented are both real and substantial, and that compelling public interest considerations support the Section 50.12 request. Accordingly, we again urge the Commission to grant the request.

Sincerely yours,

W. Kenneth Davis

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