

FRANCE

THE agreement reached at the recent Nice summit between the French and West German Technology ministers on cooperation in nuclear reactor technology, while vague, represents a pooling of risks, regarding both fast breeders and high temperature reactors, that both countries hope will work to their mutual advantage.

The indications are that Germany will benefit in the sphere of fast breeders. Her operation, conducted along with the Benelux countries, is racked by rising costs and due to bear fruit only in 1981, while France's 250 MW Phenix prototype sodium-cooled reactor has been working successfully for a year. In the field of high temperature reactors, on the other hand, Germany's project, although also behind schedule and increasingly costly, is one of the few of its type, and the Schmidt government appears prepared to take it further.

The money involved, of course, is enormous, and it is not clear whether financial backing will be divided equally between the two areas. It is expected that the two countries will contribute equally, but the agreement declares only that they should spend the amounts on the two areas taken together.

The conclusion came just a few weeks after the completion of a deal between France and the Westinghouse Electric Corporation which also reflected a trend to "Europeanise" the nuclear industry this side of the Atlantic. Westinghouse is to sell two-thirds of its 45% holding in Framatome, the French licensee of its pressurised light-water reactor, to the French Atomic Energy Commission (CEA) for \$25 millions.

Westinghouse will transfer its remaining 15% Framatome interest to the Creusot-Loire Company, the heavy equipment suppliers with a 51% interest in Framatome, in 1982, when the licenses expire. Until then, Westinghouse will be able to buy up to 1,200 tonnes of uranium from the CEA. Westinghouse will also continue to receive royalties for Framatome's use of Westinghouse technology in fulfilling orders and options, which now extend to over 40 plants. Westinghouse will take part in a joint research and development programme as well.

This "partnership" through Framatome between the CEA and Creusot-Loire in respect of pressurised-water reactors could conceivably expand into the field of fast breeders with the Franco-German agreement. Cooperation between the two countries on fast

breeders, it is understood, will take place through a joint company. On the German side will be Kraftwerke Union or a subsidiary; on the French side will be the CEA, or possibly Novatome, which is owned by the CEA and Framatome together with the Compagnie Generale d'Electricite (CGE). The CGE was involved in the ill-fated boiling-water reactors about which the government last year changed its mind; but, more im-



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portantly, it has a stake in a company working on the French fast breeder, GAAA, in which Creusot-Loire has been interested in order to widen its arena of nuclear activity. The size of the respective stakes appear to make it possible for CGE resistance to Creusot-Loire to be circumvented through Novatome.

● Another important deal which, like that involving Westinghouse, took months to finalise, was completed just before the New Year. An agreement between the American computer firm Honeywell Information Systems and the French government merges Honeywell's French subsidiary with the general-purpose business of the national computer company, CII, to form CII-HB, 20% owned by the government and, altogether, 53% owned by French interests.

The government is expected to give about \$280 millions of subsidies over four years, and a government-sponsored finance company will purchase computers sold to the government and nationalised industries. Furthermore, the addition of the 1,300 employees of the CII Research and Development Engineering Department will enhance the research resources of the new company. The whole deal represents the third attempt in eight years to establish a French computer industry that can compete with IBM in the country. But it also represents a setback for attempts to forge an overall European solution.

● The 15-year period after 1955, an era of strong growth in research which coincided with considerable expansion of the French university system, has been followed by a recession which has left university research facing very serious problems.

Now, following the creation of an autonomous National Secretariat for Universities in 1974, ostensibly to oversee both CNRS and university-financed research, the government has belatedly laid some foundations for organising university research policy. A central role has been accorded to the Secretary of State for the Universities (Mme A. Saunier Seit , who replaced M J. P. Soisson in January's ministerial reshuffle) in overseeing co-ordination of university research—an objective that has been sought for a decade. Groups have been formed within the National Secretariat for this purpose, but the overall effort is being directed towards refining budgetary procedures that permit healthy growth as well as adjudicating between university research programmes.

The driving force behind all basic research is the National Scientific and Research Centre (CNRS), with a budget (in 1976) of about 21,000 million francs. It directly finances the major part of research in universities, with which its links are close; the universities' own budget for research last year amounted to an estimated 1,400 million francs, a figure which includes part of the salaries of professors and assistants.

University research which is independent of the CNRS faces typical problems. Laboratories unaided by the CNRS have seen the buying power of their finances eroded since 1969. Moreover, insufficient coordination at the national level has helped to diminish the credibility of an often vague (even non-existent) university research policy. Research teams in the smaller and medium-sized provincial universities have also faced difficulties attaining the necessary size, although all the universities are now feeling the crisis, including such large Parisian universities as the Pierre and Marie Curie University.

● At the end of January, just a fortnight after the court established by France and Britain began considering demarcation between their off-shore oil prospecting limits, on which a decision is expected in the summer, reports emerged of hydrocarbon finds at a depth of 5,840 feet off the Brittany coast, though not in a disputed area. Results of commercial tests are awaited, but drilling will continue to 9,850 feet.