

CLINCH RIVER: THE SST OF THE EIGHTIES

INTRODUCTION

The Clinch River Breeder Reactor may be the SST of the 1980s. Like its aviation counterpart, the economic assumptions underlying Clinch River's conception have proved greatly at odds with the facts, leaving little prospect that the project will ever be economically viable. As a result, the debate surrounding the project has become more concerned with issues of national pride and symbolism than its legitimate commercial potential. By attempting to force construction of a relatively primitive design, the Clinch River project may actually undermine faith in the very technology it seeks to promote.

BACKGROUND

The Clinch River Breeder was born out of fears in the 1960s that uranium prices would skyrocket in the 1980s, as demand for nuclear fuel supposedly would exceed rapidly projected uranium supplies. These fears were based on the belief that electricity demand would continue growing rapidly through the end of this century and be largely serviced in conventional light water reactors (LWRs).

The expected increases, however, did not materialize. Instead of the 1500 gigawatts of installed nuclear capacity that the Atomic Energy Commission believed would be on line by the year 2000, current Commerce Department estimates place the figure at only 105 gigawatts--about one-fifteenth the earlier number. Electricity demand has flagged far behind the enthusiastic projections of the 1960s, actually dropping 1.9 percent in 1982, marking the first such decline since the end of the Second World War.

At the same time, new uranium finds in Australia, Canada and the United States have banished fears of imminent resource exhaustion. Proved and potential U.S. reserves alone of uranium ore have doubled, and there is so much stored above the ground that the Department of Energy estimates it will take fifteen years to reduce inventories to proper market levels.

While neither electricity demand nor uranium prices have risen at anywhere near the rates projected in the 1960s, the same cannot be said for the price of Clinch River. Breeders are far more complex than LWRs, but it was assumed that rising fuel costs would make up the difference in cost. No one, however, anticipated the cost overruns of the Clinch River project.

Originally estimated at costing \$400 million, the breeder project's price has soared to \$8.8 billion. Even this figure probably understates the final tab which could reach \$10 billion.

Further, since the industry contribution to Clinch River's funding was capped at \$257 million in 1972, the full burden of any future overrun will be borne by the taxpayer.

According to figures from the Department of Energy, the General Accounting Office and Congressional Research Service, it is unlikely that even a full-scale breeder will be economic during the next four decades. It may be this fact, which clearly refutes any economic justification for continuing the project, that has led Clinch River's advocates to use other lines of argument to advance their view. On close examination, however, the non-economic arguments too fail to make a case for continued funding.

One frequently voiced view is that without Clinch River, there will be no U.S. breeder. This is simply untrue. The Base Line Breeder Program, which unlike Clinch River, actually is a research and development effort does not depend on Clinch River funding. This program includes the Fast Flux Test Facility, the world's newest experimental breeder.

Another strawman frequently raised is that it would cost as much to cancel the project as to complete it. Again, this is untrue. Cancellation would only entail outlays of under \$50 million according to House Science and Technology Committee estimates. Finally, it has been often alleged that support of Clinch River is a "litmus test" of support for nuclear power. This is nonsense. Widely-respected scientists as Edward Teller question the value of the project. The suggestion that such criticisms somehow indicate an anti-nuclear bias are merely intended to divert attention from the project's economic realities.

CONCLUSION

At a time when the Administration is wrestling with budget deficits that have soared past the hundred billion dollar mark, Clinch River is simply a luxury the nation can ill-afford. Its completion cost has already exceeded twenty times the original estimate--and could go higher. This compares with a shut-down cost of under \$50 million. From a technological standpoint there is little to be learned from completion, and much could be lost due to diversion of funds from more worthy research efforts. Most important, the pressing need for a breeder which was once perceived, no longer exists, and is not expected to exist in the near future. In short, there is no valid reason to continue funding the Clinch River Breeder and more than ample reason funding should cease.

Henry Sokolski
Visiting Scholar

For further information see:

- 1 R. W. Hardie and G. R. Thayer, Analysis of Nuclear Power Economics, Los Alamos Scientific Laboratory, May 1981, LA-8899-MS.
- 2 Richard Speier, "General Science; Space; and Technology" in Agenda For Progress (Washington, D.C.: The Heritage Foundation, 1981).
- 3 Henry Sokolski, "DOE's Extended Burn-Up Program: The Good Atom Misunderstood," Heritage Foundation Issue Bulletin #79, March 5, 1982.
- 4 "Surplus Capacity, Not Foreign Competition, Root of Uranium Industry's Woes," Inside Energy, March 20, 1982.
- 6 Georges A. Vendryes, "Super-Phoenix, A Full-Scale Breeder Reactor," Scientific American, March 1977.