



UNITED NATIONS
GENERAL
ASSEMBLY



Distr.
GENERAL

A/7678 and add.1, 2, 3, 4
29 September 1969
ENGLISH

ORIGINAL: ENGLISH, FRENCH,
RUSSIAN, SPANISH

Twenty-fourth session
Agenda item 31 (b)

CONFERENCE OF NON-NUCLEAR-WEAPON STATES

ESTABLISHMENT, WITHIN THE FRAMEWORK OF THE INTERNATIONAL
ATOMIC ENERGY AGENCY, OF AN INTERNATIONAL SERVICE FOR
NUCLEAR EXPLOSIONS FOR PEACEFUL PURPOSES UNDER APPROPRIATE
INTERNATIONAL CONTROL

Report of the Secretary-General

Pursuant to General Assembly resolution 2456 C (XXIII) of 20 December 1968, the Secretary-General has the honour to transmit herewith to the Members of the General Assembly a report on the establishment, within the framework of the International Atomic Energy Agency, of an international service for nuclear explosions for peaceful purposes under appropriate international control. In accordance with that resolution, the present report has been prepared in consultation with the States Members of the United Nations and members of the specialized agencies and of the International Atomic Energy Agency and with the co-operation of the agency and of the specialized agencies concerned.

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I. INTRODUCTION

1. By General Assembly resolution 2456 C (XXIII), adopted at its 1750th meeting on 20 December 1968, the Secretary-General was requested to prepare, in consultation with the States Members of the United Nations and members of the specialized agencies and of the International Atomic Energy Agency and with the co-operation of the latter and of those specialized agencies that he might consider pertinent, a report on the establishment, within the framework of the International Atomic Energy Agency, of an international service for nuclear explosions for peaceful purposes, under appropriate international control.

2. In conformity with this resolution, the Secretary-General requested the views of Governments on the problem of the establishment of such an international service for peaceful nuclear explosions. A similar request was sent to the Director-General of IAEA. At a session of the Administrative Committee on Co-ordination held in Rome in April 1969, other specialized agencies were also requested to submit pertinent information in their specific fields of interest.

3. The present report is based on the replies received so far from forty Governments and a report by the Board of Governors of IAEA to its General Conference on the Agency's responsibility to provide services in connexion with nuclear explosions for peaceful purposes. Some comments have also been received from the World Health Organization.

4. As further background to this report, it may be noted that the recent interest in peaceful nuclear explosions has been stimulated by the discussions leading to the Treaty for the Prohibition of Nuclear Weapons in Latin America, and by the Treaty on the Non-Proliferation of Nuclear Weapons. Regarding the latter, in the 1968 introduction to his annual report on the work of the Organization, the Secretary-General said:

"... the Treaty not only reaffirms the inalienable right of non-nuclear-weapon States to develop research and the production and use of nuclear energy for peaceful purposes without discrimination; it also provides that all parties to the Treaty are 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. In particular, the Treaty provides that, under appropriate international procedures, potential benefits from any peaceful applications of nuclear explosions will be made available 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 will be as low as possible and will exclude any charge for research and development."

5. The substantive parts of replies from Governments are given in section II and the report of IAEA is reproduced in section III. A brief summary of the views expressed is given in the following paragraphs.

6. In their answers many Governments gave their views on the future role of peaceful nuclear explosions. The predominant view was that this technology was at an early stage of development and that continued studies were required. However, the expectation was that in the future, nuclear explosions might be used with advantage in both developed and developing countries for large-scale engineering projects, such as excavation of canals and building of tunnels, or recovery of gas, oil and minerals from low-grade or otherwise inaccessible deposits. ^{1/} The Secretary-General shares this optimism and trusts that the awesome power of nuclear explosions can soon be harnessed to the benefit of all mankind.

7. In replies from Governments on the question of the establishment of an international service for peaceful nuclear explosions, as called for in resolution 2456 C (XXIII), most States expressed themselves in favour of IAEA being assigned the duties of the future international service. However, some countries qualified their views to this effect by suggesting that a special body should ultimately be established within the framework of IAEA. A few countries, favouring the establishment of a special body, did not indicate whether it should be organized inside or outside the Agency.

8. Those Governments believing without qualification that the IAEA should be assigned the duties of the international service tended to base their response on the technical competence and the statute of the Agency as making it the proper organization to perform the international functions of the envisaged service. These replies often referred to and were in general accord with the report of the IAEA Board of Governors which contains an analysis of the statutory objectives and functions of the Agency as well as the scope of its technical competence in connexion with the peaceful use of nuclear explosions.

9. At the same time, some Governments also observed that specific responsibilities would evolve only in the course of time and that the question of organization of the service should accordingly be kept under periodic review. This qualification is also in general accord with the IAEA report, which listed its own current modality for dealing with nuclear explosions and suggested that it be periodically reviewed. The opinion that the time may not yet have come for final and binding decisions to be taken with regard to all aspects of the question was stressed by some of those that expressed doubt that all functions of the international service should be delegated to IAEA as well as by those advocating that the Agency be assigned complete responsibility.

10. The IAEA was viewed by some States as a clearing-house for projects proposed by the non-nuclear-weapon States to be submitted to countries in a position to supply the equipment and services required. The opinion was also expressed that the IAEA could serve as the organ which, as provided for in article V of the Treaty on the Non-Proliferation of Nuclear Weapons, would exercise appropriate international observation over peaceful nuclear explosions undertaken for non-nuclear-weapon States parties to the Treaty. According to a number of States,

^{1/} A discussion of nuclear explosions for peaceful purposes is also contained in the report of the Secretary-General on contributions of nuclear technology to the economic and scientific advancement of the developing countries (A/7568).

both nuclear and non-nuclear, the Agency would have to exercise the functions of intermediary between future users of nuclear explosives and the possessors of such explosives, since the nuclear devices would remain under the authority and control of the nuclear-weapon States.

11. A number of countries commented on the question of rights of access to benefits from the peaceful use of nuclear explosions. The Treaty is quite explicit on this matter in that it clearly provides that non-nuclear-weapon States parties to the Treaty shall be permitted non-discriminatory access to benefits from peaceful nuclear explosions. This was confirmed by the USSR and the United States, who stated in their replies that they would render assistance to other countries parties to the Treaty regarding peaceful application of nuclear explosions in accordance with article V of the Treaty.

12. Some States would prefer that access be restricted to those signing the Treaty or equivalent instruments renouncing nuclear weapons. Conversely, some other States had explicitly supported the rights of member States of IAEA to non-discriminatory access to benefits offered by nuclear-weapon States, members of that Agency, and the rights of States to these benefits through bilateral arrangements.

13. Some replies emphasized that the special international agreement mentioned in article V of the Treaty should not be prejudged by the IAEA study but should be worked out separately; the Eighteen-Nation Committee on Disarmament was suggested for the purpose, but it was also proposed that the signatories of the Treaty should deal with the matter among themselves. Those States which expressed this view also took exception to the assumption, supported by most of the Governments which replied, that IAEA is necessarily the "appropriate international agency" mentioned in article V. The IAEA should, it was argued, regulate all nuclear explosions for peaceful purposes, an opinion which was opposed by those who considered the role of the "appropriate international agency" as permissive rather than mandatory.

14. On the other hand, in the replies of some Governments, the opinion was expressed that the scope of the activities of the international service for peaceful nuclear explosions should be wider than that provided by article V of the Treaty and those Governments felt that the service should not be confined to the restricted scope of article V but must concern itself with the problem as a whole, which encompasses a wide spectrum of issues ranging from feasibility studies to problems of supervision and control of experimental and application explosions.

15. Many countries emphasized the fact that the international service should make arrangements for safety reviews of the projects involving the use of peaceful nuclear explosions, citing the IAEA safety reviews of reactor projects as a precedent. The relationship between such safety reviews and mechanisms for enforcing the Treaty banning nuclear weapon tests in the atmosphere, in outer space and under water, signed in Moscow, was also referred to by some countries. The possibility was mentioned that the Moscow Treaty would require reinterpretation in order to permit surface explosions for peaceful purposes; the United Nations, IAEA, and the States parties to the Moscow Treaty have all been suggested as suitable bodies to formulate such a reinterpretation. It was also noted that questions of risk evaluation arise in connexion with the problems of

radiation exposure of populations, radioactive contamination of the environment, changes in the ecology due to radiation, etc. The World Health Organization has expressed its interest in assisting in the international evaluation of these and related risks.

16. Finally, it should be noted that one nuclear-weapon State, the United States, concluded its reply with a statement that no shortage of nuclear explosive devices for peaceful nuclear explosions was anticipated, thereby implying that an international review of peaceful nuclear explosion projects would not be necessary from the point of view of availability of those devices.

17. The general conclusion of the Secretary-General, having regard to all the arguments presented, is that the technical expertise and statutory provisions of IAEA are convincingly supported, and favours the view that the Agency take on the role of the international service for the peaceful uses of nuclear explosions. He considers, however, that the specific functions to be included in the service would evolve gradually after continued international discussion, which should take place both within the framework of the IAEA, the United Nations and possibly other organizations.

II. REPLIES FROM GOVERNMENTS

18. The substantive paragraphs of the replies received from Governments as of 25 September 1969 are reproduced below:

AFGHANISTAN

/Original: English/

In order to ensure the benefit from the peaceful application of nuclear explosions to non-nuclear-weapon States, the Government of Afghanistan is in general agreement with the establishment, within the framework of the International Atomic Energy Agency, of an international service for nuclear explosions for peaceful purposes, under appropriate international control.

