

## Canada adopts new nuclear safeguards

from David Spurgeon, Ottawa

STUNG into reconsidering its nuclear export policy by India's explosion of a nuclear device last year, Canada has announced that more stringent safeguards will now be applied to sales abroad of its nuclear technology, facilities and material. But, instead of calling for a complete ban on nuclear sales—as it once considered doing during a seven-month policy review—Canada has decided actually to encourage such sales provided new safeguards are met.

The decision has considerable importance. The Indian explosion (achieved with the unintended aid of a Canadian research reactor and personnel training programme) embarrassed government officials here just at a time when the CANDU reactor's remarkable success at home was beginning to pay off in export sales. By stirring Canadian consciences with the threat of further nuclear weapons proliferation, the Indian incident threatened to frustrate one of the country's few successful forays into high technology just when the superiority of CANDU was being proved.

To some observers, the prospect of Canada failing fully to exploit commercially a successful technology, after the expensive research and development had been accomplished with government funds, seemed balefully familiar.

The government's rationale for its new policy, announced on December 20 by the Minister of Energy, Mines and Resources, Donald S. Macdonald, was thus to place in balance the need for foreign trade of the Canadian economy, the need for cheap electrical power of developing countries at a time of world-wide oil shortage, and Canada's responsibility for ensuring that her nuclear resources do not contribute to the proliferation of nuclear weapons.

"The provisions, to be administered by the International Atomic Energy Agency, or through appropriate alternative procedures meeting the requirements of the Treaty on the Non-Proliferation of Nuclear Weapons", said Mr Macdonald, "will cover all nuclear facilities and equipment supplied by Canada for the life of those facilities and equipment."

"They will cover all nuclear facilities and equipment using Canadian-supplied technology. They will cover all nuclear material—uranium, thorium, plutonium, heavy water—supplied by Canada, and future generations of fissile material produced from or with these materials. They will cover all nuclear materials, whatever their origin, produced or processed in

facilities supplied by Canada."

"Most importantly, all safeguards arrangements will contain binding assurance that Canadian-supplied nuclear material, equipment and technology will not be used to produce a nuclear explosives device, whether the development of such a device be stated to be for peaceful purposes or not."

This latter remark was a reference to the Indian case, in which that country claimed not to have violated previous agreements with Canada because her nuclear explosive was for "peaceful purposes"—an interpretation never agreed to by Canada but now explicitly excluded for the future.

Potential Canadian exporters of nuclear material, equipment or technology were advised that in future they will have to ascertain from the government that there are no safeguards or impediments to sales before making offers of supply.

Having outlined the safeguards, Mr Macdonald said that, "to ensure that Canadians will enjoy the economic gains from sales abroad, the government will encourage the supply from Canada of major high technology components and services." It would also seek domestically to "establish a cooperative approach of preference (among the provinces) for Canadian material equipment and services."

The Canadian industry at present has the capacity to produce at least three nuclear reactor power systems a year, the minister said. Domestic requirements will average four units a year over the remainder of the decade, and exports could add at least one additional unit a year. Nearly \$100 million in capital investment has already been committed or planned by the private sector to expand capacity, and future demands will require perhaps \$100 million more. The federal Department of Industry, Trade and Commerce will see if it can help provide it through incentive programmes.

Meanwhile, the government has lifted the freeze put on nuclear exports after India's explosion and has authorised Atomic Energy of Canada Limited to negotiate a number of foreign sales and agreements, provided that they comply with the new safeguards.

These include agreements with the United Kingdom covering CANDU/SGHWR technological exchanges and heavy water supplies, a licensing agreement to supply CANDUs to Italy, goods and services estimated at \$150 million for a second 600-MW CANDU power station for Argentina, two 600-MW CANDUs for Iran—possibly four, one reactor for Korea, the nuclear part of a CANDU for Denmark, and technology agreements with Rumania.

Opposition parties have said that the new policy does not go far enough to prevent the spread of nuclear weapons. James Balfour, of the Progressive Conservatives, said nuclear agreements should not be signed unless the country involved allowed inspection of all its nuclear facilities, not just those acquired from Canada. This would prevent countries from simply copying a CANDU and using it to produce plutonium.

But Mr Macdonald claimed that the new policy makes Canada's safeguards standards higher than those of its competitors—and only time will tell if that will hurt sales. He said that International Atomic Energy Agency safeguards do not cover technology or prevent the use of nuclear materials for peaceful purposes, as Canada's now do.

In the last analysis, of course, everyone recognises that no form of international agreement will guarantee non-proliferation of nuclear weapons; that depends upon each nation's willingness to abide by the agreements. Mr Macdonald admitted as much outside the Commons after his announcement. And if trade partners with Canada decide to break their agreements, he said, Canada will have no recourse but to embargo future nuclear sales, as was done with India. □

## Useful, unsurprising

THERE are no surprises in the recent report on energy conservation prepared by the National Economic Development Office (*Energy Conservation in the United Kingdom*, HMSO, £3.40) but a useful collection of relevant facts and figures which have been lacking in some other surveys.

As expected the report pinpoints domestic and office heating as the main areas in which savings can be made without too much social upheaval, and suggests a comprehensive analysis of the type of fuel and energy supply which would give the most efficient use of primary energy. The facts show that the net energy supply to the domestic market increased very little from 1960 to 1972, although the pattern of fuel use changed drastically. About 70% of this energy goes into space heating, and as the number of homes is steadily increasing and the population is changing to include a greater number of elderly people who will require higher living temperatures, the greatest savings in energy demand can be made here by a much more widespread use of proper insulation. An energy saving of 22% for a new three-bedroomed, semi-detached, centrally heated house could be achieved at an extra cost of a few hundred pounds a house. □