
AEC on Impact of "Breeder Economy"

The Atomic Energy Commission (AEC) has released a draft environmental statement on the liquid metal fast breeder reactor (LMFBR) program predicting that full-scale use of breeder reactors would have no significant adverse effect on the environment and would meet environmental quality and safety standards.

This impact statement is unusual because it deals not with a single project, but with what AEC officials call a "fully developed breeder economy." The AEC study was ordered last June by a U.S. Court of Appeals ruling in a suit brought by the Scientists Institute for Public Information asking for an overall impact statement on the LMFBR program (*Science*, 29 June 1973).

According to the AEC, the draft statement, published in five parts and approximately 2200 pages, required 50 man-years of work and cost \$2 million. It is meant to examine the full effects on the environment of the operation of large fast breeder reactors (the forecast is for 400 breeder plants in service by the year 2000) and looks at the whole cycle from fuel fabrication to waste disposal.

What is perhaps most important about the draft statement is that it makes available in detail the assumptions and analyses on which the AEC is basing its program. The AEC's cost-benefit studies, for example, estimate a saving of \$50 billion from the LMFBR project by 2020.

The statement, which essentially finds no major technical, economic, or environmental obstacles in the path of the LMFBR program, is unlikely to go unchallenged.

It is sure to be noted, for example, that the date for commercial acceptance of the breeder by power companies has slipped to 1987 from the early part of the decade and that cost estimates for the federal share of the project are up sharply. Perhaps more important, the AEC was expected not only to elucidate the environmental impact of the breeders, but also to appraise alternative technologies. Some critics will probably argue that the

statement's authors take too pessimistic a view of the supply and cost of enriched uranium fuel for other types of reactors in the 1980's and hence make too strong a case for the need for rapid development of the breeder. The cost-benefit figures are also likely to come under heavy scrutiny.

The impact statement largely discounts the possibility of serious accidents occurring during either the operation of breeder reactors or the shipping of fuel. Because acceptance of the final reactor design still lies in the future and because such large quantities of nuclear fuel would be shipped when breeder plants were in operation in force, there may be doubts that the safety problems are insignificant. There is a potential security problem as well. Recently there have been suggestions that small "nonnuclear" countries might use the plutonium which breeders produce to make nuclear weapons or even that terrorists might seize fuel and concoct crude fission bombs.

Before the AEC completes a final impact statement, comments on the draft statement will be considered. The next step is a public hearing to be held at the AEC's Germantown headquarters beginning on 24 April. Environmental and consumer protection groups are known to be mustering arguments. And because of the energy shortage, the impact statement and the discussion of it that is beginning is certain to have a more attentive audience in federal agencies such as the Office of Management and Budget and the new energy office.—J.W.

Well-Being of Americans Measured by OMB Study

Following the lead of several other countries, chiefly Great Britain, the United States has brought forth its first report attempting to quantify the sum of human happiness within its borders.

*Social Indicators, 1973** is the work of statisticians in the Office of Management and Budget (OMB) who have labored more than 4 years to bring

* Copies are available for \$7.80 each from the U.S. Government Printing Office, Washington, D.C. 20402, stock No. 0324-00256.

together data they regard as the most revealing of how Americans are faring when it comes to getting what it is assumed everyone wants: health, long life, nice job, nice living conditions, and freedom from crime.

With the outstanding exception of the rise in crime, life seems to have been improving for everyone except black males. They have the highest death rate, the highest unemployment rate, and the highest rate of admission to mental hospitals.

Social Indicators goes beyond objective measurements in some instances to include people's own perceptions of their lot. Surprisingly enough, some 90 percent of the individuals sampled were reasonably satisfied with their jobs, and 84 percent feel they have access to good medical care if they need it.

The report is mainly composed of brightly colored and clearly presented charts and graphs devoted to eight areas: health, public safety, education, employment, income, housing, leisure and recreation, and population. It covers a great range. One can find out, for example, how many days a year people go bird watching (60 days per bird watcher), how much TV they absorb (the set is on 6 hours a day in the average household), what occupation has the greatest injury rate (coal mining), and what most people die of and when (males overwhelmingly die from accidents up to the age of 44, then heart disease moves into the number one spot).

According to Robert Parke of the Social Science Research Council, which in February held a symposium on the report, the document is mainly for informational use. Statisticians already know what is going on in their particular fields: *Social Indicators* brings them all together for a wide-angle statistical look at American society and civilization.

The compiling of social indicators parallel to those that exist for business and economics is a relatively new undertaking. The British recently issued their fourth annual report, and the Japanese, French, and West Germans are engaged in similar endeavors. The OMB effort will be ongoing, with the next report scheduled to coincide more or less with the bicentennial—C.H.