INTERNATIONAL CO-OPERATION ON PEACEFUL USES OF NUCLEAR ENERGY
IN THE CONTEXT OF THE TREATY ON THE NON-PROLIFERATION
OF NUCLEAR WEAPONS

Paper prepared by the Secretariat
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I. INTRODUCTION

Since the beginning of the nuclear era, man's main problem has been that of turning his conquest of nuclear energy towards peaceful rather than destructive ends. During the recent negotiations on a treaty to prevent the spread of nuclear weapons, one of the major concerns of the States not possessing nuclear weapons, especially those with advanced civilian nuclear programmes, has been to ensure that adherence to the treaty would in no way jeopardize their pursuit of the peaceful atom. Their main apprehensions were that the inspection clauses of the non-proliferation treaty might hamper research and development of peaceful uses of nuclear energy; that international inspection might be perverted into industrial espionage; that under the treaty the non-nuclear-weapon Powers might be deprived of a continuing supply of source or special fissionable material or equipment for peaceful purposes; and that by denying to the non-nuclear-weapon Powers the right to conduct peaceful nuclear explosions the treaty would further jeopardize their civilian nuclear programmes. They also expressed concern that the technological gap between the nuclear and non-nuclear-weapon Powers might further widen and that the "spin-off" accruing from a military nuclear programme might by-pass them. These concerns were reflected in a number of amendments proposed to the draft treaty by some of the non-nuclear-weapon Powers in the Eighteen-Nation Committee on Disarmament (ENDC).

The nuclear Powers, for their part, made considerable efforts to allay these fears. As negotiations on a non-proliferation treaty went on, the nuclear Powers undertook progressively stronger obligations to help promote development of peaceful nuclear energy in non-nuclear-weapon countries and to make available the benefits flowing from the peaceful applications of nuclear technology, including explosive devices.

II. RIGHTS OF PARTIES TO THE NON-PROLIFERATION TREATY

The early drafts of a treaty to prevent the spread of nuclear weapons by the United States (ENDC/152 and Add.1) and the Union of Soviet Socialist Republics (A/5976, ENDC/164) did not include specific provisions concerning the peaceful uses of nuclear energy. However, the identical draft treaties submitted by the United States and the USSR on 24 August 1968 (ENDC/192 and ENDC/193) provided in article IV that nothing in the treaty should be interpreted as affecting "the inalienable right of all the Parties to the Treaty to develop research, production and use of nuclear
energy for peaceful purposes without discrimination", as well as the right of the Parties "to participate in the fullest possible exchange of information for ... the further development of the application of nuclear energy for peaceful purposes."

These provisions were discussed in the ENDC during the following months and, as a result, the United States and the USSR introduced amendments to article IV of their identical drafts and added a new article V (ENDC/192/Rev.1 and ENDC/193/Rev.1 of 18 January 1968).

The main change in article IV was the addition of a provision by which Parties to the Treaty in a position to do so would "co-operate in contributing alone or together with other States or international organizations to the further development of the applications of nuclear energy for peaceful purposes, especially in the territories of non-nuclear-weapon States Party to the Treaty".

The new article V dealt with the question of benefits from peaceful applications of nuclear explosions. It stated that each Party to the Treaty undertook to co-operate to insure that potential benefits from any peaceful applications of nuclear explosions would be made available through appropriate international procedures to non-nuclear-weapon States Parties to the Treaty on a non-discriminatory basis and that the charge to such Parties for the explosive devices used would be as low as possible and exclude any charge for research and development. Non-nuclear-weapon States Parties to the Treaty so desiring might, pursuant to a special agreement or agreements, obtain any such benefits on a bilateral basis or through an appropriate international body with adequate representation of non-nuclear-weapon States.

On 14 March 1968, the USSR and the United States submitted to the General Assembly a joint revised text (ENDC/225) which incorporated a number of views and proposals presented by various members of the ENDC. The revisions did not affect, however, articles IV and V. Nevertheless, at the resumed twenty-second session of the General Assembly the USSR and the United States agreed to certain final revisions of the text of the draft treaty on the non-proliferation of nuclear weapons including articles IV and V.

