

International safeguards

Safeguards and non-proliferation: geography, prospects, problems

by D.A.V. Fischer*

A few years ago it looked as though we were nearing the end of the NPT line and that few, if any, further accessions to the Treaty could be expected. The countries that had chosen not to join it were in areas of political tension, or had set themselves against the Treaty for reasons of principle, or were simply not showing any interest in it.

This pessimism proved unfounded. During the last two years several important countries have acceded to the Treaty. Significantly they are all developing countries: Bangladesh, Barbados, Egypt, Indonesia, Sri Lanka, and Turkey. At least three are in regions in which there has been repeated armed conflict since the Second World War. Their willingness to forego nuclear weapons and accept full-scope safeguards is all the more important.

When a country accedes to the NPT it must (except in the case of a nuclear-weapon State) conclude a safeguards agreement within eighteen months of its accession (Article III.4). During the last two years several such agreements have indeed entered into force, for instance, with Indonesia, Libya, Senegal, and Turkey

As a result there is today only one country that is operating a nuclear facility and which has not yet brought the required safeguards agreement into force within the prescribed time. This is Venezuela. However, the only nuclear facility in operation in Venezuela, the RV-1 research reactor, is under IAEA safeguards by virtue of a previous trilateral agreement concluded with Venezuela and the United States in 1968. Thirty-five other countries are also overdue in concluding their safeguards agreements, in twenty-one cases more than ten years overdue. Apart from Venezuela, none of these countries is building or operating any nuclear facility and the absence of an agreement has thus no practical consequences except that, in one case at least, the Agency is not receiving the reports on exports of uranium ore that would be required by the agreement. Moreover, the obligation to conclude a safeguards agreement within the specified time is a legal requirement and should not be disregarded.

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Non-NPT safeguards It should also be noted that one State which was previously listed as a party to the NPT, Viet Nam, has confirmed that it did not become party to the Treaty by succession to the former "Republic of Viet Nam". It has however, placed its only nuclear facility, a small research reactor, under safeguards.

Outside the framework of the NPT there have been a number of important developments. Agreements concluded with Cuba and Spain during the last two years have brought all nuclear facilities in operation, or under construction in these two countries, under the Agency's safeguards (in the case of Spain all but five facilities were already subject to safeguards).

The first agreement which explicitly brought heavy water under safeguards was one concluded with India in 1977. In October this year, Argentina and the Agency signed two agreements to safeguard heavy water from the USSR as well as a heavy-water production plant supplied by Switzerland. This is the first plant of its kind to come under safeguards. These developments

The 36 non-nuclear-weapon States parties to NPT which on 31 December 1980 had not yet complied with Article III.4 of the Treaty stipulating the last date for the entry into force of the safeguards agreement to be concluded with the Agency

Bahamas	Liberia
Benin	Mali
Bolivia	Malta
Botswana	Nigeria
Burundi	Panama
Central African Republic	Rwanda
Chad	San Marino
Congo	Sierra Leone
Democratic Kampuchea	Somalia
Democratic Yemen	Sri Lanka
Gabon	Syrian Arab Republic
Grenada	Togo
Guatemala	Tonga
Guinea-Bissau	Tunisia
Haiti	Tuvalu
Ivory Coast	United Republic of
Kenya	Cameroon
Lao People's Democratic	Upper Volta
Republic	Venezuela

have made it necessary to elaborate the technical procedures to be followed in safeguarding heavy-water production plants as well as heavy water itself.

Only twelve countries (other than the nuclear-weapon States) which are operating or building nuclear plants, have not acceded to the NPT. In eight of them, however, all nuclear facilities of which the Agency is aware have been placed under IAEA safeguards (Argentina, Brazil, Chile, Colombia, Cuba, the Democratic People's Republic of Korea, Spain, Viet Nam). They are shown on the map in red. Four countries (India, Israel, Pakistan and South Africa) are reported to be operating or constructing unsafeguarded as well as safeguarded facilities. They are shown in yellow.

Recent agreements with Spain have reduced the number of countries operating unsafeguarded facilities from six in 1979 to four today*. There has not, however, been any indication that any of the four remaining countries is likely to accept safeguards on all its nuclear activities. On the contrary, press reports indicate that the number of unsafeguarded plants in these countries will soon increase. Thus, for instance, South Africa is reported to have started the construction of a small commercial enrichment plant (besides its pilot enrichment plant), while Pakistan is reported to be building a reprocessing plant as well as an enrichment plant.

Perhaps the main question in regard to the four countries having unsafeguarded plants (each capable of producing plutonium or highly enriched uranium — i.e. weapons-grade material) is whether they will continue to refrain from taking (or repeating) the momentous step of testing a nuclear explosive. The prospects for the non-proliferation regime will be profoundly affected by their decisions. In a broader perspective we must remember that no country among the non-nuclear-weapon States has carried out a nuclear explosion since 1974, while the nuclear-weapon States are continuing to carry out about fifty weapon tests each year.

Prospects

NPT One may hope that the membership of the NPT will continue to grow, although probably rather slowly. The question of Spain's accession will become topical when it joins the Common Market, as it is due to do in 1984. Many African and some Middle Eastern countries have not yet taken any position on the Treaty. None of them have as yet any nuclear facilities, but Algeria is reported to be planning to acquire a research reactor, and countries like Saudi Arabia, Zimbabwe, Angola, and Mozambique may follow suit in the next decade. Adherence to the Treaty by countries that have no nuclear facilities but are important producers of uranium like Niger, and eventually Namibia, would also

be significant. Article III.2 of the Treaty requires every party to ensure that IAEA safeguards are applied in relation to all "equipment or material especially designed or prepared for the processing, use, or production of special fissionable material" that they export to any non-nuclear-weapon State. This, of course, also covers exports of yellow-cake.

