

## Supercomputers

# India resents US strings

New Delhi

THE United States has imposed certain conditions on the sale of supercomputers to India. The offer was made by President Reagan ten months ago at the height of Indo-US cooperation, but the Pentagon subsequently raised objections.

Acting US Science Advisor Dr John P. McTague, who was recently in India, says the offer still stands but India must comply with a safeguards regime that has just been finalized by the US Departments of Commerce, State and Defense. According to McTague, the United States has not sold supercomputers outside the Western bloc, hence the safeguards. The conditions have been communicated to New Delhi and the ball is now in India's court.

The United States has simplified the procedures for the export of high-technology items since the two countries signed a memorandum of understanding in May 1985. Under the memorandum, the United States agreed to speedy clearance of high-technology equipment for civil and defence needs subject to assurances about its end use and a guarantee by the Indian government that such equipment would not be used for nuclear programmes or allowed to fall into the hands of the Soviets.

But the conditions for the sale of supercomputers go further. The United States is seeking assurance that a computer will be used for the specific purpose for which it is bought and not diverted for military or nuclear research. Programs to be run on the computer must have US approval, as must personnel with access to it. As well as the right of periodic inspection, the company supplying the supercomputer will have control over maintenance and repair and Indians will not be allowed to remove any part of the hardware or software.

Indian officials are studying the implications of the safeguard conditions and it is likely that they will be found unacceptable. "It would be demeaning to purchase a supercomputer under these conditions", one official said. "Inspection means that an American will be sitting at the computer centre checking every program we run. We should not accept this."

Indians have been interested in acquiring supercomputers for medium-range weather forecasting and monsoon research and possibly for computer-aided design of a light combat aircraft.

India has already entered into a \$26 million deal with Control Data Corporation (CDC) under which the state-owned Electronics Corporation of India will manufacture 600 units of Cyber-810 and Cyber-830 mainframe computers during the next nine years. India awarded the contract to CDC against stiff competition

from the French computer company Bull in the hope that CDC would also sell Cyber-205 supercomputers. Even if India accepts the safeguards, it is believed in India that the United States would be reluctant to supply the supercomputers because of India's opposition to the US

## Japan Prize

# Dutch winner attacks US policy

Tokyo

AT a memorial lecture on artificial organs by one of this year's winners of the Japan Prize, Japan's answer to the Nobel Prize, would one expect to see pictures of aircraft carriers and Trident submarines along with cartoons of star wars and the effects of nuclear winter? Dr Willem Johan Kolff, 1986 Japan Prize laureate for medical technology, apparently felt his lecture in Kyoto and Tokyo last month was a fitting occasion to lambast US defence policy and appeal for support for the anti-nuclear movement. But how does one turn a talk from kidney machines to killer satellites?

Kolff's speech began normally enough, with a historical review of the kidney machine he developed from 20 metres of artificial sausage skin in the Netherlands during the Second World War. With more than 66,000 Japanese now dependent on dialysis and the number doubling about every five years, there are many in Japan grateful for Kolff's invention and few would dispute his eligibility for a major international award.

From kidney machines, Kolff quickly switched to graver topics and a Rubens' picture was compared to the "life and death committees" that sprang up in the United States in the 1960s, when there were too few dialysis machines to go round and those to be saved had to be selected on the basis of age, occupation, number of children and so on. Then came a warning that the life and death committee is raising its ugly head again in the United States under the guise of "cost containment".

And why is cost containment necessary? In sailed slides of aircraft carriers and Trident submarines, along with the message that the United States is spending too much on defence and too little on treating its fellow citizens. In contrast, Kolff portrayed Japan as a haven where low defence spending allows high industrial productivity and where all who need kidney machines get them. But with kidney transplants virtually unobtainable, Japan is hardly a paradise for patients with renal disease (see *Nature* 313, 338; 1985). And what of the defence the United States

bombing of Libya.

If the United States does refuse to sell supercomputers, India will turn to Japan or the Soviet Union. The Department of Electronics has already purchased four S-1000 supercomputers from NEC of Japan for its nationwide information network. And the Soviet Union has agreed to sell, without strings, its Elbrus parallel processing machine as soon as it leaves the factory early in 1987. **K.S. Jayaraman**

has provided for Japan for 40 years?

Kolff then turned to the membrane oxygenators developed from the artificial kidney after it was noticed that blue blood passing through the dialyser turned red. Who needs oxygenators? The 50,000 victims of nuclear war with scorched lungs. But, asserted Kolff, nobody would be interested in artificial lungs because they would all die anyway from the effects of nuclear winter. The stage now set, Kolff leapt back and forth from artificial hearts to nuclear fire power and star wars to artificial eyes and ears. In his abstract he threw in the greenhouse effect for good measure, but his listeners were spared the assertion that "the polar ice caps will melt" and "the coastal plains of Japan will be flooded". Kolff closed by urging the audience to join anti-nuclear movements such as International Physicians for the Prevention of Nuclear War, the controversial winners of last year's Nobel Peace Prize, and ended by asking "what good will an artificial heart do us if we are all vaporized?"

The Japan Prize is awarded by the Science and Technology Foundation of Japan, a non-profit organization under the direction of the Japanese Prime Minister's office, and is intended to recognize significant and original achievements in science and technology that contribute to peace and prosperity for mankind. The foundation's dedication to peace provided Kolff with the platform for his anti-nuclear appeal, and as Japan is edging towards a decision to participate in the Strategic Defense Initiative under the enthusiastic backing of Prime Minister Yasuhiro Nakasone, Kolff's speech was timely. But will this lecture help elevate the Japan Prize to a comparable level of recognition with the Nobel Prize, one of the unstated aims of its founders?

**David Swinbanks**

## Correction

IN the article "Making radiation understood" (*Nature* 321, 195; 1986), the relative value of curies and becquerels is incorrectly given: it should read  $1 \text{ Ci} = 3.7 \times 10^{10} \text{ Bq}$ . □