In article IV an important change was made to the effect that all the Parties to the Treaty would not only undertake to facilitate and have the right to participate in the fullest possible exchange of scientific and technological information for the peaceful uses of nuclear energy, but also in the fullest possible exchange of equipment and materials. At the same time, the language of article V
was revised to make it reflect more closely the views of non-nuclear-weapon countries. As a result, the final version of the two articles, as incorporated into the Treaty on the Non-Proliferation of Nuclear Weapons (A/RES/2373 (XXII) of 12 June 1968), read as follows:

**Article IV**

1. Nothing in this Treaty shall be interpreted as affecting the inalienable right of all the Parties to the Treaty to develop research, production and use of nuclear energy for peaceful purposes without discrimination and in conformity with articles I and II of this Treaty.

2. All the Parties to the Treaty undertake to facilitate, and have the right to participate in, the fullest possible exchange of equipment, materials and scientific and technological information for the peaceful uses of nuclear energy. Parties to the Treaty in a position to do so shall also co-operate in contributing alone or together with other States or international organizations to the further development of the applications of nuclear energy for peaceful purposes, especially in the territories of non-nuclear-weapon States Party to the Treaty, with due consideration for the needs of the developing areas of the world.

**Article V**

Each Party to the Treaty undertakes to take appropriate measures to ensure that, in accordance with this Treaty, under appropriate international observation and through appropriate international procedures, potential benefits from any peaceful applications of nuclear explosions will be made available to non-nuclear-weapon States Party to the Treaty on a non-discriminatory basis and that the charge to such Parties for the explosive devices used will be as low as possible and exclude any charge for research and development. Non-nuclear-weapon States Party to the Treaty shall be able to obtain such benefits, pursuant to a special international agreement or agreements, through an appropriate international body with adequate representation of non-nuclear-weapon States. Negotiations on this subject shall commence as soon as possible after the Treaty enters into force. Non-nuclear-weapon States Party to the Treaty so desiring may also obtain such benefits pursuant to bilateral agreements.

**III. GENERAL ASSEMBLY DEBATE ON ARTICLE IV**

The final agreement on the text of the Treaty on the Non-Proliferation of Nuclear Weapons was facilitated by the debate of the General Assembly at its resumed twenty-second session from 24 April to 12 June 1968. It may be useful, therefore, to review that debate as far as articles IV and V of the Treaty are concerned.

The United States stressed that, apart from the use of nuclear explosive devices, the Treaty would in no way limit the freedom or capacity of its signatories to develop peaceful applications of nuclear energy. The United States had shared and
would continue to share, through IAEA, EURATOM and other international channels, the knowledge it had gained about peaceful uses of nuclear energy, including "materials" and "equipment". The United States had indeed no reservations about equitably sharing such a knowledge and experience and facilitate the fullest possible exchange of equipment, materials and scientific and technological information, including "very important new developments in electrical power generation, in agriculture, in medicine, in industry and in the de-salting of sea-water".

The USSR declared that the Treaty on the Non-Proliferation of Nuclear Weapons opened new vistas for the development of international co-operation in the peaceful uses of atomic energy. Article IV of the Treaty provided a completely new international legal basis for the speedy establishment of comprehensive co-operation between nuclear and non-nuclear-weapon countries. This co-operation would be particularly beneficial for the developing countries in Asia, Africa and Latin America.

The United Kingdom noted that the Treaty, far from restricting co-operation between nuclear and non-nuclear States in the field of peaceful applications of nuclear energy, would encourage and intensify it. In its view, Article IV created a positive obligation on the part of States to contribute to further development of peaceful uses. The United Kingdom would fully discharge its obligations in this respect.

Canada believed that Article IV constituted a kind of charter of rights in the sphere of nuclear science and technology for developing countries. It emphasized that its own experience proved that renunciation of weapons manufacture has no adverse effect on the ability of countries to develop and utilize nuclear energy. Italy, Ireland, Japan, and Romania insisted on the right of all nations to have free access to nuclear materials and equipment and therefore welcomed the relevant provisions which were included in the final version of the Treaty. Japan felt that the purposes of the Treaty would not be achieved if its provisions concerning international co-operation in the peaceful uses of nuclear energy and the sharing of potential benefits from peaceful applications of nuclear explosions were not fully implemented. Ireland urged that in addition to sharing scientific and technological information, the nuclear Powers should accord and financially encourage training for personnel from non-nuclear-weapon countries. This was a matter to which the Conference of Non-Nuclear-Weapon States should give consideration.
Mexico was gratified that its early suggestions had been accepted, namely, that the right of access to and participation in the fullest possible exchange of scientific and technological information should be explicitly mentioned in Article IV.

