French universities

Into reverse

One of the first steps towards undoing the authoritarian reforms of the French university system introduced by the previous minister of universities, Alice Saunier-Séité, has just been taken. Students have been allowed back onto the university councils, the senior administrative councils of the universities.

The reform would be radical — if the students were radical. But the present atmosphere is nothing like that of 1968. The new student representatives are conservative and unreforming, say university staff. For example, in one recent meeting in the University of Paris, students warmly approved a proposal for more examinations and greater selectivity — something which would have been anathema fourteen years ago.

The underlying question is not what the students will do, but where the government will stop in this new attempt to restructure French higher education. M. Alain Savary, the minister for national education (which now includes the universities and *grandes écoles*), has some plans which are causing shivers in the French establishment. Not least among them is that the *classes préparatoires*, the usually private courses that prepare students for entry into the prestigious *grandes écoles*, should be put into the hands of the universities.

This would mean that the brightest of French schoolchildren, who normally pass through the *classes préparatoires* on their way to the *grandes écoles* (and thence to management and government administration), would be exposed to a university environment. There they would learn that the universities were not the second class establishments that some suppose, the argument goes, and some might even choose to stay and read for university degrees.

However, such proposals are too radical for the *grandes écoles*, who are resisting them so strongly — and are so well represented in government — that the political will at the ministry of education is beginning to falter.

For researchers, the situation is even more complicated. There is a conflict afoot between the minister for research and technology, Jean-Pierre Chevènement, and M. Savary. Chevènement has battled long and hard for control of all government spending on civil research and development. Much of the research is done in the university environment, in laboratories which are now funded by Chevènement's ministry. In general, the researchers in these laboratories (such as those of the Centre Nationale de la Recherche Scientifique) do little formal teaching in the university (although they help to train researchers through seminars and research degrees). Chevènement is believed to want more of the teaching to be done by his researchers,

to improve the training of scientists; but this would remove some of the university teachers' higher level and more interesting work. So university opposition is growing to these moves, and Savary inevitably represents one side and Chevènement the other.

How this battle will develop is anyone's guess, but it could easily lead to another deadlock, when the promised higher education reforms would merely tinker with the system, rather than removing its two main faults: the class divisions between the *grandes écoles* and the universities, and between the researchers with formal teaching responsibilities and those without.

Robert Walgate

Moves on energy

The French government is showing every sign of pain in its attempts to embrace the environmental movement. In the latest agonies, the council of wise men which advises the Minister of Industry on nuclear safety has been reformed to include a few token nuclear opponents; and the promised new agency for renewable energies is to be set up, but shorn of FF 170 million.

The safety council is the Conseil Supérieur de la Sécurité Nucléaire, presided over by Professor Louis Néel, an ex-director of the French atomic energy agency laboratories in Grenoble. Néel is described by his opponents as "totally pro-nuclear" and, indeed, his council has met only three times in the past seven years, giving the previous government a pretty clear run on safety matters. Under the new arrangement, Néel stays as president of the council, but it is to meet more frequently (two or three times a year) — and there will be a few cuckoos in the nest.

These come in part from the addition of a further seven experts in the council, including a science journalist, M. Serge Berg of Agence France Presse. The biggest change, however, is the inclusion of trade union representatives on the council for the first time, among them Bernard Laponche, a prominent nuclear critic from the more environmentally inclined of the two major unions, CFDT. So far Laponche is not impressed. The council is still not complete and no date or programme has been set for its first meeting.

As for the renewable energy agency, Agence Nationale pour la Maîtrise de l'Energie (ANME), this will regroup the existing solar energy and energy conservation agencies, and control their budgets; but present indications are that its budget will be less than the sum of its predecessors. The cut in budget is largely the result of a deal to buy Algerian natural gas — the energy conservation agency loses FF 170 million (£17 million) to help pay for the gas.

Robert Walgate

Radioactive waste in India

Looking to glass

New Delhi

The world's second commercial plant for the immobilization of radioactive wastes from nuclear power generating stations is soon to be built at Tarapur, in the western Indian state of Maharashtra. The first such plant is already in operation at Marcoule in France.

The new plant is being set up in the wake of increasing concern in India that radioactive waste from nuclear power installations might damage the health of the people — although there has been no scientific evidence of such damage so far from India's two nuclear power plants at Tarapur and Kota in Rajasthan state.

The radioactive waste immobilization method being adopted at Tarapur is a semi-continuous process which incorporates the oxides of high level waste from fuel reprocessing into borosilicate glassy matrices. The nominal throughput of the plant is about 25 litres of waste an hour, equivalent to the immobilization of wastes produced from reprocessing about one tonne of spent fuel a day. The plant would produce about 125 kilogrammes of glass a day, which is to be stored in stainless steel containers.

The process was developed in India and differs in many respects from the British and French techniques. The wastes are first calcined with glass fines in a process canister and then melted into a glass form. After sufficient "soaking" to help achieve homogeneity, the glass is cast into storage canisters — which can be inexpensive containers as the glass waste is more easily stored than liquids.

The storage units are stored in an engineered near-surface facility where they undergo continuous natural draught cooling to dissipate the decay heat under constant surveillance. The plant is designed to provide cooling for 20 to 30 years and incorporates facilities for establishing the characteristics of the waste products when the time comes for ultimate disposal.

The ultimate disposal medium has not yet been chosen, although current research favours a hard rock formation such as gneisses or granite.

The high-level radioactive wastes arise from the reprocessing of spent uranium fuel for the extraction of plutonium. The Atomic Energy Commission now proposes to build a chain of reprocessing plants in the country near the sites of future nuclear power stations. The proposal follows the United States' refusal to provide enriched uranium for the Tarapur nuclear power plant unless India meets conditions specified by the United States in the name of nuclear non-proliferation. Plutonium extracted by the reprocessing of spent fuel would therefore substitute for supplies of enriched uranium withheld in this way.

Sunil Saraf