AUSTRALIA

/Original: English/

The Australian Delegation to the twenty-third session of the General Assembly abstained from voting upon resolution 2456 (XXIII) not because it disagreed in principle with the preparation of the report requested therein but because it felt that such a study in effect would amount to duplication of work that IAEA had already commenced.

In note No. 0/452-6 of 13 March 1969, the Director-General of IAEA conveyed to members of the Agency a request for comments on the procedures the Agency might employ in regard to the peaceful use of nuclear explosions.

In view of the close relation between the study sought in resolution 2456 C (XXIII) and the work in progress in IAEA, the Permanent Representative of Australia has the honour to convey a copy of the comments which the Australian Government has submitted to the Director-General of the Agency in response to his letter of 13 March 1969.

Comments by the Australian Government submitted to the Director-General of IAEA in response to the Director-General's note No. 0/452-6 of 13 March 1969:

At this stage, the Australian Government feels in principle that IAEA should not seek to become a central authority, or assume a controlling role, in the provision of peaceful nuclear explosions, except when both the donor and the recipient countries concerned request this.

It is desirable, however, that the Agency should proceed with its consideration of procedures for the provision of peaceful explosions, and the part that it might duly play in that provision. In our view, such an examination is a legitimate function of IAEA.

The Australian Government has studied the proposals of the Director-General of IAEA, contained in documents GOV/1320 and GOV/1320/Add.1. It agrees that it would be logical to regard IAEA as the appropriate international body, under article V of the Treaty on the Non-Proliferation of Nuclear Weapons, through which non-nuclear-weapon States parties to the Treaty should be able to obtain the benefits of any peaceful applications of nuclear explosions. Accordingly, it commends the initiative of the Director-General in initiating studies of the procedures the Agency should employ in performing such a role.

At the same time, the Australian Government re-affirms its view that non-nuclear-weapon States parties to the Treaty should also be able to obtain the benefits of such explosions pursuant to bilateral agreements with nuclear-weapon States, without the need to have direct recourse to the international body envisaged under article V. We are gratified to see the recognition of bilateral agreements in GOV/1320 paragraph IV.

It considers that the Agency's initial efforts should be directed towards the organization of an efficient and comprehensive information and advisory service about the application and technology of peaceful nuclear explosions. To help it with this work, it may be desirable to identify panels of international specialists whose advice would be available upon request. At this stage, it would not seem necessary for the Agency to establish its own staff of experts for this purpose.

Australia commends the Director-General for his analysis in documents GOV/1320 and Add.1. The concept of the Agency's role expressed in these documents is in close accord with our own views. The Ad Hoc Committee should maintain this general concept. The Agency should not have direct powers to intervene, adjudicate or arbitrate in matters of peaceful nuclear explosions unless requested to do so by both parties concerned.

The functions of the Agency, as set out in those documents, envisage that availability of Agency services will be a matter of choice by interested parties rather than an obligation of any kind. Such a system would make for efficiency and economy without overburdening the Agency's finances. The assumption of any wider role by the Agency would have undesirable budgetary implications.

In offering the foregoing comments, the Australian Government has in mind that consideration of the machinery for the provision of peaceful nuclear explosions is at an initial and exploratory stage.

Accordingly it reserves the right, as necessary, to submit further comments or to revise in the light of developments those made above.

BELGIUM

/Original: French/

During the discussions at the General Conference of IAEA in September 1968, at the Conference of Non-Nuclear-Weapon States at Geneva and in the United

Nations General Assembly, Belgium upheld the argument that international services for nuclear explosives for peaceful purposes under appropriate international control should fall within the competence of IAEA.

In view of the raison d'être of those services, the Agency should act above all as an intermediary between future users of nuclear explosives for peaceful purposes, on the one hand, and the States which possess explosive devices, on the other.

The Agency should also keep itself informed of the result of experiments conducted, without, however, itself undertaking research programmes.

It should collect all types of scientific, technical and economic information so that the Member States would be able to make use of it at the proper time, under appropriate international control.

BRAZIL

/Original: English/

Current and foreseeable progress in the field of the peaceful applications of nuclear explosions indicates great potential in their use as a means of accelerating economic development, especially in the prospecting and working of ore beds and the execution of major works in geographic engineering.

Under these circumstances, it is necessary to assure the non-nuclear-weapon States full access to all benefits resulting from the application of this powerful technological resource.

Within the United Nations, the best form of international co-operation to achieve this objective would be the establishment, under IAEA, of an "international service for nuclear explosions for peaceful purposes", which would enable the Agency to fulfil its obligation, pursuant to its by-laws, to promote and assist research in, and the development and application of nuclear energy for peaceful purposes to benefit the non-nuclear-weapon States.

In the regulations governing the aforesaid "service", there should be clearly defined:

(a) The obligation of the nuclear-weapon countries to supply, through the International Atomic Energy Agency, the nuclear explosives for peaceful purposes required for the execution of specific projects formulated by the non-nuclear-weapon States, and approved by the Agency;

(b) The right of all the non-nuclear-weapon States which are members of IAEA, to obtain through the Agency, the execution of these explosions for peaceful purposes in a non-discriminatory manner and the lowest possible prices, which would not include the costs of research and development involved in the explosive devices used.

Lastly, in the understanding of the Brazilian Government the fact that a non-nuclear-weapon State which is a member of IAEA benefits from the "service"

should not preclude its right to manufacture and detonate - either by its own means or through agreements with other nations whether nuclear or non-nuclear - nuclear explosives for duly substantiated peaceful purposes under adequate control and international supervision. Thus also the establishment of the "service" within IAEA should not preclude the eventual creation of "services" for the same purpose within regional bodies.

BULGARIA

/Original: French/

The People's Republic of Bulgaria considers that IAEA is the appropriate international organization to assume the functions of the international body to be concerned with the peaceful applications of nuclear explosions under article V of the Treaty on the Non-Proliferation of Nuclear Weapons.

In view of the legal responsibilities and technical competence of the Agency and the existing procedures for assistance to Member States, Bulgaria considers that future activities of IAEA in connexion with nuclear explosions for peaceful purposes would be in keeping with its purposes and functions, which are directed towards strengthening and expanding the contribution of atomic energy to the cause of peace, public health and well-being throughout the world. The IAEA would be technically qualified to assume the functions of the international body referred to in article V of the Treaty as well as the international control functions referred to in the same article.

BURMA

/Original: English/

The Government of the Union of Burma is generally in accord with the view that IAEA in virtue of its statutory functions and experience provides the appropriate framework through which the benefits of peaceful application of nuclear explosions can be routed to the international community of non-nuclear-weapon States, bearing in mind that in carrying out its functions the Agency shall not make assistance subject to any political, economic, military or other conditions incompatible with the provisions of its Statute. The Government of the Union of Burma feels that it is perhaps premature at this stage to make specific recommendations concerning the establishment, within the framework of IAEA, of an international service for nuclear explosions for peaceful purposes, under appropriate international control.

The development of the technology of nuclear explosions for peaceful applications is still in the experimental and investigatory stage before it can become a practical proposition without security and health hazards to human society. It is also a matter which entails careful and considered international examination in respect of a prospective comprehensive test ban treaty before any definitive formulation can be envisaged.

Accordingly the Government of the Union of Burma, is of the view that the Agency's role should initially be devoted to the co-ordination of research and to the exchange and dissemination of information relating to the application and technology of peaceful nuclear explosions, functions which the Agency can legitimately perform within the framework of its Statute.

CAMBODIA

/Original: French/

The Royal Government of Cambodia has no objection to the establishment, within the framework of IAEA, of an international service for nuclear explosions for peaceful purposes under appropriate international control.

CANADA

/Original: English/

At the Conference of Non-Nuclear-Weapon States and at the twenty-third session of the General Assembly of the United Nations, Canadian representatives expressed the view that IAEA should be the "appropriate international body with adequate representation of non-nuclear weapon States" envisaged in the Treaty on the Non-Proliferation of Nuclear Weapons in the context of the administration of peaceful nuclear explosions. Canadian representatives have since participated in the work of an "ad hoc" committee established by IAEA to consider the role of the Agency in the future administration of peaceful nuclear explosions.

The preliminary views of the Director-General of IAEA regarding the role of the Agency in the administration of peaceful nuclear explosion services were outlined in IAEA document GOV/1320 of 13 January 1969. The Canadian Government was in basic agreement with this analysis prepared by the secretariat of IAEA but made a number of suggestions. The views of the Canadian Government were circulated by the Board of Governors in IAEA document GOV/COM.21/1/Add.4 of 2 June 1969. A copy of an excerpt from this document outlining Canadian views is attached and these comments are believed to be relevant to the report being prepared by the Secretary-General. The report of the IAEA Board of Governors to the General Conference (GOV/COM.21/3) has Canada's support and should, we believe, be taken fully into consideration in the Secretary-General's study.

Resolution 2456 C (XXIII) requested the Secretary-General's report on the establishment of "an international service for nuclear explosions for peaceful purposes" within the framework of IAEA. Conclusion (d) of the report from the Board of Governors of IAEA to the General Conference suggests that the services which IAEA is in a position to render can be made available through the Department of Technical Operations of the secretariat which has been made the focal point of the Agency's activities in this area. Canada would hope that the report of the Secretary-General would take into account this recommendation since there would appear to be no necessity at this stage for the formal creation of any additional machinery within IAEA. It can be assumed that the Agency will take any necessary steps to strengthen its secretariat for this purpose.