Pakistan held that the provisions of the Treaty calling on the Parties to contribute to the further development of peaceful uses of nuclear energy with due consideration of the needs of the developing countries, would make for a more equitable balance of responsibilities and obligations of nuclear and non-nuclear-weapon States.

Sweden thought that all "key countries", i.e. potential nuclear powers and important suppliers of fissile material, must sign and ratify the treaty in order to reduce discrimination in the field of peaceful nuclear energy.

Australia understood that under the Treaty no nuclear activity in research, development, production or use was prohibited nor could the supply of knowledge, materials and equipment be denied to non-nuclear-weapon countries until it was clearly established that such activity would be used for the manufacture of nuclear weapons or other explosive devices. It stressed, furthermore, that it would be keenly interested to learn how the obligation to co-operate in contributing to the further development of the application of nuclear energy for peaceful purposes would be implemented, bearing in mind that the national policies of some countries had placed restrictions on the free flow of scientific and technological information in the nuclear field. It suggested, therefore, that these policies should be reviewed in order to promote the fullest possible exchange of scientific and technological information for peaceful purposes. Similarly, Belgium stated that in order to make the right of States not possessing nuclear weapons a reality, there must be a commitment by all nuclear Powers to pool their knowledge and experience with the other parties to the Treaty. No assistance in the form of information, material, or equipment should be refused, provided they were used only for peaceful purposes.

Turkey said that the specific commitments entered into by the nuclear-weapon Powers, including the commitment to facilitate the fullest possible exchange of "equipment" and "material", should be sufficient to dispel any doubts concerning inequalities in this field.

A positive view of the Treaty provisions pertaining to peaceful uses of nuclear energy, particularly since they had been strengthened by a commitment to share "materials" and "equipment", was also taken by Afghanistan, Australia, Barbados, Belgium, Chile, Cyprus, Czechoslovakia, Denmark, Ecuador, El Salvador, Ethiopia,
Finland, Indonesia, Iran, Iraq, Israel, Madagascar, Malaysia, Norway, Philippines, Poland, Uganda, Ukrainian Soviet Socialist Republic, Venezuela and Yugoslavia.

On the other hand, India felt that there was no binding commitment or a positive juridical obligation in the Treaty to provide assistance, since the undertaking was only to "co-operate". It felt that nations should not only share in benefits but also acquire the knowledge of nuclear technology for peaceful purposes. The Treaty created a juridical discrimination between States and it would make a greater part of the world wholly dependent on a few nuclear-weapon States for knowledge and application of this technology. This would tend to widen the technological gap that already existed.

South Africa, while giving assurances that it would do nothing in the context of uranium sales which might contribute to proliferation, stressed that the terms of Articles I and II could, on some interpretations, largely nullify the "inalienable right" to peaceful uses referred to in Article IV. Promises by the nuclear-weapon States of technical co-operation were hardly adequate.

A negative view of the provisions relating to peaceful uses of nuclear energy was taken also by Algeria, Argentina, Brazil, Jamaica, Nigeria, Panama, Rwanda, Spain and Tanzania. In particular, Brazil held that the problem of safeguarding the rights of non-nuclear-weapon countries with regard to the peaceful uses of nuclear energy was a suitable topic for the Conference of Non-Nuclear-Weapon States. This view was supported by Jamaica. Both Jamaica and Panama considered article IV as being too vague and suggested that its substance should be embodied in a separate additional protocol or agreement.

Nigeria thought that article IV did not deal adequately with the problem of bridging the intellectual gap which would be created by the restrictions imposed by articles I and II of the Treaty.

