

States for the supply of enriched uranium. The United States maintains that India should sign the Nuclear Non-Proliferation Treaty and open all its nuclear installations — indigenous as well as foreign-aided — for international inspection as required by the US Nuclear Non-Proliferation Act of 1978. The supposed fear is that a uranium reprocessing facility in India might be used to extract plutonium for atomic weapons.

India rejects this contention, however, arguing that the 1978 US legislation should not be applied retrospectively and unilaterally to a bilateral agreement entered into in 1963. India has said time and time again that its nuclear technology would be used for peaceful purposes only. India holds the Nuclear Non-Proliferation Treaty to be discriminatory, saying it includes only civilian establishments and specifically excludes military establishments of the nuclear weapon states which prescribe non-proliferation for others and not for themselves.

The issue is now a matter of principle — especially as India is now almost self-reliant for nuclear fuel production.

Indian nuclear scientists have developed mixed oxide fuel of uranium and plutonium which can work as alternative fuel in place of the enriched uranium supplied by the United States for the Tarapur plant. The only other operational nuclear power plant at Kota in Rajasthan utilizes indigenous natural uranium. The nuclear plants being built at Narora and Kalpakkam will also be pressurized heavy water reactors using indigenous uranium.

Sunil Saraf

US nuclear technology

Exports raise fears

Washington

Fears are mounting in Washington that the Administration's efforts to increase nuclear technology exports could be encouraging the proliferation of nuclear weapons. Last Thursday, members of Congress questioned the Administration closely about its agreement with Australia which, for the first time, would mean the United States sharing its knowledge of centrifuge technology for enriching uranium.

The criticism came only a few days after a new storm had broken over the ability of the International Atomic Energy Agency (IAEA) in Vienna to provide satisfactory safeguards against the diversion of nuclear materials from civilian to military use.

The decision to share enrichment technology with Australia is part of an effort to encourage US companies to participate in a joint venture with the Australian government to construct enrichment facilities for its nuclear industry. It was contained in a memorandum signed on 12 November by President Reagan which also instructed the Department of Energy to look at ways of

British academics at the barricades

Genteel academic militancy reached boiling point last week, with a mass lobby of the British Parliament by some 10,000 university teachers protesting not merely at the British government's decision that the university budget should be cut but at the uncertainty that remains about the arrangements that may (or may not) be made to deal with redundancies among academics. Some of the participants (see picture) wore fancy dress.

The lobby (on Wednesday, 18 November) coincided with a debate in the House of Commons on the planned reduction of the public subvention for universities, called by the Labour



opposition. One government speaker complained that it would have been more convenient if the debate had been arranged for the following day, so that those inclined to do so would have had a chance to listen to what the lobbyists were saying.

Both occasions followed by a lunch-time break the first appearance of Sir Keith Joseph, the new (since last month) Secretary of State for Education and Science, before the Select Committee on Education, at which he and his retinue of civil servants were unable to put into words a definition of the "Robbins principle", the doctrine that qualified candidates for university entry should be catered for. At the beginning of last week, the UK Committee of Vice-Chancellors also (unusually) made public its own account of an unsatisfactory meeting with the minister and a waship letter it had written to him afterwards.

The debate in the House of Commons has confused and not clarified the immediate financial prospects of British universities. Sir Keith Joseph and his minister with special responsibility for higher education, Mr William Waldegrave, declined to answer the apparently simple question whether the government would pay the cost to universities of breaking contracts with tenured academics. Each of them said, however, that the British government would be prepared to "listen to" arguments that it would save money by extending the period over which the universities were now required to contract.

The Committee of Vice-Chancellors is now drafting such a document.

transferring the federal uranium enrichment programme into private hands.

During a hearing of the Senate Foreign Relations Committee's subcommittee on energy and nuclear non-proliferation, several members questioned Administration officials closely on this decision. Centrifuge technology has previously been subject to strong government restrictions, on the grounds that it could provide a relatively inexpensive way of producing weapons-grade nuclear fuel.

However, the Administration continues to insist that, although a hard line will be taken with any country that diverts civilian technology to military use, in general IAEA provides the best way of minimizing the risks of proliferation through its safeguards and regular inspections.

This argument suffered a setback earlier this year when an ex-IAEA inspector, Mr Roger Richter, told the same Senate committee that IAEA had failed to detect

efforts by the Iraqi government to work clandestinely on nuclear weapons, and that present IAEA safeguards were "totally incapable of detecting the production of plutonium in large-size material test reactors".

At the time, IAEA officials fiercely contested Mr Richter's conclusions, claiming that he had not been aware of all the relevant facts. However, it now looks as if they will have to go through the same process in defending themselves against criticisms made by another ex-inspector, Mr Emanuel R. Morgan, in a report commissioned for the Nuclear Regulatory Commission by commissioner Mr Victor Gilinsky.

The report — not officially released but leaked to the *New York Times* — echoes Mr Richter's conclusion that IAEA is incapable of detecting the diversion of a significant quantity of nuclear fuel "in any state with a moderate to large nuclear energy establishment".