Annex (GOV/COM.21/1/Add.4)

The Canadian Government authorities are in basic agreement with the analysis prepared by the Secretariat. Canada has consistently supported the idea of IAEA playing a major role in relation to the use of nuclear explosions for peaceful purposes and fully concurs in the conclusions reached by the Secretariat's paper that the performance of the functions of the international body referred to in article V of the Treaty on the Non-Proliferation of Nuclear Weapons is within the Agency's technical competence and the terms of its Statute. The Canadian authorities also agree that the Agency's initial activities in this field should be concentrated on the exchange and dissemination of information and that the Agency's wide range of developed procedures for assisting Member Governments can provide the basis for a useful Agency service in regard to the peaceful uses of nuclear explosions.

In regard to the introduction in the Secretariat's paper and the portion dealing with the Statute of the Agency and the Treaty, the Canadian Government authorities note with satisfaction that the Secretary-General has sought the co-operation of the Agency in connexion with the preparation of a report to the General Assembly of the United Nations, pursuant to its resolution 2456 C (XXIII), on the establishment within the framework of the Agency "of an international service for nuclear explosions for peaceful purposes, under appropriate international control". It is the Canadian hope that the Secretary-General will take full account of the Agency secretariat's analysis in the preparation of his report.

In the Canadian view, any such "international service", as referred to in the General Assembly's resolution, would have to be based on a broad concept including the Agency's contribution to initial feasibility studies, the explosion services to be provided by a nuclear-weapon State, the intermediary role of the Agency in helping to arrange the provision of these services by one Member State to another, and supporting technical services, health and safety controls and international observation which could be provided by the Agency. In the Canadian view there would be no need for the creation of new organs in addition to those now provided for by the Agency's statute, although in course of time the secretariat might see fit to establish a separate section to deal with projects of this kind. It is expected that an agreement by the Agency to provide supporting services for the implementation of a peaceful nuclear explosion project would be formalized only after a basic understanding had been reached between the State supplying the principal nuclear explosion services and the receiving State.

In the Canadian view "appropriate international control" of such an "international service" would not involve direct international control of nuclear devices or over decisions as to which States would supply and receive peaceful nuclear explosion services, but rather be directed to the protection of the interests, safety and health of the international community and to providing international observation to ensure nuclear explosive devices used in peaceful nuclear explosion services remained in the custody and under the control of the nuclear-weapon State. It is in this last field that the Agency should have greatest responsibility.

In regard to the latter section of the Secretariat's analysis, dealing with the Agency's work in relation to nuclear explosions for peaceful purposes, it is noted that the services the paper suggests the Agency could provide to Member States in regard to peaceful nuclear explosions are on the lines of those envisaged by the Canadian authorities, that is, they are of the nature of investigatory, intermediary and supporting services which would be provided at the request of Member States and according to priorities set by Member States. It is also understood that any feasibility or other studies undertaken by experts provided by the Agency would not commit the Agency to providing or securing nuclear explosion services. Bearing this in mind, it would be the Canadian view that paragraph 9 (b) (v), which refers to an agreement being concluded between the non-nuclear-weapon State requesting peaceful nuclear explosion services, the nuclear-weapon State which the non-nuclear-weapon State has selected to provide the services, and the Agency, setting forth the terms and conditions under which services would be rendered, should distinguish between peaceful nuclear explosion services to be provided by the nuclear-weapon State and those auxiliary or supporting services which the Agency would provide. Paragraph 11 (c) in the conclusions is perhaps especially in need of clarification in the light of the above considerations. I should like to explain the Canadian viewpoint in this regard more fully.

The Canadian Government authorities agree with the Secretariat's analysis that the technology of nuclear explosions for peaceful purposes is still at an early stage of development and that the Agency's role in the application of this technology for the benefit of Member States is likely to evolve gradually in the years ahead. Given the considerable time lag before the technology may be applied in a practical way, it would be wise to avoid at this time the framing of too rigid definitions of the Agency's role. On the other hand, the Canadian Government authorities believe it is now possible to define the boundaries of the role the Agency should play in making peaceful nuclear explosion services available to Member States. In the Canadian view, it is already clear that the Agency should serve as a body through which arrangements for such services should be made, but that the Agency itself should have no responsibility for the control of nuclear explosive devices or for deciding on or arbitrating between requests for peaceful nuclear explosions. Although the Agency as an intermediary can provide a useful service by channelling requests for peaceful nuclear explosion services from a non-nuclear-weapon State to a nuclear-weapon State (and by providing a wide range of auxiliary services), the Canadian Government authorities do not believe that the Agency should be placed in a position of having to determine priorities between requests of Member States for peaceful nuclear explosion services under the Treaty, or of having to determine potential suppliers of such services. In the Canadian view, it must be left to the requesting State to decide from which nuclear-weapon State it wishes to obtain nuclear explosion services and to the nuclear-weapon State to provide such services, bearing in mind that nuclear Powers party to the Treaty have undertaken to provide peaceful nuclear explosion services on a non-discriminatory basis to non-nuclear-weapon States party to the Treaty. In the Canadian view, no onus should be placed on the Agency to obtain the required nuclear explosion services when the decision to provide these must necessarily rest with the supplying States in accordance with their international obligations.

The Canadian authorities have noted that paragraph 9 (b) (iii) of the Secretariat's analysis states that the priorities for technical assistance as between different projects and classes of projects are to be set by Governments; and that paragraph 9 (b) (v) states that the Agency is to act as an intermediary in arranging for peaceful nuclear explosion services, the nuclear explosive devices remaining in the custody and under the control of the nuclear-weapon State performing the service. While these points have been made in the Secretariat's analysis, it is the Canadian view that these practical and acceptable limitations on the Agency's role in the provision of peaceful nuclear explosion services deserve greater clarification and that specific reference to them should be made in paragraph 11 (c) of the conclusions.

CHILE

/Original: Spanish/

The Government of Chile considers, firstly, that it is helpful to bear in mind that the nuclear policy of non-nuclear-weapon countries has passed through two stages in the United Nations:

(1) The first was basically influenced by the problems facing the nuclear Powers and mankind in general, inasmuch as mankind was seeking to protect itself against the threat of nuclear weapons;

(2) The second, which has only just begun, consists of the search for a constructive policy on the nuclear question which will represent the common position of all non-nuclear countries, which are now seeking to express their views freely with regard to two interrelated interests: safety from nuclear weapons and the widespread peaceful use of nuclear energy for the development of the peoples of the world.

It is on the basis of this constructive criterion that the Government of Chile would like to express its views regarding the preparation of the report which the Secretary-General is called upon to submit to the General Assembly at its twenty-fourth session.

Chile feels that the report should stress the importance of the Conference of Non-Nuclear-Weapon States, held last year in Geneva, which reflected the non-nuclear countries' desire to escape from the "paternalism" of the nuclear Powers in this matter. At the twenty-third session of the General Assembly, Chile was in favour of establishing an ad hoc committee which would be the proper organ for the expression of the concern shown by the non-nuclear countries at the Geneva Conference. Chile considers that such a committee would provide a forum for the free expression of the wishes of non-nuclear countries, untrammelled by what we have referred to as the "paternalism" of the nuclear Powers. Similarly, we consider that this committee would provide the best way of co-ordinating all the bodies which are or may be concerned with the use of nuclear energy for peaceful purposes.

Therefore, although it was not possible to establish such a committee during the twenty-third session of the General Assembly, Chile considers that a further attempt should be made to establish it at the twenty-fourth session.

The specific functions of the committee would include studying ways of achieving greater international co-operation in all peaceful uses of nuclear energy, which would be directed especially to meeting the developing countries' needs, in accordance with the conclusions of the Geneva Conference of Non-Nuclear-Weapon States. The ad hoc committee should also devote itself as a matter of priority to the establishment of an international service for nuclear explosions for peaceful purposes, with appropriate political and technological controls in order to prevent any country from using the peaceful use of nuclear energy as a pretext to develop its nuclear technology along different lines.

We believe that the service, which would be politically responsible to the ad hoc committee, should operate within the framework of IAEA, co-ordinating its administrative and technical functions with IAEA and seeking to make the greatest possible use of co-operation with IAEA, and in particular of the services of the IAEA safeguard system.

Hence, our country considers that both questions - the establishment of an international service and the establishment of the ad hoc committee - are very closely linked.

Our Government would prefer to leave the details regarding the many questions which are involved in this matter for consideration in the debates on the Secretary-General's report in the General Assembly. Nevertheless, we should like the Secretary-General's report to reflect our views regarding the links which we feel the service should have with the ad hoc committee, to which it would be politically responsible, whilst maintaining all kinds of technical relations with IAEA and remaining in close contact with the General Assembly.

DAHOMÉY

/Original: French/

The Government of Dahomey supports the establishment, within the framework of IAEA, of an international service for nuclear explosions for peaceful purposes, under appropriate international control.

DENMARK

/Original: English/

Both the technical competence and the Statutes of IAEA make the Agency the appropriate institution to perform the international functions of the service for nuclear explosions for peaceful purposes mentioned above.

The Agency is also considered to be the proper organization to undertake international supervision of nuclear explosions for peaceful purposes under article V of the Treaty on the Non-Proliferation of Nuclear Weapons.

