

stored in whole or in part in later conference with the House. But the Grand Tour is a bagatelle compared with NASA's ambitions for the shuttle.

In staking its future on the shuttle, perhaps a necessary move, NASA has made a devil's pact with the military, ignored the advice of the scientific community and risked antagonizing its supporters in Congress by sacrificing peripheral projects. The gamble is a dangerous one, but at least if it fails NASA will end with a bang, not a whimper.

#### ENERGY POLICY

### Power Without Pollution

THE White House announced last week a package of proposals to increase the power available in the United States and at the same time a number of regulations and declarations of intent that may avert the criticism of those who hold that power means pollution. The most conspicuous beneficiary of President Nixon's power package will be the research and development programme of the Atomic Energy Commission which may ultimately lead to a commercially viable fast breeder reactor—the difficulties so far have been not technical but administrative. The other chief contender for extra government support, the thermonuclear fusion programme, will plainly have to take a back seat for the time being—the support in this year's budget amounts to \$27 million, much less than the enthusiasts would ask for but probably enough to keep the pot bubbling until the late 1990s, when fusion reactors may become working instruments.

The immediate cause of President Nixon's new programme, which seems to have been given not merely the blessing but the active support of Dr Edward David, the Science Adviser at the White House, is the impending shortage of energy in the United States. In spite of the economic recession of the past year, the demand for energy has grown steadily and, since 1967, at a pace that has taken the prophets by surprise. Among the symptoms of shortage in the past few weeks have been the mutterings by Consolidated Edison in New York that the city will have to take steps to halt the growth of its population if the company is to be able to maintain a supply of electricity to Manhattan.

Under the new proposals, expenditure in the coming financial year on the development of fast breeder reactors will be increased by \$27 million, an increase of some 25 per cent. Although the President asks that the culmination of the programme should be "the construction of a demonstration plant of some 300 to 500 MW", he also says

that there are "major technical and financial obstacles" to be surmounted. It has been known for some time that most of the obstacles are financial. Too many of the companies in the field are aware of how badly they have burned their fingers with the now conventional types of nuclear reactor, and some of them would like the chance to make a profit on the designs they are now bringing into commission before embarking on newer and more hazardous ventures. This is why the new power programme also allows for an extra \$50 million of Federal money to be spent on the demonstration plant, intended as a collaboration between a utility company, one or more manufacturers and the government in which the utility will pay the going rate for whatever electricity is produced and the AEC will commission the manufacturers to build on a fixed-price contract.

The provisions for extra help for the breeder reactor programme will be widely interpreted as a success for the AEC's insistence in the past year that breeder reactors would be an essential part of the power supply system in the United States in the 1980s but that it would necessarily be a long job to bring this development to fruition. In this respect, the US AEC is much less optimistic than its equivalents elsewhere about the ease with which breeder reactors can be constructed. President Nixon last week went out of his way to say that breeder reactors could be not merely cheap but also proof against the discharge of radioactivity or of waste heat and even that "the breeder reactor will soon become a key element in the national fight against air and water pollution".

The other components of the package announced on June 4 are a programme of research on coal gasification as well as one for coal liquefaction. Magnetohydrodynamic power cycles are to be investigated more fully, as are methods of transporting electricity in bulk by cables underground. Even solar energy will get some extra support, as will controlled thermonuclear research—an extra \$2 million in the current financial year.

Administratively, the United States Government can do a great deal by licensing the exploitation of natural resources on land which it controls and to this end it has agreed to the experimental leasing of a tract of oil shale in the Rockies; ultimately the United States might expect to obtain 50,000 million tons of petroleum from its own oil shale deposits. The government is also planning to lease more territory for exploitation in the continental shelf and also to lease rights for the exploitation of geothermal energy.

How is all this to be accomplished?

It is intended to set up a new Department of Natural Resources to coordinate research, development and exploitation of energy resources. The intention is that the Atomic Energy Commission should remain intact but that the planning of its research should again be coordinated by the Department of Natural Resources.

#### INTERNATIONAL COMPETITION

### Writing to Win

WORKING scientists with a book inside them and competitive instincts now have the choice of two writing tournaments to enter. In addition to the Adam Hilger Prize for 1972, announced this year (see *Nature*, February 5, xiii; 1971) Butterworths of London propose to celebrate a quarter century of science publishing by awarding a scientific fellowship for authors. The winners will receive a cash prize—£500 from Adam Hilger or £750 from Butterworths—and will have their manuscripts published. The route to the top in each competition is quite different, however, and potential competitors would do well to study the form carefully before placing their bets.

Adam Hilger Ltd, a subsidiary of Rank Precision Industries, is asking for previously unpublished books or monographs, in English, but on topics restricted to physical and chemical aspects of astronomy or geology and the analytical aspects of pollution. The adjudicating panel will consist of Professor H. Kaiser, Dortmund, Germany, Professor L. H. Ahrens, Capetown, South Africa, and Professor A. J. Meadows, Leicester, England. Entrants will have a reasonable time to complete their manuscripts; for the 1972 prize, entries must be received before November 1972, and the judges will give their decision early in 1973.

On the other hand, Butterworths are asking only for synopses of the proposed manuscript and the winner will be chosen on this basis. Entries must be submitted by October 1971, and the judges will be Professor Sir Harold Thompson, Oxford, Professor D. H. R. Barton, London, Mr J. A. Charles, Cambridge, Professor F. C. Frank, Bristol, and Professor J. L. Harley, Oxford. They will make their decision in the same month. Unlike Hilger's, Butterworths will accept entries on any science topic and, with an eye on sales, are anxious that prospective authors should not pick too erudite a title.

Literary competitions of this kind are a new venture for both companies and indeed for British science publishers in general. Butterworths are anxious to establish their competition on an annual basis, and Hilger's on a two-yearly schedule.