

French science

New government decides slowly

THE future of French research and technology policy-making was still in doubt last week, after another meeting of the government's cabinet, the Conseil des Ministres, which failed to mark out a division of responsibilities in this area.

At stake is the control of bodies such as the Commissariat à l'Énergie Atomique (CEA), which controls nuclear power and atomic weapons research and much else besides, and of programmes such as the previous government's efforts on behalf of French electronics and computing, control of which has been wrested from the French telecommunications agency, PTT, but so far has passed to no other body. There are doubts too about just who will have responsibility for the medical research council INSERM, the agricultural research council INRA and many other smaller bodies.

What is going on is a kind of asset-stripping from the previous Ministère de la Recherche et de la Technologie (MRT) which, amid much resistance, had garnered control in 1981 of all the major French research bodies, or at least those concerned with civil research. This allowed centralized research planning, but left officials and some ministers (at the ministry of health, for example) with less control over research than they would have liked.

Now that process appears to be being put into reverse, but the slowness with which decisions are being made — some close to the process say it will be a month before much more is known — indicates there may be some conflict within the new government about how power is to be divided. It is even being suggested that Alain Devaquet, the new minister for higher education and research, is beginning to see some of the advantages in MRT's power, and may be unwilling to accept the idea of too great a loss of control, or of the establishment of a prime-ministerial body above him with the overall job of research coordination (as was the practice in previous right-wing governments). "But the longer the delay, the more Devaquet's power is likely to slip away", said one seasoned Paris commentator.

Meanwhile, the future of one of the most important institutions established by the previous government is also under a cloud. The "evaluation bureau", provided by the previous science minister's three-year plan but accepted by the French parliament only last December, was to have carried out independent evaluations of the work of all the major French research institutions, from CEA and the Centre Nationale de la Recherche Scientifique (CNRS) downwards.

Little more than a week before the elec-

tions, M. Hubert Curien, then minister of research and technology, put the deputy-director of his advisory cabinet, M. Jean-Pierre Chevillot, in charge of this evaluation system. He was to establish evaluation committees and procedures, and set in motion a review — initially — of the finances and policies of CEA, CNRS, INRA, INRIA (for informatics) and

Argonne National Laboratory

US keeps fast reactors alive

Argonne, Illinois

NUCLEAR power plant operators typically do not welcome visitors when the safety systems are disabled and primary cooling systems are shut down. But engineers from Argonne National Laboratory (ANL) made sure they had a crowd of onlookers in ringside seats at their Idaho Falls test facility last week when they purposely simulated just those conditions in their Experimental Breeder Reactor (EBR-II).

"It was truly an impressive performance", says Chuck Till, assistant director for engineering systems at Argonne. "Within 100 seconds after the pumps were shut off, we came down to zero power."

Because EBR-II is pool-type reactor, the core is surrounded by a lake of liquid sodium with high thermal inertia. When coolant flow around the core stopped, the core began to heat up rapidly. But long before it reached the sodium boiling point, the metal fuel pins and control rods expanded, passively terminating the chain reaction.

It worked on the blackboard, it worked in computer simulations, and the engineers present were willing to bet their lives that it would work in practice. But when a pressure valve in a heat sink line popped open with a loud bang, everyone in the control room jumped into the air.

The successful test of EBR-II sets the stage for further development of the Integral Fast Reactor (IFR), a project Argonne hopes will play an important role in the future development of nuclear power.

The decision to proceed with IFR was bold. The death of the Clinch River Breeder Reactor in Tennessee threw the US nuclear programmes "into chaos", says ANL director Alan Schriesheim. But it also opened "a window to change the course of reactor design", says Yoon Chang, general manager of the IFR programme. Adds Schriesheim, "one page in our energy portfolio should be nuclear".

Pool type reactors are not new; several are in operation around the world. But using metal fuel represents a major

change from current technology. Till believes that IFR will prove the advantages of the metal fuel design, and may then provide the incentive for a shift away from current oxide fuel technology, despite huge investments in that process.

As the flagship of ANL's nuclear programme, Schriesheim is pleased at the success of IFR, which is just one part of the "strategic plan" developed by ANL to keep the laboratory operating and moving in a direction consistent with national research priorities.

In the past decade, ANL has been on a roller coaster. During the "energy crisis" of the 1970s, it was overflowing with money, personnel and demonstration projects. In the Carter era, says Schriesheim, money was "shovelled" at energy programmes, and ANL's staff grew from 4,000 to 5,700. The Reagan administration, however, brought massive cuts in programmes of energy conservation, solar energy and alternative fuels; ANL's staff shrank to 4,300. Following Clinch River's demise, there were further cuts, bringing the number of personnel down to 3,700.

The strategic plan was an attempt to reverse that slide. "Laboratories make a mistake if they think they can sit back and money will roll in", says Schriesheim. In addition to strong support of a nuclear programme, ANL proposed major thrusts in new facilities, most notably the 6 GeV synchrotron light source.

While support from the Department of Energy has grown, Schriesheim has also sought support directly from Congress. ANL's proposed 1987 budget is below the \$260 million approved in 1986, but Schriesheim is hopeful that Congress will restore any cuts. Unfortunately, he now must fight for funds for alternative energy strategies at the very time that oil prices are plummeting.

"True, oil prices are falling", says Schriesheim with a rueful smile. "But in the future we'll have to go for alternatives." It is Schriesheim's hope that when the country looks to those alternatives, ANL will be there with the answers.

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