

agreements will include measures to curtail the nuclear-arms race in its qualitative as well as its quantitative aspects.

WELCOME SAFEGUARDS

The Non-Proliferation Treaty, which came into force on March 5, 1970, and the safeguarding procedures that have been recently worked out by the International Atomic Energy Agency's Safeguards Committee offer some hope that the further spread of nuclear weapons will be limited. The solemn declarations of states party to the Treaty to renounce this kind of military force and their agreement to allow international personnel to inspect their nuclear installations justify a cautious optimism. There are, however, states that have not signed the Treaty, and its effectiveness will be diminished if some important nuclear and so-called "near-nuclear" nations continue to stand aside. I am pleased to announce today that our negotiations are proceeding favourably and that Canada expects to conclude the safeguards agreement with the Agency before the end of the year.

The measure of confidence arising out of the Non-Proliferation Treaty will be strengthened if it is brought into smooth and effective operation. The states that have renounced nuclear weapons have done so in the belief that their own interests are best served by this renunciation; they recognize that they have less to fear from others when they show that others have nothing to fear from them. The mutual trust and confidence born of this renunciation will endure only to the extent that these same states now co-operate with the International Atomic Energy Agency and its inspectors in the operation of safeguards.

ATOMIC HOUSEKEEPING

All of us must keep carefully-audited records of our production, movement, and consumption of fissionable materials if we are to feel confident that we have good internal control. The records that we need for good housekeeping at home fulfil most, if not all, of the requirements for international inspection. For this reason I do not believe that safeguards impose a new burden. I know that some organizations fear that in submitting to detailed inspections their commercial secrets might be compromised, but the real commercial secrets lie in unaffected areas such as the design and manufacture of components and these fears are exaggerated. It is now in the interests of each state to be generous in its co-operation with the Agency's inspectorate and to demonstrate to the rest of the world community that its intentions are wholly peaceful.

The peace of the world may not be quite as precarious as it was a few years ago, but the dangers are still real. The Moscow Partial Test Ban Treaty of 1963 has stopped many – but by no means all – of the nuclear explosions that contaminate our atmos-

phere. To some extent this Treaty can be looked upon as a major public-health measure rather than as arms control. Our newspapers no longer give us those daily fallout readings to remind us that nations are developing nuclear weapons to even higher levels of effectiveness. But the testing goes on underground – this kind of activity has accelerated since the signing of the partial test-ban – and the development of ever more sophisticated nuclear weapons continues.

UNDERGROUND TESTS

With these realities in mind, many states of the world, including Canada, have concluded that the time is ripe for a renewed and determined effort to achieve a ban on underground nuclear tests as an extension of the partial test-ban of 1963. Seismological investigation, investment in improved facilities, and the possibility of international co-operation in seismic data exchange have all begun to give grounds for believing that adequate seismological methods of discriminating between underground nuclear explosions and natural seismic events can be found. Problems and ambiguities remain – particularly with explosions of extremely low yield, where verification trails off into the realm of the improbable. But the potential for seismological identification has sharply narrowed and made more manageable the issue of onsite inspections that has for too long bedevilled efforts to achieve an underground test ban.

The verification problem is in the last analysis a political rather than a technical question, and in our view, as well as that of a very large number of non-nuclear nations, the time has come for the two major nuclear powers to take up their efforts to resolve this problem where they left off eight years ago. At the same time, we should not ignore the desirability of all nuclear powers adhering to the Moscow Treaty and joining with others in an effort that would lead to a complete ban on all nuclear tests. Until such a ban can be reached, I urge the two major nuclear powers to scale down their underground tests, starting with the biggest.

As I address you today, I am aware – uneasily aware – of the fact that a quarter of mankind, the people of China, is unrepresented amongst us. I accept the assurance of Mr. Chou En-lai that Chinese intentions are peaceful, but I am sure we shall all be happier when the representatives of that ancient civilization and powerful modern state are taking part in our deliberations rather than observing them in silence. Canada will do all it can to ensure that this is the last conference on nuclear energy in which a quarter of mankind – and a nuclear power – goes unrepresented.

In the 16 years since our first conference in 1955, nuclear scientists and engineers have forged ahead. In most situations, large quantities of electricity can now be produced by the fission of uranium as cheaply as by burning coal or oil. Fears of a