

in receipts and £45.3 million was supplied by parliamentary grant. During the current year, however, net receipts are predicted to be lower at £37.9 million, the drop resulting chiefly from the fact that the final Defence Settlement payment of £19.4 million was made last year. The predicted total expenditure is also less this year and the shortfall to be made good by parliament will amount to only £4.3 million more than was paid last year.

The authority spent £46.6 million on reactor research and development during 1971-72, £4.7 million more than in the previous year. The increase came chiefly in expenditure on the fast reactor system which rose from £26.3 million to £30.2 million. The cost of other research carried out by the authority amounted to £61.6 million, £4.1 million more than in 1970-71.

In 1970 it was planned that the first fast reactor commercial station would be operational in 1974, but in the report the authority says that a "somewhat longer timetable" is now likely. This delay stems from a decision taken after the initial plan was published to develop the first station to "a stage at which it will be suitable for replication". The actual date on which the first fast reactor will become operational will, according to the report, be dictated by the performance of the prototype fast reactor during its first year of operation. But the authority reiterates its faith in the fast reactor, and during the past year it has carried out detailed estimates on the cost and performance of thermal and fast reactors which justifies continued development.

Nuclear fusion and plasma research last year was financed to the tune of £4.4 million, £0.3 million more than in 1970-71. But the authority's programme at the Culham Laboratory continues to diminish as it has done since 1967. But in spite of the decreased financial support in real terms, the authority is confident "that the conditions needed for controlled fusion reactions can be attained".

The authority sees the future of fusion research on an international rather than on a national basis, and it points out that the arrangement between Euratom and Culham, set up in June 1971, has been successful. Under this arrangement Euratom contributed \$46.5 million towards a \$180 million fusion programme which incorporates the work of all the fusion laboratories within the European Economic Community. With Culham already partly involved in international fusion work, the authority feels that some kind of contract of association is needed between the authority and Euratom. Preliminary discussions about this have already taken place. The authority boldly states that such a contract would

provide the framework in which to establish a European project leading to fusion power for western Europe in the 21st century.

WATER RESOURCES

Fly in the Ointment

BRITAIN'S rivers are getting cleaner. The latest version of the River Pollution Survey which is to be published shortly will reveal that one mile in ten of the rivers that were classified as heavily polluted two years ago are now cleaner than they were, and that 77.5 per cent of non-tidal rivers are now free from pollution, compared with 72 per cent in the late 1950s. These figures were disclosed by Mr Eldon Griffiths, Under-Secretary of State at the Department of the Environment, when he opened a conference on the management of national and regional water resources in London this week. The figures, Mr Griffiths said, represent the overall picture, and some rivers have deteriorated; but for every mile of river that has become more polluted, six miles are now cleaner than they used to be.

Mr Griffiths went on to emphasize that the details of the government's plans to reorganize Britain's water industry have not been settled although the government is adamant that "henceforth the whole water cycle must be, and will be, managed as a whole". The full discussion that has followed the circulation of consultation documents on the proposed changes has led to changes in the government's attitude to some of its proposals, Mr Griffiths said, largely in the relationship between the ten new regional water authorities (RWAs) and local government.

But others at the conference clearly felt that, while the proposal to replace the existing 29 river authorities and myriad smaller bodies concerned with drainage, sewerage and recreation with ten large RWAs is a sound one, the absence of a strong central body could prove a serious weakness in the new system. Under the new proposals, the Water Resources Board will cease to exist, and the central body will be known as the National Water Council but will have no executive powers. Planning will be run by a Central Water Planning Unit within the Department of the Environment, and research by a new water industrial research centre based on the Water Research Association, with a Water Space Amenity Commission advising on recreational use of water.

This structure has been proposed because the government feels that with only ten large regional water authorities, the need for central day to day control will be reduced and that any powerful body placed between the Department of

the Environment and the Regional Water Authorities would only hinder decisions on large-scale water schemes.

Dr H. H. Cann of the Dee and Clwyd River Authority disagreed with this view. The planning unit should be a technical arm of the National Water Council, he said, and not an integral part of the Department of the Environment. It should be seen to be independent of government so that its assessments of the technical feasibility are independent of politics.

Mr B. Rydz, the Water Resources Board's assistant director, also put in a plea for a central body with some real authority, pointing out that all reforms of Britain's water industry so far have been directed towards such a body. Further, both the Central Advisory Water Committee, which spent eighteen months studying the problems of Britain's water industry, and the Proudman Committee (a subcommittee of CAWC) were adamant that a strong central body must be created.

But the chances of the National Water Council actually acquiring a bite to go with its advisory bark seem remote. Mr Jack Beddoe, Under Secretary at the Department of the Environment in charge of the reorganization, held out little hope of a change of heart.

Reform Unchanged

THE Reform Club in London celebrated this week the placing of Mr Phineas Fogg's fictional wager to travel around the world in eighty days, said by Jules Verne to have taken place at 7.45 p.m. on October 2, 1872, at the Reform Club, with a banquet at Guildhall. Professor Jean Chesneaux from the University of Paris marvelled at Jules Verne's early faith in the wonders of technology as well as at the way he combined liberality with xenophobia, but described his later disillusion with scientific things as a justifiable model for the disenchantment of the modern world. Sir Denis Brogan, an historian, was equally impressed with the limitations of technology. Sir Bernard Lovell, however, had the happy thought that relativistic time dilation might enable some future Phineas Fogg to circumnavigate the galaxy in eighty days. On balance, the Reform Club, dedicated to opposition to the reintroduction of the Corn Laws in the eighteenth century though it may be, succeeded in giving the impression that Mr Fogg would only with difficulty have been elected to the membership which so far includes no woman either.