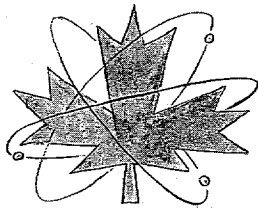


national Atomic Energy Agency (IAEA), founded in 1957 to develop and administer nuclear safeguards and to promote access by member states to nuclear technology for peaceful uses, and, second, the Treaty on the Non-Proliferation of Nuclear Weapons (NPT), which came into force in 1970. The IAEA developed a safeguards system in the 1960s to inhibit the use of nuclear material, equipment and technology to further any military purpose. Most nuclear-suppliers were prepared to forego bilateral safeguards in favour of the IAEA system. Canada first did so in 1966 through a three-party arrangement with Japan and the IAEA. In 1969 and 1971, IAEA safeguards were also applied to specific Canadian plants supplied to Pakistan and India.



The IAEA system had weaknesses. First, there was no obligation for the nuclear-supplier to make acceptance of the system by the recipient a condition of supply. Moreover, it did not apply to the whole of a recipient's nuclear activities. Since 1970, the NPT has sought to overcome the weaknesses of the IAEA system by:

- (1) facilitating to the fullest possible extent the exchange of technology for the peaceful uses of atomic energy;
- (2) requiring a commitment by all parties to the treaty not already possessing nuclear weapons not to acquire or develop them and to accept IAEA safeguards on all nuclear activities within their territories in order to verify compliance with this obligation (there was a corresponding commitment by parties already possessing nuclear weapons not to provide them to non-weapons states); and
- (3) committing the nuclear-weapon states parties to the treaty (Britain, the U.S., the U.S.S.R.) to work towards reducing their own weapons stockpiles.

#### Limitations

Although 102 countries have become parties to the treaty, the limitations on its success are illustrated by the non-participation of a number of key countries including France, China, India, Brazil, Chile, Argentina, Pakistan, Portugal, Israel, Indonesia and South Africa. The failure to

fulfil the expectations of some parties concerning increased access to nuclear technology, the lack of any reduction in existing nuclear stockpiles of weapons and the absence of stability resulting from a three-month denunciation provision in the treaty are further negative factors affecting the current effectiveness of the NPT regime.

The limitations of the treaty resulting from non-participation were brought sharply to the attention of the international community in 1974 by India's explosion of a nuclear device. At about the same time, the oil crisis accelerated the search by both developed and developing countries for alternative sources of energy. Consequently, the importance of the NPT commitment by nuclear-suppliers to facilitate access to nuclear technology was enhanced in the minds of energy-poor developing countries. Stringent safeguards, on the other hand, were regarded by some states as unnecessary and discriminatory obstacles to their access to much-needed nuclear energy.

The oil crisis heightened international awareness of the finite nature of the world's fossil-fuel resources. It also made large consumers of energy much more aware of the political and economic consequences of dependence upon foreign sources, thereby placing a premium on energy independence. These two factors combined to focus interest on the recovery and re-use of the plutonium produced in all nuclear-power reactors. Such re-use can increase several times the energy obtained from a given quantity of uranium. Increased emphasis was placed on a new generation of reactors, the "fast-breeder", which is fueled with plutonium and actually produces more plutonium than goes into the reactor as fuel. Since plutonium is a basic ingredient of nuclear weapons, these developments presented new and serious proliferation problems. The "plutonium economy" could result in the stockpiling of quantities of plutonium larger than those contained in the existing weapons-stockpiles of all nuclear-weapon states.

#### Indian explosion

The detonation of a nuclear device by India in May 1974 greatly complicated efforts to implement nuclear-energy programs. It created widespread uncertainty about the effectiveness of international arrangements to prevent proliferation. The international community's response to this challenge was slow to emerge, but Canadian public opinion at all levels was deeply disturbed that Canada's nuclear co-operation with India had been diverted to the development of an explosive capacity. The Indian