FEDERAL REPUBLIC OF GERMANY

/Original: English/

From the results of the tests and studies carried out so far, to the extent that they have been made known, it can be presumed that the use of nuclear explosions for peaceful purposes will be of great benefit. A variety of projects ranging from harbour construction to the extraction of mineral resources may be feasible by means of nuclear explosions, if the effects of such explosions can be accurately calculated and the technology of their use safely mastered.

The development of this technology is obviously still in the early stages. It is, therefore, difficult to assess accurately enough just how important such explosions will be. In view of this, it is at present too early to define any specific role for IAEA in the preparation and execution of projects in the field of nuclear explosions for peaceful purposes. This should rather be left for future consideration when more is known about the technological developments.

However, this situation of a starting technology requires all the more a strong effort to compile and disseminate information. Here is a genuine task for the Agency, a task which it is able to perform, as there are well-developed procedures available in the Agency for the exchange of information among Member States on a non-discriminatory basis.

The status of the technology of peaceful nuclear explosions should be discussed at technical meetings. This will include questions of geology, minerology, hydrology, biology, ecology, radiation protection and civil engineering. Such technical meetings may produce recommendations with regard to other research and development work and give consideration to co-ordinated research programmes. Finally, the preparation and use of nuclear explosions for peaceful purposes may give rise to particular legal problems, including the question of liability, which should be studied in good time.

This programme could be expanded to include the provision of assistance to Member States to the extent that the Agency is requested to do so. Indeed, this service would be similar to those established to stimulate the introduction of power reactors in member countries.

The provision and firing of the nuclear device is a matter for nuclear-weapon States. They may provide the device via the Agency or bilaterally.

On the other hand, the planning and execution of nuclear explosions will require extensive, scientific, technical and managerial efforts as well as economic studies, in all of which commercial enterprises including consultant engineers will be interested.

The Federal Republic of Germany is prepared to participate in the Agency's work by sending experts and to render assistance, for instance, in the fields of geology and civil engineering.

The IAEA should take these trends into account. It remains to be seen if a larger-scale effort will be required in the future which would necessitate the setting up of a special organizational unit for nuclear explosions within the Agency.

Attention is drawn to the studies already being undertaken by the Agency of the possible procedures it might follow and the services it might be able to provide.

FRANCE

[Original: French]

The resolution referred to above (2456 C (XXIII)) does not affect the competence of IAEA and is therefore in harmony with the view of the French Government that the Agency has all the de facto and de jure qualifications to deal with such peaceful applications of nuclear energy.

Under article III of its statute, the Agency is authorized to encourage and assist the development of atomic energy for peaceful purposes. The exploitation of the potential offered by nuclear explosions carried out for such purposes is therefore one of its responsibilities.

Furthermore, in view of the part that the Agency will be called upon to play, its existing structure appears to be suitable for the purpose. The establishment of a special service does not therefore seem to be of vital importance. It might be sufficient to establish a "division for nuclear explosions for peaceful purposes" at the appropriate level in the Organization.

IAEA would also be able to give an indication of the benefits that can reasonably be expected from nuclear energy application bearing in mind that it would be unwise at the present time to overestimate the possibilities or to minimize the considerable period of time that will elapse before practical application. When a study has been completed, it would appear that, under the terms of its Statute, IAEA would be the ideal body to exercise control over such explosions so as to ensure that there was no diversion of purpose.

There would be four main features of the part that the Agency might play, particularly in the field of technical assistance, without changing its present structure and procedures:

(1) With regard to meeting the needs of non-nuclear-weapon States, the Agency could act as a clearing house for projects proposed by any one of them and submit them to countries in a position to supply the equipment and services required;

(2) It could be responsible for radiation and seismic safety studies. Consequently, it would also be in a position to give a decision on the possible consequences for the safety of people and property of the projected nuclear explosion;

(3) It would be equally well-placed to carry out research into and encourage applications of nuclear explosions for peaceful purposes and be responsible for circulating the documentation as well as technical and economic feasibility studies;

(4) In the view of the French Government, only an international organization could provide a complete and absolute guarantee which is necessary in the case of such applications of nuclear energy that the carrying out of a nuclear explosion has not led to any transfer of knowledge or materials capable of being used for military purposes. It therefore considers it desirable that any bilateral agreements relating to such projects should be under IAEA control.

Like the majority of other Member States, the French Government has already given its views to the various organs of IAEA responsible for examining this question. It is convinced that if it is considered at meetings of IAEA by highly experienced men with open minds, a satisfactory system will be successfully defined.

INDIA

/Original: English/

The Government of India has given careful consideration to the questions which form the subject matter of resolution 2456 A (XXIII) and other related resolutions. The views of the Government of India in this regard are reproduced below:

Resolution 2456 C (XXIII) adopted by the General Assembly at its 1750th meeting on 20 December 1963 requests the Secretary-General "to prepare a report on the establishment, within the framework of the International Atomic Energy Agency, of an international service for nuclear explosions for peaceful purposes under appropriate international control".

The Government of India has given careful consideration to this problem and is of the view that the IAEA is fully competent to undertake this responsibility. The following articles of the IAEA statute provide the framework within which the Agency can be of assistance to Member States in the field of peaceful nuclear explosions:

(a) Article II of the Agency's statute provides that "the Agency shall seek to accelerate and enlarge the contribution of atomic energy to peace, health and prosperity throughout the world";

(b) Under article III.A.1 the Agency is authorized "to encourage and assist research on, and development and practical application of, atomic energy for peaceful uses throughout the world; and, if requested to do so, to act as an intermediary for the purposes of securing the performance of services or the supplying of materials, equipment, or facilities by one member of the Agency for another...."

(c) Article III.A.2 also authorizes the Agency "to make provision in accordance with this Statute, for materials, services, equipment, and facilities to meet the needs of research on, and development and practical application of, atomic energy for peaceful purposes, including the production of electric power, with due consideration for the needs of the under-developed areas of the world";

(d) Article III.A.3 further authorizes the Agency "to foster the exchange of scientific and technical information on peaceful uses of atomic energy". Article VIII also provides for such exchange of information;

(e) Article III.A.4 authorizes the Agency to "encourage the exchange and training of scientists and experts in the field of peaceful uses of atomic energy";

(ee) Article III.A.5 provides for the Agency "to establish and administer safeguards designed to ensure that special fissionable and other materials, services, equipment, facilities, and information made available by the Agency or at its request or under its supervision or control are not used in such a way as to further any military purpose; and to apply safeguards, at the request of the parties, to any bilateral or multilateral arrangement, or at the request of a State, to any of that State's activities in the field of atomic energy";

(f) Article III.A.6 also authorizes the Agency "to establish or adopt in consultation and, where appropriate, in collaboration with the competent organs of the United Nations and with the specialized agencies concerned, standards of safety for protection of health and minimization of danger to life and property... and to provide for the application of these standards to its own operations as well as to the operations making use of materials services, equipment, facilities, and information made available by the Agency or at its request or under its control or supervision; and to provide for the application of these standards, at the request of the parties, to operations under any bilateral or multilateral arrangement, or, at the request of a State, to any of that State's activities in the field of atomic energy";

(g) Article III.C further provides that the Agency "in carrying out its functions, shall not make assistance to members subject to any political, economic, military, or other conditions incompatible with the provisions of this Statute";

(h) Article III.D further provides that "subject to the provisions of the Statute and to the terms of agreements concluded between a State or a group of States and the Agency which shall be in accordance with the provisions of the Statute, the activities of the Agency shall be carried out with due observance of the sovereign rights of States";

(i) Articles IX and X of the Statute provide for members of the Agency to make available to the Agency source and fissionable materials and services, equipment and facilities which may be of assistance to the Agency in fulfilling its objectives and functions;

(j) Article XI provides for the Agency to assist in the planning and implementation of projects in the peaceful uses of atomic energy. It also authorizes the Agency "to assist any member or group of members to make arrangements to secure necessary financing from outside sources to carry out such projects".

It will be seen from the above that the provisions in the Agency's statute enable it to meet fully the requirements for peaceful nuclear explosions envisaged both in resolution 2456 C (XXIII) of the General Assembly and in the resolution relating to peaceful nuclear explosions adopted by the Conference of Non-Nuclear Weapon States held in Geneva in August-September 1968. Experience gained by the Agency over the past decade in promoting world-wide peaceful applications of atomic energy and in safeguarding against the diversion for

military uses makes this organization fully competent to undertake the task of providing an international service for peaceful nuclear explosions.

It is well known that any nuclear excavation which is only partially contained will result in the release of radioactive material to the environment in violation of the provisions of the partial test ban treaty. Even when a nuclear explosion is sought to be completely contained, there is sometime a risk of venting, which would result in release of radioactivity, however minute, in areas beyond the territorial limits of the country in which the explosion has taken place. Thus, there is need for an expert evaluation and review of health and safety aspects in respect of peaceful nuclear explosions, where there are possibilities of hazardous release of radioactivity to the environment. In the view of the Government of India, IAEA is fully competent to undertake such reviews. These reviews by the Agency should relate only to the technical aspects of health and safety and should not go into the political aspects of any proposed bilateral or other arrangements for peaceful nuclear explosions.

The Agency should provide, on a non-discriminatory basis, and upon request by member States, a number of services in respect of peaceful nuclear explosions. It can appropriately perform the functions envisaged for "an international service for nuclear explosions for peaceful purposes under appropriate international control". It should perform these functions like any of its other activities - under the supervision and control of the Board of Governors and the General Conference and subject to the general provisions of the Agency's statute.

