

How to Strengthen the Nuclear Non-Proliferation Treaty

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NPT consists of a complex set of undertakings and obligations, each of which represents in its own right a highly desirable objective that should be pursued whether or not the Treaty itself existed, and irrespective of the success (or lack of it) achieved in pursuit of the other objectives.

These objectives are:

- (a) to prevent the spread of nuclear weapons to countries other than the five that possessed them at the end of 1966. Obviously, this is the main purpose of the Treaty. It provides the substance of the first three articles and gives the Treaty its name (Arts. I, II, III);*
- (b) to promote international co-operation in developing the peaceful use of nuclear energy, and particularly to help developing countries in this regard (Art. IV);*
- (c) to afford all parties whatever benefits may be derived from the peaceful uses of nuclear explosions (Art. V);*
- (d) to pursue negotiations towards the cessation of the arms race, nuclear disarmament and eventually a treaty on general and complete disarmament, "under strict and effective international control". Although this is not actually said in the relevant article (Article VI), it is generally considered that this obligation falls particularly upon those parties of the Treaty that are "Nuclear Weapon States". (Art. VI)*

The preambular paragraph regarding the "determination expressed" by the parties to the Moscow Test Ban Treaty to seek a complete and perpetual discontinuance of all test explosions of nuclear weapons, is also relevant to the objective of arms control and disarmament. (Art. VI)

Since consummation of each of these objectives is "devoutly to be wished", in Hamlet's words, there should be no question of bargaining or horse-trading between them.

Despite some specious arguments to the contrary, history shows that the possession of superior weapons has never prevented war and a further spread of nuclear weapons must inevitably increase, perhaps in geometrical progression, the likelihood of a nuclear conflict besides involving the participants in expenditures which even the richest can hardly bear. Thus a decision not to enter into the nuclear arms race should in no way be considered a sacrifice on the part of the country concerned, but only reflects sound sense. Equally, the first beneficiaries of a termination of the nuclear arms race would be the nuclear weapon states themselves, although the whole world would breathe a sigh of relief.

Objective No. 1: Non-Proliferation

Aside from the depository governments, the present parties to NPT are either developing countries or industrial countries of Eastern and Northern Europe and of the Commonwealth. At time of writing, not a single major industrial state has yet become a full party to the Treaty. However, this picture could and hopefully shall be greatly changed at an early date. It only requires one governmental action to bring the Treaty into force for the whole of the Western European Economic Community. Outside the EEC, one major industrial state has signed but not yet ratified the Treaty. Until now it has been stated that the main barrier to this ratification has been uncertainty as to whether equality would be achieved in the application of the safeguards regime under NPT. This barrier has now been removed.

Once all the major industrial "non-nuclear weapon States" are parties to the Treaty, its non-proliferation effect will be greatly strengthened. It may be assumed that these States will be as anxious as any others to ensure a steady further spread of the non-proliferation regime.

As a significant number of "threshold" States have elected not to join NPT, a heavy responsibility falls upon the countries which are major suppliers of nuclear materials and equipment. In many industrial countries the market for nuclear power plants has become slack. Demand for nuclear power in other countries is likely to increase. Commercial competition may become acute and with it the temptation to offer "better" terms by reducing requirements for nuclear safeguards. Supply policy is therefore of supreme importance. Progress has been made in reaching agreement on the so-called "trigger list" of items which, if supplied, will require the application of safeguards (either directly or to the nuclear material produced). However, exporting countries could, if they were so determined, go considerably further and require membership of NPT or other arrangements involving the application of safeguards to the complete fuel cycle of the importing country and to its exports as a **condition of supply**. Admittedly, this will not be easy to achieve unless all major exporters are willing to insist on it. It is, nevertheless, eminently worth pursuing. During the last year, it has been alleged that non-NPT countries have been receiving preferential treatment in the matter of exports, and it is obviously essential that such impressions be resolutely dispelled.

