Non-proliferation treaty

United States asks for more safeguards

Washington

THE Reagan Administration, which in the past has taken a sceptical view of nuclear non-proliferation efforts, has had a change of heart. At a meeting earlier this month in Luxembourg of Western nations that sell nuclear equipment and materials, the United States pressed for adoption of a uniform requirement that all future sales be conditional on the purchasers' acceptance of "comprehensive" safeguards — meaning that all nuclear facilities in the country must be open to inspection by the International Atomic Energy Agency (IAEA).

The State Department indicated that no agreement was reached on the US request, but it seems to have been acknowledged that present safeguards are inadequate. The meeting was called, the State Department said, to allow the Western supplier countries to "compare notes" in advance of forthcoming meetings of IAEA on assurance of supply and the review of the Nuclear Non-Proliferation Treaty (NPT) scheduled to be held next summer in Geneva. Eastern bloc countries, which have participated in meetings of the so-called London Suppliers Group, were not invited.

The United States has very strict rules governing the export of nuclear materials. Unless waived by the President, the rules require that no country may purchase nuclear equipment, fuel or related materials unless it has comprehensive safeguards in place. Under NPT, non-weapons states must also accept comprehensive safeguards. But nothing in NPT prevents a signatory from selling equipment or materials to a non-NPT state that does not accept comprehensive safeguards. Suppliers are bound only to gain assurances that safeguards will apply to the particular items they are selling.

It is this loophole that the United States is now apparently trying to close. Several European countries, notably France (which has not signed NPT), have been extremely reluctant to restrict their markets for nuclear equipment. Purchasers who would be affected by the US proposal include Argentina, Brazil, India, Pakistan, South Africa and Israel, all of which have nuclear facilities (reactors, enrichment plants or reprocessing plants) that are not under IAEA safeguards.

Although President Reagan announced

his intention to press for the new uniform restrictions more than a year ago, there have been no signs of action until this month. Reagan did not raise the issue at the Williamsburg summit meeting, which came one month after the announcement, as many expected he would.

And within three months of the announcement, the Reagan Administration approved the sale of spare reactor parts to India, the transfer of heavy water to Argentina and the sale of computers and other equipment to South Africa. It has also arranged for third parties to supply nuclear fuel to India, South Africa and Brazil.

Stephen Budiansky

Pakistanis indicted

Washington

CONCERN over proliferation of nuclear weapons was underlined last week by the indictment of three Pakistani nationals in Texas on charges of attempting to export to Pakistan critical electronic components that, according to the indictment, could be used in the development of nuclear weapons. The Justice Department refused to discuss the case further.

Last month, Senator Alan Cranston (Democrat, California), released what he said was "substantial" new information about Pakistan's efforts to get the bomb. According to Cranston, Pakistan now has an operating uranium enrichment plant capable of producing 15 kg of highly enriched uranium a year, about enough to make one bomb. A reprocessing plant, based on designs that France supplied before finally cutting off assistance, is also in the works. (The head of Pakistan's nuclear programme, Dr A. Q. Khan, has been convicted by a Dutch court of stealing plans for the enrichment plant from the URENCO plant in Holland, where he worked.) Pakistan has an indigenous supply of uranium ore and a plant for converting it to uranium hexafluoride.

Although the reprocessing of plutonium from Pakistan's KANUPP power reactor is, in theory, a source of bomb materials as well, it would take essentially all of the spent fuel so far produced to yield a sufficient quantity for one bomb, according to Warren Donnelly of the Congressional Research Service. The KANUPP reactor is under IAEA safeguards, although some lapses — including chronic failures of monitoring cameras — have been reported. Cranston also said that China has apparently provided technical assistance to Pakistan on warhead design since the late 1970s. Stephen Budiansky

Sellafield

Cancer risk reviewed

IN November last year, a documentary produced by Yorkshire Television (YTV) claimed that the proximity of British Nuclear Fuel Limited's nuclear reprocessing plant at Sellafield (Windscale) to the village of Seascale in Cumbria could be a factor in producing cases of childhood leukaemia in Seascale. The Department of Health and Social Security set up an Independent Advisory Group chaired by Sir Douglas Black to assess the claims and its findings are published this week.

As the report admits, the claim that the reprocessing plant was a factor in causing leukaemia "is not one which can be categorically dismissed... nor is it easy to prove". There is, the report concludes, sound evidence for YTV's claim of an increased incidence of leukaemia in the village, which the report calls "unusual but not unique". But the number of children who developed leukaemia in a 30-year period at Seascale was less than 10 and there is some uncertainty about the true size of the relevant population.

Sir Douglas criticizes existing state bodies that monitor environmental pollution in Cumbria, chiefly the Ministry of Agriculture, Fisheries and Food (MAFF) and the National Radiological Protection Board (NRPB). There is, he says, evidence of a lack of coordination and he calls for a far more thorough investigation of cancer incidence in the region.

For West Cumbria as a whole, however, the mortality for childhood cancers is close to the national average. The report finds no conclusive evidence of any general risk to health for children or adults living near to Sellafield when compared with the rest of Cumbria. To those living in Sellafield who are worried about the cancer risk Sir Douglas offers "a qualified reassurance".

Perhaps the major recommendation of the report is the call for tighter government controls on the activities of British Nuclear Fuels Limited (BNFL). It is recommended that there should be formal consultation between BNFL and area health authorities over the possible health consequences of discharges, and particular stress is placed on the need to remove solvents from the discharges. The waste from Sellafield contains higher levels of emitters of alpha as well as beta and gamma radiation than that from similar installations in other countries, and the report recommends a critical review of the reasons for this.

BNFL itself, however, has made moves to "clean up" Sellafield, and weeks before the publication of the Black report announced plans to reduce discharges to a level "as close to zero as possible". □

**Investigation of the Possible Increased Incidence of Cancer in West Cumbria, Report of the Independent Advisory Group (HMSO £6.70).*

Correction

In the article on the Dutch research council, ZWO, in *Nature* 309, 497-498 (1984), the space research institute's budget for the building of instruments was given as Dfl 50 million. It is in fact Dfl 15 million. □