IRAN

/Original: English/

General scope:

The authority vested in IAEA by virtue of its statute is of such a broad nature that it could accommodate an international service for peaceful applications of nuclear explosions. Though within the scope of jurisdiction of IAEA, the international service should, in the view of the Iranian Government, enjoy a certain degree of autonomy and should bring about some structural adjustments within the Agency to allow a more equitable role for the non-nuclear weapon States in the administration of the new service. The role envisaged for the international service should not, therefore, be confined to that of an intermediary organ acting between the supplying and requesting states. The international service should, within the scope of the IAEA statute and subject to provisions to be agreed upon, expand its role and establish itself as an organ primarily concerned with the orderly conduct of nuclear explosions for peaceful purposes.

The international service should be created in a manner consistent with the aims and purposes of the Treaty on the Non-Proliferation of Nuclear Weapons. To comply with this objective, the Government of Iran believes that (a) nuclear explosive devices may remain in the custody of the supplying States (or else in any other manner that forecloses all possibilities of the misuse of such devices

stored by the international service); (b) nuclear explosions for peaceful purposes should be conducted under international control to be provided in accordance with an agreed procedure by the international service.

Notwithstanding the opinion expressed in the preceding paragraph, the Government of Iran believes that the scope of the activities of the international service should be wider than that provided by article V of the Treaty. The latter's focus is on prevention of the spread of nuclear weapons and as such the question of nuclear explosions for peaceful purposes has been dealt with as a peripheral subject. The instrument, therefore, should not be allowed to prejudice measures that, although consistent, may not necessarily be in conformity with the Treaty but may be suited for the purpose of establishment and effective functioning of the international service. The Government of Iran is, therefore, of the opinion that the international service should not confine itself within the restricted scope of article V of the Treaty (which specifically deals with the problem of securing advantages of peaceful nuclear explosions for the non-nuclear States parties to the Treaty) but must concern itself with the problem as a whole which encompasses a wide spectrum of issues ranging from feasibility studies to problems of supervision and control of experimental and application explosions.

The latter point is becoming all the more important in view of the likelihood of an early conclusion of a comprehensive test ban treaty whereby the tests of nuclear weapons shall be prohibited and hence the question of peaceful explosions (assuming that the treaty's prohibitions shall not be extended to such explosions) shall assume particular prominence.

Such an approach to the question of establishment of the international service, in the view of the Iranian Government, will, in the long run, enhance the universality of the Treaty by creating within the context of a non-proliferation régime, a balance of obligations and responsibilities between the nuclear and non-nuclear weapon States.

Functions:

The international service upon the request of any of its members shall assist in working out the technical aspects of a peaceful nuclear explosion project such as required yield, crater dimension (in the case of excavations), radioactive release, etc. The requesting States should not be charged for the assistance and advisory opinion thus obtained.

The international service should perform economic feasibility studies, the conduct of which should be held as a prerequisite for the rendering of the requested explosion services. In the view of the Iranian Government, such studies which may be carried out at the expense of the requesting States should be made obligatory for all the States in order to enable the international service to establish a priority list and to avoid possibilities of uneconomic explosions which in some cases might be conducted for other purposes.

Health and safety control:

The international service shall make arrangements in accordance with the procedures already applied by IAEA in similar cases for safety reviews of the

projects involving the use of nuclear explosions for peaceful purposes. The studies carried out in this respect should inter alia be aimed at foreclosing possibilities of any violation of the provisions of paragraph I (b) of article I of the partial test ban treaty of Moscow, 1963. 2/ The safety review should also cover seismology, shock and the ecological effects of the blasts.

The international service, having performed feasibility and health safety studies, shall proceed on a priority basis to procure peaceful nuclear explosions for the purpose of carrying out a project. The supplying States shall be under obligation to co-operate with the international service for the carrying out of the approved projects (any supplier State party to the Treaty may at its own discretion refuse to supply nuclear explosive devices or to deny other advantages stipulated in article V of the Treaty to any requesting State which is not a party to that Treaty).

Access to scientific by-products:

The international service shall make arrangements to enable its members to benefit from the scientific and technological by-products obtained from the use of nuclear explosions for peaceful purposes.

Experimental and application explosions carried out by the supplying States:

Prior to any such explosions, the supplying States shall provide the international service with the information about the aims and technical specifications of the explosion. The explosions shall be carried out under the observation of the international agency. After the conclusion of the comprehensive test ban treaty, such observations might be converged into strict international control in order to guard against the possibility of misuse of the information obtained from peaceful explosions for military purposes. All the by-products of such explosions should be accessible to all members in accordance with paragraph 8.

Administrative and procedural aspects:

The executive functions of the international service may be placed under the authority of an executive council in which the non-nuclear-weapon States should be adequately represented. Such representation might be drawn from among members of the Governing Board of the Agency who have been elected to that office in accordance with article VI.A.3 of the IAEA statute.

The international service shall also have a director who may be appointed, on the recommendation of the Director-General of IAEA, by the executive council (an alternative would be to make the post of the director an ex officio office of the Director-General of the Agency);

Details of functions, prerogatives, and responsibilities of the executive council and the director of the international service shall be set down in an

2/ The Government of Iran agrees that a study on the desirability of the revision of the Moscow Partial Test Ban Treaty for the purpose of allowing over border release of radio-active debris within agreed safe health limits, be carried out by a group of experts appointed by the Secretary-General from among various geographical regions.

instrument to be agreed upon and signed by all participating States (this instrument might later be attached to the statute of IAEA).

The director may draw his staff from among those already employed by the Agency. Consultants, experts and additional staff for particular projects might be recruited or, as the case may be, borrowed from the United Nations or its specialized agencies on short-term bases.

ITALY

/Original: French/

The Italian Government voted in favour of resolution 2456 C (XXIII) at the twenty-third session of the General Assembly and has consistently supported every effort to achieve the purposes of that resolution. In particular, the Italian Government has, in IAEA, spoken in favour of a study being prepared on the possibility of establishing, within the framework of the Agency, of an international service for nuclear explosions for peaceful purposes. As a result, however, of the discussions which took place in this regard, the majority opinion was in favour of assigning jurisdiction in regard to explosions for peaceful purposes to a division of the IAEA secretariat.

The Permanent Mission of Italy wishes to draw attention to the fact that the activity contemplated for the Agency in this field concerns the matter dealt with in resolution 2456 (XXIII) independently of the arrangements provided for in article V of the Treaty on the Non-Proliferation of Nuclear Weapons. It is, indeed, the opinion of the Italian Government that the choice of the international body provided for in the aforementioned article will have to be made by the countries which are signatories of that Treaty after its entry into force.

IVORY COAST

/Original: French/

The Government of the Ivory Coast has no observations to make on the establishment of an international service for nuclear explosions for peaceful purposes, under appropriate international control.

JAMAICA

/Original: English/

The views of the Government of Jamaica are as follows:

The proposal to establish machinery to facilitate the acquisition by non-nuclear States of the peaceful benefits deriving from nuclear explosions is welcome. The benefits which would be of particular interest are those applicable to: (a) Excavation and earth-moving works; (b) recovery of power and isotopes from contained explosions; (c) other industrial applications; and (d) applications relating to the development of science and technology for development.

In this connexion, the Mexican working paper contained in document A/C.1/976 is welcome as a useful basis for future discussion in the United Nations. It is accepted that the best results can be obtained from any new machinery to be established by close co-operation with IAEA. It would also be preferable that the new machinery whilst co-operating with IAEA should function within the United Nations system.

Although it can be argued that the establishment of this new machinery will not materially accelerate the development of devices for peaceful purposes on an economic basis, it is recognized that the place of technological development makes it necessary to plan, well in advance, the systems and methodology by which such devices would be available to States requiring their use.

It is recognized that the membership of IAEA is not the same as States for which the Treaty on the Non-Proliferation of Nuclear Weapons is in force or is likely to be in force. It is therefore likely to be necessary to ensure that membership of IAEA does not lead to automatic access to benefits of nuclear explosions or the use of nuclear explosive devices if the production of nuclear weapons has not been explicitly renounced.

It is noted that the membership of the Board of Governors of IAEA has been biased in favour of the States most advanced in the technology of atomic energy and the production of some materials. It will therefore be necessary to seek equitable modification of article VI of the statute of IAEA.

LAOS

[Original: French]

Because of the lack of any national authority competent in this matter, the Royal Government of Laos is not in a position to formulate any observations.

MADAGASCAR

[Original: French]

The Malagasy Republic believes that as IAEA was established for the purpose of promoting the peaceful uses of nuclear energy, it accordingly appears to be the most appropriate organization to assume the responsibilities which the resolution seeks to confer on the new international service.

The IAEA is fully competent, under its Statute and from a financial point of view, to carry out such a task, and it also has great experience in the peaceful uses of nuclear energy. If it has not always been able to meet increased requests for technical assistance in a fully satisfactory manner, the reason lies in the lack of financial resources, rather than in structural deficiencies.

Consequently, the Malagasy Government, having every confidence in the capability of IAEA in its present form and in the belief that the sphere of activity of the proposed new body would be very similar to that of IAEA, is in favour of entrusting the Agency with the responsibilities which it is proposed to assign to the contemplated international service.

Moreover, since the setting up of new bodies imposes a very heavy financial burden, particularly on developing countries, the Malagasy Government has serious reservations about such a course of action.