IV. GENERAL ASSEMBLY DEBATE ON ARTICLE V

The USSR stressed that Article V provided strong assurance that peaceful nuclear explosions would be carried out on a non-discriminatory basis and, therefore, could not be used as an instrument of pressure. The provisions of the Treaty gave to non-nuclear-weapon countries a possibility of choice between bilateral or multilateral agreements. Appropriate preparatory work to carry out the provisions of the Treaty concerning peaceful applications of nuclear explosions through an appropriate international body could begin before the Treaty actually came into force.
The United States said that the denial of specialized technology involved in the ban to produce nuclear explosive devices would not retard progress in the peaceful applications of those explosives. The limited amount of "spin-off" from the development of nuclear explosive devices had long since been made available to all countries that might wish to use it. The United States would continue research and development in the use of nuclear explosions for peaceful purposes and pledged to make available to the non-nuclear-weapon Treaty partners, without delay and under the Treaty's provisions, the benefits of such explosions. Such benefits would be provided through multilateral or bilateral channels under appropriate international observation and through appropriate international procedures. The language of article V contemplated a basic agreement defining the functions of an appropriate international body with adequate representation of non-nuclear-weapon States. This primary agreement should be negotiated promptly.

The United Kingdom observed that by giving up the right to develop peaceful nuclear explosion technology, signatories would be creating for themselves a very great potential benefit derived at enormous cost by the nuclear Powers. The United Kingdom itself was likely to eschew development of nuclear explosion technology due to reasons of economy and practicability. Canada asserted that it had never found its progress in the peaceful uses of nuclear energy impeded by lack of information regarding nuclear weapons or lack of information which might be derived from testing nuclear weapons.

Afghanistan, Australia and Japan were in basic agreement that, until science one day succeeded in identifying a peaceful nuclear explosive as distinct from a weapon, there was no alternative than to be content with the present formulation of Article V. Australia and Japan stressed, however, that the Non-Proliferation Treaty must not impede progress in the development and application of the technology of peaceful applications of nuclear explosives. In this connexion, Japan understood that such devices as "fast critical assemblies, reactor excursion experiment facilities, and thermonuclear fusion reactors", would not come under the prohibitions of the Treaty.

Ethiopia, Japan and Mexico shared the view that, if devices were to be discovered in the future which could be used for peaceful nuclear explosions and which could not be used for weapons purposes, the restrictions on the manufacture or acquisition of such devices, as set forth in Article II of the Treaty, could be reviewed accordingly.
Canada, China, Hungary, Iraq, New Zealand, Peru and Sudan stressed that the prohibitions of Articles I and II must apply to all nuclear explosive devices whatever their purpose.

Sweden expressed concern that Article V might impede negotiations on a future treaty banning all underground explosions except those sanctioned by an international body under an agreed international procedure. It could not be permanently accepted that, while the militarily advanced countries received direct benefits of new technologies, others would obtain them only indirectly. In Sweden's view, the international body administering peaceful nuclear explosions should: (1) make feasibility study of proposed project; (2) observe and control its execution; (3) help finance it in under-developed countries. While IAEA would be suitable for the first two tasks, the third task might be handled by the UNDP or the World Bank. It was desirable that all major technological advances should lead to internationalised exploitation of new resources.

Mexico shared Sweden's views on the principal functions of the international body and that its role should be wider than envisaged in Article V. Accordingly, it welcomed the clarifications by the USSR and the United States that the "special international agreement" referred to in Article V would be the basic agreement defining the powers and functions of the appropriate international body, and that the door would be open for the establishment of special agreements between the body and each of the States seeking its co-operation in the carrying out of specific projects. It urged early approval of a draft international agreement to fulfill the provisions of this article and stressed that it must be made very clear that such approval should be given by the General Assembly of the United Nations. Since the General Assembly has to pronounce itself now on the Treaty on the Non-Proliferation of Nuclear Weapons, the further agreement obviously had to be linked to the present draft treaty.

Nigeria, while opposing the idea of bilateral arrangements involving nuclear explosives, felt that whenever bilateralism was allowed, full information on it should be made available to all parties, as an additional safeguard against wilful or inadvertent violations of the treaty.

