

proper balancing of considerations will be difficult. In short, "technological advances are . . . capital investments and, as such, once brought to a stage of commercial feasibility, the investment in their development acts to compel their application". And, perhaps more important, by the time the breeder has reached the point of commercial feasibility, other options would be foreclosed.

Critics of the breeder reactor have long maintained that the Administration is sinking money into the project at the expense of other approaches, such as geothermal energy, solar power or controlled thermonuclear fusion.

They will thus use the court decision to stimulate a public debate about such alternative sources of energy, for NEPA specifies that environmental impact statements must consider alternative programmes.

Shortly after the court decision was handed down, Dr Dixie Lee Ray, the new AEC chairman, announced that it would not be appealed to the Supreme Court. The commission expects, however, that it will take several months to prepare the impact statement.

The court's decision has other implications outside the breeder reactor programme, and it could well prove to be one more nail in the coffin of the Plowshare Programme. Judge Wright's opinion essentially states that environmental impact statements for entire programmes must be written at the pilot plant stage. It thus seems to imply that if the AEC intends to follow up the recent Rio Blanco explosion, which was designed to test the feasibility of using nuclear explosions to extract natural gas in deep deposits in Colorado (see *Nature*, 241, 494; 1973), it will have to outline the possible environmental consequences of complete commercial exploitation of the gas deposits. That would entail several thousand explosions, and opponents of the project are confident that when all the details are spelled out they will create devastating opposition.

As for the resignation of Mr Shaw, he is known to have been considerably upset by a recent reshuffle of the AEC bureaucracy which removed safety research and development from his jurisdiction and placed it in a division on its own (see *Nature*, 243, 182; 1973). The decision to comply with the appeals court ruling instead of taking it to the Supreme Court was reported to be the last straw, and he decided to quit.

A powerful administrator who has incurred the wrath of the AEC's critics, Shaw has been accused in the past of paying insufficient attention to research that casts doubts on reactor safety. He has ruled the division of reactor development with an iron hand, and in so doing has won the approval of the Joint Committee on Atomic Energy because of his powerful influence in the development of nuclear power. His departure,

coupled with the new arrangements for safety research, may help to assuage some of the fears of the critics of nuclear power.

In moving safety research out of Shaw's division and also in deciding not to contest the appeals court decision, Dr Ray has considerably strengthened her control over the agency. She has also established her independence from the Joint Committee—which has consistently supported development of nuclear power—and incurred the displeasure of some key members, notably Chet Hollifield, who are upset about the recent events.

NUTRITION

Protein Shortage

from a Correspondent

THE Protein Advisory Group of the United Nations System called for urgent action to meet the growing world shortage of protein at its twenty-first meeting held in New York earlier this month. The group recommended:

- The implementation of the coordinated national food reserve policies proposed by FAO.
- A global approach to world fishery management.
- Research on enhancing animal productivity and improving the yield of legumes.
- Developed countries to provide additional assistance to developing countries to help expand food production, by the provision of fertilizers, plant, equipment, etc.
- Substitution of vegetable proteins for animal proteins by, for instance, the utilization of meat-like analogues and milk substitutes.
- The development by governments of food distribution systems which ensure the supply of basic food to meet the needs of vulnerable groups.

The group's recommendations came after Mr Lester Brown of the Overseas Development Council, Washington DC, had pointed out that historically the global food situation has been largely discussed as a population and food supply problem. Now, however, rising affluence is a new claimant on world food resources. Four-fifths of the annual increase in world population occurs in poor countries, which are short of employment as well as food; in these countries the *per capita* availability of grain averages about 190 kilograms a year, most of which is consumed by people. In contrast almost one ton of grain is consumed per head of the population of the United States and Canada, but only 70 kilograms are consumed by people, the rest being used for animal production.

AIR POLLUTION

Setback for the EPA

THE Supreme Court last week ruled that much of the Environmental Protection Agency's strategy for cleaning up air pollution is illegal. The ruling, which is certain to lead to more court action, instructs the EPA to prevent state governments from allowing air quality to deteriorate significantly below present levels. It means that the agency must alter its approach to curbing air pollution.

The basis of the court case is the Clean Air Act, which lays down specific air quality standards that must be met across the United States. The EPA had approved plans drawn up by state governments for complying with the act, which allow the air to deteriorate in quality in regions where the standards are already being met, provided that it continues to stay below those standards. But the Sierra Club last year took the EPA to court, arguing that the Clean Air Act does not allow deterioration of present air quality. It won its case in a lower court in June last year, it was upheld by a court of appeals, and last week the Supreme Court was evenly divided on the issue, which has the effect of affirming the lower court ruling.

The EPA, backed by several industrial and commercial groups and some state governments, argued that unless some deterioration is allowed in air quality, there can be no industrial or population expansion in areas which have pristine air, and there also can be no relocation of industry outside the smog-ridden cities.

There is, however, some leeway in complying with the court decision, because the lower court prohibits only "significant" deterioration in air quality, without specifying exactly what significant means. The EPA is thus considering two alternative approaches. Either it will go ahead and approve state plans which would still allow deterioration, but at a level which the agency considers insignificant. That course would almost certainly lead to fresh court action in areas where environmentalists do not agree with the EPA's definition of significant. Alternatively, the agency is considering agreeing to state plans which specify that sources of pollution should use the best available technology to clean up their output of pollutants.

It seems likely that the agency will adopt the second approach, in which case it may have a difficult time arguing in court that it is preventing significant deterioration, and instead of fighting over a few areas, it will again be involved in litigation over the entire cleanup effort. It will keep the courts busy.