In conclusion, Madagascar is not in favour of the establishment of a new international service for nuclear explosions for peaceful purposes.

MAURITIUS

[Original: English]

The Government of Mauritius welcomes the establishment, within the framework of IAEA, of an international service for nuclear explosions for peaceful purposes under appropriate international control.

MEXICO

[Original: Spanish]

In his note PO/134/7, dated 24 January 1969, the Secretary-General of the United Nations drew the attention of the Secretary for Foreign Affairs of Mexico to operative paragraph 1 of resolution 2456 C (XXIII), adopted by the General Assembly at its 1750th meeting on 20 December 1968, in which the General Assembly requested the Secretary-General "to prepare, in consultation with the States Members of the United Nations and members of the specialized agencies and of the International Atomic Energy Agency, and with the co-operation of the latter and of those specialized agencies that he may consider pertinent, a report on the establishment, within the framework of the International Atomic Energy Agency, of an international service for nuclear explosions for peaceful purposes, under appropriate international control".

In the same note, the Secretary-General requested that the Mexican Government's views on the establishment of this international service should be transmitted to him before 31 July 1969 in order to facilitate the preparation of the report which the General Assembly had asked him to prepare.

The Mexican Department of Foreign Affairs has prepared the present memorandum in response to that request.

The establishment, within the framework of IAEA of an international service for nuclear explosions for peaceful purposes referred to below as "the service" - under appropriate international control, in accordance with provisions of resolution 2456 C (XXIII), will require, in the first place, the preparation and adoption of a "special international agreement" defining the nature, structure, powers and functions of the service.

In the light of the statements made at the 1577th meeting of the First Committee by the representatives of the Co-Chairmen of the Conference of the Eighteen-Nation Committee on Disarmament, to which the third preambular paragraph of the above-mentioned resolution specifically refers, it may be stated that the preparation of the special international agreement:

(1) Should begin as soon as possible, and

(2) Should be undertaken "with the broadest possible participation of non-nuclear States".

Since the international organization which best meets the second requirement mentioned above is unquestionably the United Nations, it follows that the most appropriate organ for the preparation and adoption of the special international agreement is the General Assembly.

This fundamental question having been answered in this way, an effort must now be made to clarify - as will be done in general terms below - two other points which are equally fundamental:

(1) What the membership of the service should be, and

(2) What its main purposes should be.

As far as the membership of the service is concerned, it goes without saying that all the nuclear-weapon States should be able to belong to it; in this connexion, it might be added that the three nuclear-weapon States which are signatories of the Treaty on the Non-Proliferation of Nuclear Weapons have already to some extent undertaken to co-operate with the service under article IV and, in particular, article V of that Treaty.

With regard to the participation of non-nuclear States, three different positions have so far been put forward:

(1) The position taken by States which have proposed that the benefits of the service should be extended equally to all States whether or not they are parties to the Treaty;

(2) The position of those States - including Mexico - which prefer that such benefits should be available to all "States which have renounced nuclear weapons", where such a renunciation has acquired binding legal force for them under the Treaty or some other international contractual instrument - such as, for example, the Treaty for the Prohibition of Nuclear Weapons in Latin America (Treaty of Tlatelolco) - providing for an international control system which is at least as effective as, or more effective than, that provided in the above-mentioned Treaty;

(3) The position taken by these States which maintain that the benefits in question should be reserved **exclusively** to the States parties to the Treaty.

If the first of these three alternatives is adopted, there will be no difficulty if the service is, as some of the nuclear Powers propose, IAEA itself, provided, of course, that the present composition of its Board of Governors is changed and that certain other substantive reforms, necessitated by the special international agreement to be drawn up, are made in its Statute. However, in order for this alternative to be adopted it is essential that these nuclear-weapon States which are or may become parties to the Treaty on Non-Proliferation should accept it, which at the moment appears highly unlikely.

On the other hand, if the second alternative - which would appear to be the most fair and equitable - or the third alternative is preferred, consideration must be given to the establishment of an "appropriate international body" (to be called the "service" or "programme") which, though operating within the framework of IAEA, would be distinct from it and would enjoy complete autonomy in carrying out the specific tasks assigned to it. Otherwise, a succession of insoluble problems would arise because, as a number of States, including Mexico, the Philippines, Jamaica and Sweden, have clearly pointed out, the States members of IAEA are not and for a long time will probably not be the same States as those on which the Treaty on the Non-Proliferation of Nuclear Weapons is binding. (A similar situation exists, of course, in the case of the Treaty of Tlatelolco.)

The Mexican delegation submitted to the Conference of Non-Nuclear-Weapon States a working document (A/CONF.35/DOC.15) which was later circulated as a document of the First Committee of the General Assembly at the Assembly's twenty-third session (A/C.1/976) and which contains draft proposals for the articles that should be adopted for the purpose of establishing a body having these characteristics.

With regard to the second fundamental point raised in paragraph 7, it is essential to keep in mind that the main purpose of the service should be similar, within the sphere of its competence, to that of the United Nations Development Programme in its own field of activity, namely to provide, on a multilateral basis, all the technical and financial assistance that might be required by the non-nuclear-weapon States which are members of the service in order to carry out nuclear explosions for peaceful purposes in their territories under the most favourable possible conditions and with due consideration for the needs of the developing countries.

In order to accomplish this purpose, it is necessary - as the Mexican delegation's working document referred to in paragraph 12 explained in detail - first of all, that the membership of the executive organ of the service should be such as to afford the countries in question the fullest possible assurance that their requests would always receive prompt, appropriate and objective consideration and, secondly, that the financial arrangements to be adopted would be such as to ensure not only that the cost to the requesting States for nuclear devices would be as low as possible and exclude any charge for research and development but also that the remaining charges incurred in each case would be shared equitably through the application of criteria taking full account of the vast difference in resources between, on the one hand, the nuclear Powers and the other highly industrialized States and, on the other hand, the developing countries, which, as everyone knows, constitute the overwhelming majority of the countries of the world.

To sum up, the main aim should be to ensure that the structure, functions and procedures of the service meet the primary requirement that this new form of application of nuclear energy - nuclear explosions for peaceful purposes - should help to reduce the economic and social gap separating those generally referred to as the "northern nations" from the "southern nations", and that the new body should not be mistakenly regarded as having been set up to provide services which are evaluated from a narrowly economic point of view.

In view of the fact that the service, as has already been said in paragraph 13, will function as a centre of multilateral assistance in carrying out nuclear explosions for peaceful purposes, the specific agreements required for the execution of each project should be concluded between the service and the requesting State rather than between the latter and the States providing the explosive nuclear devices.

The service should be able to provide the requesting State with all the data it may need concerning the economic value of a project, but the final decision on it must rest exclusively with that State itself.

The nuclear-weapon States should undertake to make available to the service each year explosive nuclear devices of sufficient megatonnage to satisfy all requests for the implementation of projects proposed to the service and approved by it. This does not mean, of course, that the possession of such devices will be transferred to the service, since, in order to avoid any possibility of the proliferation of nuclear weapons, there seems to be general agreement that the devices should at all times remain in the possession and under the control of the nuclear Power which has provided them and whose technicians will in each case be responsible for carrying out explosions with the devices. Hence, the international control and observation for which the service will be responsible will have as its sole object to make certain that the explosive nuclear devices are not used for purposes other than those peaceful uses for which they have been specifically requested.

Lastly, it should be borne in mind that the fact that the service is to be established "within the framework" of IAEA does not in any way imply that all functions relating to the utilization of nuclear explosions for peaceful purposes will come under the jurisdiction of the service. On the contrary, as Mexico, Sweden and a number of other States have pointed out on various occasions, there are certain aspects of the matter - such as the relation between nuclear explosions for peaceful purposes and the partial prohibition of nuclear tests already in effect under the provisions of the Moscow Treaty, and the further prohibition which it is hoped to achieve through the conclusion of a treaty banning underground tests of nuclear weapons - which obviously must remain under the jurisdiction of the United Nations, even though the latter must act in such matters in close co-operation with the service.

The Mexican Department of Foreign Affairs is certain that the report which the Secretary-General is to prepare in pursuance of resolution 2456 C (XXIII) will be very useful in helping the General Assembly, at its twenty-fourth session, to set about preparing a draft special international agreement establishing an international service for nuclear explosions for peaceful purposes or as a first step, to define the broad principles and criteria that should govern such an agreement. The Mexican Department of Foreign Affairs also cherishes the hope that the broad principles and criteria ultimately adopted by the Assembly will correspond in all essential respects to those which have been set forth in the present memorandum.

MOROCCO

[Original: French]

Morocco has no special observations to make on the proposal to establish an international service for nuclear explosions for peaceful purposes within the framework of IAEA.

NETHERLANDS

[Original: English]

The IAEA is, in the opinion of the Netherlands Government, the most appropriate international body through which non-nuclear-weapon States may obtain the potential benefits from the peaceful application of nuclear explosions. Both the provisions of the statute and the Agency's practical experience in promoting, under due safeguards, the use of nuclear energy for peaceful purposes provide a broad and solid basis for the implementation of article V of the Treaty on the Non-Proliferation of Nuclear Weapons.

The Netherlands authorities are generally in agreement with the report of the Board of Governors (GOV/1352) on the role the Agency might play in relation to the use of nuclear explosions for peaceful purposes. In particular they wish to point out that articles IX and XI of the Agency's statute dealing with, respectively, the supplying of materials and the undertaking of Agency projects, may provide a basis for working out the "appropriate procedures" required by the Treaty.