A widely deplored event which could influence the future of the non-proliferation regime was the bombing on 7 June this year of the Iraqi research reactors. This was the first time that a peaceful nuclear facility became the target of armed attack, and the precedent set is ominous. It is to be hoped that this development will lead nations to call for a further strengthening of safeguards and the non-proliferation regime and will not undermine it. This matter is examined extensively in the article by Mr Gruemm on page 10 of this issue. (See also Dr Eklund's remarks on this matter, reported in Bulletin 23/3, page 3.)

Non-NPT If the prospects of adherence to the NPT by the four countries having unsafeguarded facilities must still be regarded as remote, the best hope for extending the non-proliferation regime in these cases may lie in regional solutions such as nuclear-weapon-free zones coupled with effective safeguards. Although the regions concerned have much to lose and little to gain from the existing situation, the problems lying in the way of such regional solutions are also formidable.

The situation in Latin America is different and more promising. As we have seen, five countries in Latin America that are operating or building nuclear facilities (Argentina, Brazil, Chile, Colombia and Cuba) have chosen so far to remain outside the NPT, offering in most cases reasons of principle for the decision. They have nevertheless placed all their known nuclear plants under IAEA safeguards. The alternative route which the Tlatelolco Treaty* offers for a binding extension of the non-proliferation regime thus becomes all the more important, and one of the countries (Colombia) has already followed it by concluding a safeguards agreement according to the Treaty.

Latin America is the only region in the world free from the burden of nuclear weapons (and of the technologically indistinguishable peaceful nuclear explosives); and the only region in which no nuclear explosion has ever been carried out. It is also the only region in which all nuclear facilities (as far as the IAEA is aware) are already under IAEA safeguards**. This unique advantage could be made permanent and binding if four Latin American States were to bring the Tlatelolco Treaty into full operation, as eighteen of their sister nations have already done. The main remaining

* Assuming that the research reactor in Egypt will shortly be brought under safeguards when the recently concluded NPT safeguards agreement between Egypt and the Agency comes into force

* The Treaty for the Prohibition of Nuclear Weapons in Latin America.

** If Oceania is regarded as a separate region, it also enjoys this distinction.

difficulty preventing the full operation of the Tlatelolco Treaty turns on the question of whether it permits its parties to produce and test their own nuclear explosives "for peaceful purposes", the so-called "PNEs".

There have been several events since the conclusion of the Tlatelolco Treaty in 1967 which may make the path to its full application somewhat easier. In the first place PNEs themselves have lost the lustre they enjoyed at that time, when false hopes were raised about their utility in digging canals, building harbours, developing gas and oil wells, and other major engineering works. Moreover since 1972 two of the main Latin American countries concerned have embarked on major nuclear energy programmes whose implementation would certainly be jeopardized by the construction of unsafeguarded facilities, let alone recourse to PNEs.

Finally, co-operation in the nuclear field between the countries concerned is rapidly expanding.

In short, during the last decade the economic incentive to use nuclear explosive technology has diminished almost to vanishing point while the incentive in the countries concerned to refrain from developing this technology has steadily increased.

If the Tlatelolco Treaty is fully applied throughout the region it will be because the countries themselves have perceived that it is in their own interest; any external pressure is likely to be counter-productive.

Problems

As the Second NPT Review Conference showed*, the bonds of confidence between the parties that the Treaty should help to forge are hardly strengthened by the lack of progress in nuclear arms control and in particular by the failure of the nuclear-weapon States to reach agreement on a treaty for the prohibition of all nuclear tests. The Conference also showed that most parties are not satisfied with the manner and extent of implementation of Article IV of the Treaty which

* See report in Bulletin 23/1, page 28

confirms their "right to participate in" as well as their undertaking to facilitate "the fullest possible exchange of equipment, materials and scientific and technological information for the peaceful uses of nuclear energy" and which places a corresponding obligation on the parties to assist each other and particularly the developing countries. It is to be hoped that the work of the Committee on Assurances of Supply will eventually lead to broad agreement about the ways of implementing this article of the Treaty.

Despite the lack of progress in measures of arms control, the Parties clearly continue to regard the Treaty as serving important national interests and it seems unlikely that there will be any significant withdrawal, particularly since such a step might be interpreted as a decision to embark immediately on a nuclear weapons programme.

Another political problem which impedes the effective application of safeguards is the difficulty the Agency often encounters in designating inspectors. Many countries continue to resist designations on the grounds of the inspector's nationality, or the safeguards policies of the country from which he comes, or on grounds of his linguistic qualifications. Such policies are hardly compatible with the letter or the spirit of the Agency's Statute, and can seriously impede the deployment of the relatively small corps of inspectors drawn from 40 countries.

This is not the place to examine the technical problems encountered in the application of safeguards which are analysed in the Agency's annual "Safeguards Implementation Report" and in Mr Klik's article reproduced on page 15 of this issue of the Bulletin. Although such problems may often make it difficult for the Agency to achieve its technical safeguards "targets", the continuing success of the IAEA's safeguards depends to a greater degree on the political will of the Agency's Member States and of other parties to the NPT to ensure that adequate resources are provided for the safeguards operation, and to ensure that safeguards are effectively and impartially applied.

Note: The map to which Mr Fischer refers in his article can be found in the centre pages of this issue of the IAEA Bulletin.