Malta proposed that, in order to reduce the cost of peaceful nuclear explosions to non-nuclear developing countries, the nuclear-weapon Powers should establish a fund, possibly within the IAEA framework, to provide, free of charge, fellowships and technical assistance in the field of atomic energy.
The settling of the problem of peaceful nuclear explosions on a multilateral basis as the only way for nations without adequate resources to share in potential benefits of such explosions was also supported by Austria, Ceylon, Netherlands, Pakistan, Spain and Yugoslavia. The latter urged that negotiations on the establishment of an international body and the formulation of a draft treaty regulating this question should commence immediately after the signature of the Non-Proliferation Treaty.

Cuba contended that Article V was significantly vague and that there was no assurance that non-nuclear-weapon States would be adequately represented in international machinery supervising peaceful nuclear explosions.

Brazil stressed that in its view the Treaty failed to recognize the rights and obligations of countries, such as the Latin American countries, which had concluded a treaty recognizing the inalienable rights of all its participants to the unrestricted use of nuclear energy for peaceful purposes. Article 18 of the Treaty to Prohibit Nuclear Weapons in Latin America specifically permitted the signatories to carry out nuclear explosions for peaceful purposes under international inspection, either with their own resources or in co-operation with third parties. Similar views were expressed by Argentina and Costa Rica. India also found it disturbing and contradictory that the Non-Proliferation Treaty prevented States from conducting nuclear explosions for peaceful purposes.

On the other hand, Bolivia expressed concern that, due to contradictory interpretations, some Latin American countries regarded the Treaty to Prohibit Nuclear Weapons in Latin America as expressly authorizing peaceful nuclear explosions.

Pakistan took notice of the view that signatories should be permitted to carry out peaceful nuclear explosions under international inspection, either with their own resources or in co-operation with other parties. This question was of first importance to the non-nuclear-weapon States, and it felt the matter could be carefully examined by the Conference of Non-Nuclear-Weapon States.

Jamaica and Panama felt the substance of both Article IV and V should be embodied in a special treaty, encompassing all aspects of nuclear development for peaceful purposes.

South Africa felt that there was no guarantee that benefits promised in Article V would be made available without discrimination.

A negative view of the provisions of Article V was also taken by Spain, Tanzania and Zambia.
V. CONCLUDING REMARKS

This variety of positions did not prevent the General Assembly from reaching agreement on the final text of articles IV and V as quoted above. There was no separate vote on any of the provisions of the Treaty on the Non-Proliferation of Nuclear Weapons, but the Treaty, as a whole, was commended by the General Assembly in resolution 2373 (XXII), by a vote of 95 to 4 (Albania, Cuba, United Republic of Tanzania and Zambia) with 21 abstentions (Algeria, Argentina, Brazil, Burma, Burundi, Central African Republic, Congo (Brazzaville), France, Gabon, Guinea, India, Malawi, Mali, Mauritania, Niger, Portugal, Rwanda, Saudi Arabia, Sierra Leone, Spain and Uganda).

As regards the implementation of article IV of the Treaty, two positive tasks are involved. First, all Parties to the Treaty are to facilitate the fullest possible exchange of equipment, materials and scientific and technological information for the peaceful uses of nuclear energy. Second, all Parties to the Treaty in a position to do so are to co-operate in contributing alone or together with other States or international organizations to the further development of the applications of nuclear energy for peaceful purposes, especially in the territories of non-nuclear-weapon States Parties to the Treaty, with due consideration for the needs of the developing areas of the world.

The implementation of article V raises the question, on the other hand, of a special international agreement or agreements and of an appropriate international body, with adequate representation of non-nuclear-weapon States, through which non-nuclear-weapon States will be able to obtain the potential benefits from any peaceful applications of nuclear explosions. Moreover, non-nuclear-weapon States Parties to the Treaty so desiring may also obtain such benefits pursuant to bilateral agreements.

Following the adoption of resolution 2373 (XXII) by the General Assembly, the question of the implementation of articles IV and V of the Treaty has been debated, to some extent, at the resumed session of the Eighteen-Nation Committee on Disarmament. The Conference of Non-Nuclear-Weapon States might now consider how the provisions of the articles in question can be made effective without delay and in the best interests of all the countries which are co-operating to avert the danger of the further spread of nuclear weapons.

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