It would seem advisable to spell out those procedures in a special international agreement, in such a way that it will be possible, in due course, to apply its provisions to all peaceful nuclear explosions carried out by nuclear-weapon States, whether for their own benefit or on behalf of non-nuclear-weapon States. While meeting the requirements of the Treaty, such an agreement might also provide a solution to the questions of the peaceful use of nuclear explosions under the conditions of a ban on underground nuclear-weapon tests.

As to the question of the establishment within the framework of the Agency of an international service for peaceful nuclear explosions, the Netherlands authorities see no need for the creation of new organs in addition to those provided for in the Agency's statute. This will especially be the case if the present studies on the representative character of the Board of Governors have resulted in a generally accepted composition of the Board, and if there will be available within the Secretariat a well-qualified department for handling the technical and administrative aspects of the matter under discussion.

NEW ZEALAND

[Original: English]

In response to a letter O/452-6 of 13 March 1969 from the Director-General of IAEA, the New Zealand Government has already expressed its full agreement with the conclusions reached by the Director-General in his analysis of the role

that might be played by the Agency in this field. In New Zealand's view the Agency can both properly and most appropriately undertake the functions envisaged under article V of the Treaty on the Non-Proliferation of Nuclear Weapons. While New Zealand had no specific suggestions to make on the procedures which the Agency might employ in this field, it did agree, and continues to agree, that at this stage of technological development the widest possible circulation of information on the technical aspects of nuclear explosions for peaceful purposes would be of the greatest help.

NORWAY

/Original: English/

The Norwegian authorities consider that the use of nuclear explosions for peaceful purposes may be of interest to States that have not themselves developed or plan to develop explosive nuclear devices. The use of such explosions would, however, require comprehensive safeguards to ensure that nuclear material is used for peaceful purposes only. The general health and safety aspects will also require special attention. It is considered appropriate that an international body is charged with promoting and co-ordinating the development in this field, and that these tasks should be conferred to IAEA, which has a wide experience in co-ordinating international nuclear activities. IAEA should be given ample time to study the problems involved before detailed regulations are worked out. It is felt that IAEA's initial activities must place emphasis on the exchange and dissemination of information.

PAKISTAN

/Original: English/

The Government of Pakistan fully support the establishment, within the framework of IAEA, of an international service for nuclear explosions for peaceful purpose, under appropriate international control.

As the technology for peaceful nuclear explosions is the same as for nuclear weapons, the proposed international service must be so devised that it effectively prevents the possibility of the spread of nuclear weapons to hitherto non-nuclear-weapon States.

To that end the nuclear explosive devices must be manufactured by the nuclear-weapon States and they alone, under the supervision of IAEA, should conduct the explosions for peaceful purposes. Interested States should also be able, on a reciprocal basis, to send their observers to the site of such explosions.

For the purpose of the service the definition of a nuclear-weapon State should be the same as in the Treaty.

The devices should, however, be available on a non-discriminatory basis taking into account the special interests and needs of the developing countries. They should be offered at no-profit basis and their cost should not include the

charges for research or development. The service should be so devised that, if need be, its benefits are made available to the developing countries, either on the basis of long-term low-interest-bearing loans or in deserving cases, without charge.

The IAEA should be designated as the authority responsible for the working of this service. The IAEA with the full co-operation of the nuclear-weapon States, should receive and disseminate information on all aspects of the peaceful uses of nuclear explosions. It should receive and process all requests for peaceful nuclear explosions. On request, it may also undertake feasibility studies. The IAEA should also make all other necessary arrangements which are necessary from the point of view of health and safety, etc.

A list of nuclear explosive devices, available for peaceful purposes, should be made available periodically by the nuclear-weapon States to the IAEA. The utilization of a particular device should, however, be subject to consultations between IAEA and the applicant.

PORTUGAL

[Original: English]

Portugal agrees to the establishment, within the framework of IAEA, of an international service for nuclear explosions for peaceful purposes, under appropriate international control, as set forth in resolution 2456 (XXIII), since, in accordance with its status, IAEA is competent to carry out those functions.

SINGAPORE

[Original: English]

The Singapore Government supports the proposed establishment, within the framework of IAEA, of an international service for nuclear explosions for peaceful purposes, under appropriate international control.

SOUTH AFRICA

[Original: English]

The South African Government broadly associates itself with that expression of views set out in the Board of Governors' report entitled "The Agency's responsibility to provide services in connexion with nuclear explosions for peaceful purposes" (see Annex).

SPAIN

[Original: Spanish]

The Spanish Government is pleased to note that a report is being prepared on the establishment of an international service for nuclear explosions for peaceful purposes under appropriate international control. The IAEA can provide a proper framework for the establishment of such a service which, in accordance with the statute of the Agency, must be offered to all its members, without discrimination of any kind.

The Spanish Government therefore understands that the future service for nuclear explosions for peaceful purposes under appropriate international control to be established within the framework of IAEA cannot be conditioned to the signing of any treaty or agreement that is not in harmony with the agreements under which said international agency was created.

SWEDEN

[Original: English]

Article V of the Treaty on the Non-Proliferation of Nuclear Weapons provides that negotiations on the appropriate international observation and procedures for making potential benefits of nuclear explosions for peaceful purposes available to non-nuclear-weapon States parties to the Treaty, shall commence as soon as possible after the Treaty enters into force.

The views of the Swedish Government on the role of the Agency in this connexion, as set out below, must consequently be of a preliminary nature. It should also be recalled that, when the Swedish Government voted in the General Assembly for the study which is now under preparation, it was under the assumption that it should not prejudice the identity, structure and operation of the appropriate international agency provided for in article V of the Treaty, nor should it prejudice the contents of the special international agreement mentioned in the same article.

The main provision of the Treaty is that non-nuclear-weapon States which are parties to the Treaty undertake not to acquire nuclear weapons. Therefore, the control function in connexion with nuclear explosions for peaceful purposes is to ensure international observation that no nuclear weapons and no knowledge of nuclear weapons technology are acquired by such States. Peaceful nuclear explosions give rise to specific safeguard problems with regard to the observance of the Treaty, whose specific purpose is to ensure that knowledge of nuclear weapons technologies is not transferred between States and that nuclear weapons secrets are effectively protected. Such safeguards problems raise various questions of method, degree of control, procedure, etc. The solutions are not specified in the Treaty and it seems that these problems would have to be dealt with in the special international agreement mentioned in article V of the Treaty. The Swedish Government feels that such a special agreement should be considered in a preparatory way in the Eighteen-Nation Committee on Disarmament and that the agreement should regulate all nuclear explosions for peaceful purposes, leaving the practical arrangements for specific assistance projects to bilateral agreements.

In the context of a prospective comprehensive test ban treaty, it should be recalled that not only the non-nuclear-weapon States should be supervised to ensure that they do not acquire nuclear weapons - as is the case under the Treaty - but that also all nuclear weapon tests within all States parties to the Treaty, and the performance by any such State of such tests, must be covered by the prohibition. The essential point then seems to be: how can it be ascertained that peaceful nuclear explosions are not exploited for military purposes? This problem must be thoroughly investigated and solved before appropriate control rules can be established.

It is the conviction of the Swedish Government that, under the Treaty as well as under a comprehensive test ban, nuclear explosions for peaceful purposes should be undertaken only after an international examination of all procedures has been carried out and an international decision has been taken as to the appropriateness of undertaking them; under a comprehensive test ban this would require an international licensing of all nuclear explosions regardless of where they are carried out.

While it seems too early to decide how such a system should work, it would appear undesirable to proceed on the assumption that all functions should be delegated to one and the same body. The IAEA, as the international body in the field of uses of atomic energy for peaceful purposes, could appropriately provide important services in relation to nuclear explosions. It seems clear that both its technical competence and statutory position would make this the most suitable arrangement. Such services might include, i.e., the collection and dissemination of information, the provision of technical assistance and acting as an intermediary for Governments to secure the performance of services, the supply of materials or possibly even international financing. It would also seem appropriate to charge IAEA with observation and control with regard to health, safety and disarmament safeguards.

However, IAEA should not at the same time carry the responsibility for the crucial "go ahead" decision, which could well amount to a waiving of an international obligation, such as might stem from a comprehensive test ban treaty. Some more central United Nations body or a body explicitly representative of the parties to the relevant treaties should probably be charged with that responsibility. It would, of course, work in close co-operation with the IAEA. Its main concern would be to protect, in accordance with General Assembly resolution 2456 C (XXIII), the equitable rights of all States to benefit from this new technology. Less developed countries are particularly concerned that the benefits do not accrue solely to those States which possess nuclear explosive devices by virtue of their possession of nuclear weapons, or in a discriminatory way to States which may be in a financially, technically or politically advantageous position to obtain the services available. This concern underlies the argument advanced during the debate on the General Assembly's resolution, that in the organ responsible for the over-all decision the economically and technologically less advanced countries must have fair representation.

The Swedish Government looks forward to an exchange of views on the important issues involved in peaceful nuclear explosions and for its part offers all possible co-operation.

SWITZERLAND

/Original: French/

The Swiss federal authorities take a favourable view of the idea of establishing an international service for nuclear explosions for peaceful purposes. Nevertheless, this new service should be developed only as practical possibilities arise for carrying out nuclear explosions for peaceful purposes. The Swiss authorities consider IAEA to be the body which could perform this new task in the most rational way.

