

Power struggle

Toward the end of World War II homefront morale was regaled with comic books and Sunday supplements depicting the World of Tomorrow that was supposed to come after the war. A major feature of that plastic and chromium environment was limitless electric power produced without smoke. Among the knowledgeable there were two prime candidates to be the sources of that power: nuclear fission and nuclear fusion.

Twenty-five years have gone by, and only a modest start toward the World of Tomorrow has been made. There are a few fission reactors producing power in the world, but their operation is not as economical as the enthusiasts of 1945 hoped, and finding sites for new ones is difficult to impossible because nobody wants one in his backyard. The best odds on when fusion will come on line quote sometime around 2000. Meanwhile smoke hangs over the landscape.

To fill the gap in time and power production, the U.S. Atomic Energy Commission now proposes to undertake the development of fast breeder reactors. Breeder reactors produce more fuel than they consume, and would thus make much more economical operation of the reactor business possible. Many people see them as an ideal interim step for use until fusion becomes important. One of these is the President of the United States. In a special message on energy that he sent to the Capitol last week, he asked Congress to appropriate \$77 million beyond what had already been requested for fiscal 1972 for the breeder-reactor program.

Even before the President acted, proponents of breeder reactors had run into opposition. A resurgent respect for the natural environment now questions the progressive technologization of life that visionaries of 1945 took for granted. Breeder reactors are among the modern artifacts that ecologists consider dubious and possibly detrimental.

An organization called Scientists' Institute for Public Information has filed suit against the AEC to compel the agency to produce a study of the environmental impact of the breeder-reactor program that the Environmental Protection Act requires. The AEC has until late July to answer the suit and so far AEC spokesmen are not commenting on it, but the Commission seems to be proceeding as if it were required to issue such a statement only when it decides actually to build a breeder reactor somewhere.

One reason for SIPI's action is that the environmentalists see dangers in the

breeder that ordinary reactors do not have. A SIPI statement suggests that if some accident resulted in the compaction of the plutonium fuel that breeders use, a critical mass might be reached and a nuclear explosion result. AEC spokesmen deny such a possibility and say that the Commission has always proceeded with utmost regard for public health and safety.

Another danger has the flavor of a James Bond novel. A breeder-reactor economy would have a lot of plutonium around and in transit from place to place. "I am not allowed to tell you how much plutonium it takes to make a bomb," says Dr. James Tuck of Los Alamos Scientific Laboratory, "but it is not very much." Suppose some gang of criminals got hold of some, he says, and put together something. . . . Nevertheless, Dr. Tuck, who has been engaged in fusion research for 20 years, favors building breeder reactors *ad interim*.

According to SIPI spokesmen concern over particular alleged dangers of breeders was not the main reason for their action. What they wish to do is halt what many see as a Gadarene procession to more and more reactors and force a public discussion of the alternatives, such as nonpolluting use of fossil fuels, before a great deal of capital is committed to the breeder program. Once the program is funded, its momentum will be hard to resist.

Many people are beginning to think that fossil fuels will provide most of the world's power needs for a long time to come. There is not much oil or gas in reserve, says Dr. Dean Abrahamson of the University of Minnesota, but there is plenty of coal. He would like to see serious consideration of non-polluting means of using it. (One of these, coal gasification, is in the President's energy request for \$30 million, \$20 million in public, \$10 million in private money. The President also requests an additional \$15 million to make a total of \$27 million for research in controlling sulfur oxides.)

Environmentalists would also like to see public debate on the uses of power. Many feel that power companies have oversold electricity. Dr. Abrahamson cites electrical home heating and bright street lighting as examples of extravagant use. But he admits there would be great psychological difficulty in persuading people to give up power uses they are accustomed to.

Meanwhile the President's proposals mean an increase of \$27 million on top of \$103 million already requested for research in breeder-reactor technology and \$50 million added to \$50 million for building a demonstration plant. The AEC hopes to invite proposals by midsummer and to have a plant running by the mid-1970's □

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