Clearly, there are limits to the pressures that can be brought to bear on Governments to join the Treaty. It is significant that most of the "threshold countries" that have not even signed the Treaty are situated in areas of marked political tension. In such cases regional agreements and agreements involving small groups of States, may help to achieve the degree of political assurance that will permit the countries concerned publicly to renounce the "nuclear option" by joining NPT or a similar arrangement. Article VII of NPT refers to the right of States to conclude regional treaties to ensure the total absence of nuclear weapons from their territories. The Tlatelolco Treaty is the first such legal instrument. It provides a valuable supplement to the NPT (although it has been stated that the Treaty contains ambiguities about the development of nuclear explosives for "peaceful purposes"). A further refinement of the idea of nuclear free zones might be examined. Here, one can see scope for a nuclear-free Africa or South Asia, but no one will underestimate the political problems involved.

Objective No. 2: International Co-operation in the Peaceful Uses of Nuclear Energy

It is to achieve this objective — and to help ensure "peaceful use" — that the IAEA was established in 1957. Further strengthening of the IAEA's programmes would be of paramount importance in promoting international co-operation in the field postulated by the Treaty. At this time, four programmes are of particular significance:

- (a) technical assistance and other forms of technical co-operation;
- (b) development of acceptable international safety standards for nuclear plants, especially to assist countries currently embarking on nuclear power programmes;
- (c) siting, safety and economic consultancy services by the IAEA;
- (d) expanded information exchange, possibly through INIS especially in regard to technological information, operating problems and experience.

The IAEA may also be able to play an important role in promoting regional nuclear fuel centres. Economic, safety and safeguards considerations all point to the desirability of such centres and to preventing the proliferation of small, uneconomic nuclear fuel reprocessing and fabrication plants of nuclear waste disposal sites and of the safety problems that such proliferation would bring about. It would, nevertheless, require resolute political efforts, as experience has shown in other cases, to surmount the numerous obstacles to such regional centres.

Another Agency programme which will require more support is the development of standards of physical security, particularly during the transport of nuclear material. Concern about the danger of hijacking, theft and sabotage might seriously inhibit co-operation in developing peaceful uses of nuclear energy.

The IAEA is debarred by its Statute from serving as a source of capital funds. By its economic consultancy services it can serve as a bridge between requesting countries and the world's financing institutes, and more could be done in this direction. The fact must be faced, however, that most of the finance for nuclear power development has come from national institutes and through bilateral channels and that these are likely to remain the chief sources of finance.

Objective No. 3: Making available the Potential Benefits from Peaceful Applications of Nuclear Explosions

This is really a part of the second objective but it is treated quite separately in the NPT. The IAEA is taking all the administrative, procedural and technical steps that can be taken at the international level including the establishment of a unit in the IAEA Secretariat to ensure that any benefits from the peaceful uses of nuclear explosions — the so-called PNE's — are available to its Member States.

- It has had four technical international meetings on the subject promoting the full exchange of information and has included the subject in the International Nuclear Information System.
- It is studying the feasibility and the economics of "PNE" technology and of alternative technologies.
- It is also studying and has made reports on the safety aspects.
- It has established procedures for the "appropriate international observation" of PNE's and it has also established procedures for dealing with PNE services.
- It has taken steps for the study of the international agreement or agreements as well as for the bilateral arrangements mentioned in the NPT.

Clearly, therefore, any non-nuclear-weapon State wishing to arrange for a "PNE" to be carried out on its territory — or to make a feasibility study of such a project — has only to turn to the IAEA to procure the comprehensive package of services that a PNE would

require. While the IAEA has received a few enquiries, it is significant that no request for a "PNE" has yet been made.

This suggests that the answer to the major question is still unclear — what are, in fact, the benefits to be derived at present and in the near future from the peaceful uses of nuclear explosions? Two of the nuclear-weapon States Members of the Agency have not pursued substantial PNE programmes. The third, which had quite a large PNE programme, has virtually suspended it. The fourth continues a significant programme.

The foremost need, it seems, is therefore for a comparative cost benefit and risk benefit evaluation of this technology. In other words, what can PNE achieve and at what cost and what risk compared with conventional explosive technologies.

Such an evaluation is, of course, also desirable in the case of other major technological applications of nuclear energy — power, desalting, ship propulsion, industrial heat, etc. However, the fact that in this case we are dealing with an incomparably powerful explosive and one that is virtually indistinguishable from a nuclear weapon means that far greater weight has to be given to political factors than in any other comparative evaluation. In other words, we should try to make the admittedly difficult judgement whether the potential benefits of the peaceful uses of nuclear explosions, over and above the benefits already obtainable from conventional explosive technology, are so great as to outweigh the obvious political problems involved — the risk that continued development of peaceful nuclear explosive technology will add further difficulties to the task of reaching agreement on a complete nuclear test ban and that PNE may serve as a spur to, or a cloak for further nuclear weapons proliferation.

Objective No. 4: Arms Control and Disarmament

We have lived in a peace maintained by the "balance of terror" for nearly 30 years, and there is a danger that we shall grow so accustomed to this appalling situation that we shall accept it as the normal state of affairs. Will the grandchildren of this generation of diplomats still be sitting around the conference tables in Geneva, Vienna and Helsinki, presenting new schemes or exhuming old ones and after prolonged and usually fruitless discussions, putting them back in the drawer? We must really ask ourselves how much longer this can go on. We have approached the brink of nuclear catastrophe a few times since World War II, and each time we have drawn back, but can we really believe that our luck will hold for generations?

The incalculable benefits to be derived from nuclear disarmament and the obstacles that beset the path towards it need no description here. Nor is this the place to discuss the merits of various disarmament proposals. The following few comments will therefore be confined to what is relevant to the main object of the Non-Proliferation Treaty itself, preventing the further spread of nuclear weapons.

Firstly, it must be said that the continuation of the nuclear arms race and the willingness of the "nuclear weapon States" to spend vast and increasing sums on ever more sophisticated and more deadly weapons strengthen the hands of the "hawks" in the States that do not have nuclear weapons (especially those that are still outside the NPT) and lend weight to their arguments.

The measure of control that would clearly be of most direct benefit and relevance to non-proliferation would be a complete and permanent ban on testing of nuclear weapons. In view of the difficulty of distinguishing between nuclear explosive devices and nuclear weapons, it might be desirable to extend such a ban to all nuclear explosive devices, and to

make provision for prior international approval of specific permitted exceptions (provided that we judge PNE technology to be truly worth the problems involved in making such exceptions).

The prospects of an early total ban on nuclear testing may be still small, but progress in this direction by the rapid introduction of progressively more restrictive limits on the size and number of "permitted" underground tests that might be carried out each year would keep alive the hope that there will one day be a complete "phasing out" of nuclear testing.

Other proposals discussed from time to time would also have a bearing on NPT, for instance, a cut-off of further plutonium production for military purposes and the submission of relevant facilities in the nuclear-weapon States to IAEA inspection. In fact, the willingness of the nuclear-weapon States to accept IAEA inspection in their peaceful programmes is already a factor positively influencing the attitude of certain non-nuclear-weapon States towards the NPT.

A further comment I would like to make concerns the so called "nuclear controversy". Persons concerned about the environmental impact of nuclear power and about the amount of energy that goes into the building and fuelling of a nuclear power plant have so far concentrated their fire on the peaceful nuclear industry, not without effect. It is extremely surprising however, that the "environmentalists" pay so little attention to nuclear weapons and nuclear powered naval vessels. The consequences of the "maximum credible accident" that could occur through human or mechanical failure in the control of nuclear weapons not to mention their ultimate use as engines of destruction are almost infinitely greater than those that could occur as the result of, for instance, a core melt-down coupled with the failure of all the safety mechanisms in a peaceful nuclear plant. As we all know, there are tens of thousands of nuclear war-heads and several hundreds of nuclear missiles, besides about 200 nuclear submarines. If all the considerable weight of public opinion that environmentalists have been able to mobilise in regard to peaceful nuclear power could be deployed in favour of nuclear arms control and disarmament, might we not see much more rapid progress in nuclear disarmament?

In conclusion the importance of pressing ahead vigorously to achieve each of the objectives of NPT should be stressed again. IAEA is concerned chiefly with the first two aims — preventing further proliferation and promoting international co-operation in the peaceful uses of atomic energy. No one, however, should be indifferent about the other objectives. No one pretends either that the NPT is the perfect treaty but it is the most and best that mankind has been able to achieve in 30 years of disarmament and arms controls negotiations. If it were really to fail in its main objective, the entire cause of disarmament would suffer an immense setback and the world would face a severe political crisis.