TRINIDAD AND TOBAGO

/Original: English/

The Government of Trinidad and Tobago supports the establishment of an international service for nuclear explosives for peaceful purposes in accordance with the text of resolution 2456 C (XXIII) of the General Assembly.

TURKEY

/Original: English/

Various information now available and statements made by some statesmen clearly indicate that nuclear explosions for peaceful purposes will bring about economic advantages especially in the next five or fifteen years. However, the protection of health must be an important point to watch in this field.

It seems to us that IAEA must be the appropriate organization to carry out the functions envisaged by the Treaty within an international framework of co-operation. We also believe that a new department to be established within IAEA may deal independently with this matter.

We think that the IAEA may be particularly responsible for the following:

- (1) To pool scientific, technical and economic information and to provide them to its members either in some documents or meetings;
- (2) To play an intermediary role for non-nuclear countries. However, there is no article in the statute of IAEA to discriminate between nuclear and non-nuclear countries. Therefore some additional studies must be made in dealing with this discrepancy as regards the statute of IAEA;
- (3) To prevent nuclear Powers from gaining extra commercial benefits by establishing monopoly in the field of nuclear explosions for nuclear purposes. Article V of the Treaty is very clear in this matter and it should be implemented.
- (4) To provide technical assistance to member States if studies were to indicate clearly that nuclear explosions for scientific purposes will bring about economic benefits. Other international funds can also be used to this end.

(5) Another responsibility of IAEA will be to observe and control nuclear explosions as a result of the safeguard system in force. However, some modifications in the statute of IAEA will have to be made for it to exercise this function on an international basis so that nuclear explosions for scientific purposes may be included in the above-mentioned safeguard-system.

UGANDA

[Original: English]

The Government of the Republic of Uganda supports the establishment, within the framework of IAEA, of an international service for nuclear explosions for peaceful purposes and, would strongly favour the recruitment into the said international service of people from developing countries with the main purpose of enabling such people to gain practical experience in peaceful application of nuclear explosions and the carrying out of experiments to see to what advantage the nuclear energy could be best utilized to the advantage of the developing countries. The proposals made by the Government of the Republic of Uganda would be in accordance with the resolutions and declaration of the Conference of Non-Nuclear-Weapon States.

UKRAINIAN SOVIET SOCIALIST REPUBLICS

[Original: Russian]

The Ukrainian SSR considers the use of nuclear explosions for peaceful purposes promising, especially in connexion with the extraction of certain useful minerals and the conduct of excavation operations where the customary methods are not sufficiently effective. The Treaty on the Non-Proliferation of Nuclear Weapons provides for assistance in carrying out such operations to States which do not possess nuclear explosive devices. Its implementation would therefore contribute to the provision of such assistance to countries which have signed the Treaty.

The Ukrainian SSR considers that IAEA is, by virtue of its structure and experience, the international body through which assistance in using nuclear explosives for peaceful purposes should be provided in accordance with the Treaty. This would be consistent with the role of the Agency as laid down in the Treaty itself.

The function of IAEA would thus be to act as an intermediary between States possessing nuclear explosive devices on the one hand and the non-nuclear States parties to the Treaty on the other. At the same time, nuclear explosive devices should remain under the authority and control of the States possessing them. This would be fully in accordance with the requirements of the Treaty.

UNION OF SOVIET SOCIALIST REPUBLICS

[Original: Russian]

On the question on the use of nuclear explosions for peaceful purposes, the Soviet Union's position is that underground nuclear explosions may successfully be used in the not too distant future for intensifying the extraction of petroleum and gas and for creating large underground chambers. They may also be used in excavation work for building water reservoirs in drought zones, for cutting canals and for stripping the overburden for open-cast mining of useful minerals, etc. Although the economic indicators will vary from project to project, the use of nuclear explosions for these purposes seems to be promising and offers possibilities for undertaking work in cases where it would be impossible or undesirable to use conventional methods.

The Soviet Union believes that the consistent implementation of the Treaty on the Non-Proliferation of Nuclear Weapons will open up prospects for non-nuclear-weapon States parties to this Treaty to obtain potential benefits from the peaceful applications of nuclear explosions. We for our part are intending to address ourselves, in a highly responsible manner, to the fulfilment of our obligations to provide services in this field in accordance with article V of the Treaty.

As is well known, the Soviet Union has already expressed its position in principle on the question on the role of IAEA in regard to the use of nuclear explosions for peaceful purposes under the Treaty. It has done so by supporting the resolution on this question adopted at the twelfth session of the General Conference of the Agency, a resolution which stated that IAEA can effectively perform the role of the international body through which the benefits from peaceful applications of nuclear explosions will be made available in accordance with the Treaty.

In determining its position, the Soviet Union proceeded from the premise that IAEA is the international organization specially created to promote the use of atomic energy for peaceful purposes. During the ten years or more of its existence, the Agency has accumulated substantial experience in the organization of international co-operation in this field. The special role of the Agency in regard to problems connected with atomic energy has also been defined in the Treaty on the Non-Proliferation of Nuclear Weapons which has given IAEA certain functions of control to prevent the diversion of nuclear materials to the production of nuclear weapons.

IAEA with its present structure already has the necessary possibilities for undertaking tasks relating to the use of nuclear explosions for peaceful purposes in accordance with the Treaty. In our view, therefore, there is no need to establish a special IAEA service for nuclear explosions for peaceful purposes, separate from the departments already existing in the Agency.

With regard to the actual procedures which the Agency might use for performing its role in regard to the peaceful applications of nuclear explosions, the Soviet Union's position is that while the Agency will exercise the functions of intermediary in regard to nuclear explosions for peaceful purposes in accordance with the Treaty, the nuclear explosive devices will

remain under the authority and control of the nuclear-weapon State. This arrangement will be entirely in keeping with the requirements of the Treaty which prohibit the transfer of information on the design of nuclear weapons or other nuclear explosive devices. IAEA could serve as the organ which, as provided for in article V of the Treaty, would exercise "appropriate international observation" over peaceful nuclear explosions undertaken for non-nuclear-weapon States parties to the Treaty.

UNITED KINGDOM

[Original: English]

The United Kingdom Government believes that it is appropriate for IAEA to play a predominant part in examining the possibilities of and modalities for the establishment of the international service for peaceful nuclear explosions called for in the resolution referred to, and welcome the Board of Governors' report on this subject, with most of which they are in general agreement.

Your Excellency will have a copy of this report, upon which all member States of IAEA will shortly have an opportunity, during the forthcoming meeting of the Agency's General Conference, to comment.

The United Kingdom Government believes that at the present stage of development, the Agency's immediate role must be primarily in the field of information, of which the importance is considerable, since much study is still required before the potential contribution of peaceful nuclear explosions can be evaluated in the international context. The United Kingdom would hope to participate in such studies and exchanges of information and has already put forward a proposal in IAEA - a copy of which I have the honour to enclose - for a specific project.

Text of a proposal put forward by the United Kingdom in
the International Atomic Energy Agency on 8 May 1969

1. The United Kingdom delegation believes that the Agency is qualified by its experience and has necessary authorization under its Statute, to play a unique and valuable role in connexion with the use of nuclear explosions for peaceful purposes.

2. The delegation distinguishes three aspects to such an explosion:

(a) A study of nuclear explosive effects, to determine when a nuclear explosion might be advantageous, and to establish what safety precautions must be taken and how they should be carried out;

(b) The provision and firing of the nuclear device;

(c) The exploitation of the cavity or crater by civil, chemical or mining engineers.

3. Of the above, (b) must remain a task for nuclear-weapon States; (c) which demands most in the way of cost, planning and effort, is an area where several countries, certainly including the United Kingdom, already have much expertise available. The Agency should ensure here that its activities do not infringe commercial interests; and that it does not expend undue resources on non-atomic work. (a) is the area where the Agency's effort should be concentrated.

4. No wide use of peaceful nuclear explosions seems likely for a further five years. In the interim, the Agency and member States will have time to make a realistic and detailed appraisal of the potentialities of this technology, and so provide a basis for defining the Agency's role. In the first instance, an effort on information is called for. As part of this, the delegation suggests that the Agency should charge a panel of experts to prepare a provisional manual setting out the essential parameters of a nuclear explosion (predicted cavity and crater sizes in various media for various yields); radiological blast and seismic damage criteria; nuclear support costs, etc.

5. Such data alone would not illustrate the potentialities of a peaceful nuclear explosion unless they were related to a specific project. It is therefore proposed that, once the manual was available, member States should examine whether they could identify projects which were hitherto considered impossible or uneconomic, but which might then become possible with nuclear explosives. Member States, by examining, at their own expense, the engineering problems and costs of the possible projects, could prepare first order feasibility studies for circulation to other members for examination and discussion. Such examination would help to achieve a general understanding of when peaceful nuclear explosions could be of value.

UNITED STATES

[Original: English]

In connexion with resolution 2456 C (XXIII), adopted by the General Assembly last year, regarding "the establishment, within the framework of the International Atomic Energy Agency, of an international service for nuclear explosions for peaceful purposes, under appropriate international control", the United States Government notes that a related resolution was adopted by the Twelfth General Conference of the International Atomic Energy Agency - resolution GC (XII)/Res/245 - which referred to the role envisaged for an international body under article V of the Treaty on the Non-Proliferation of Nuclear Weapons. The latter resolution requested the Director General of that Agency "to initiate studies of the procedures that the Agency should employ in performing such a role", and further requested the Agency's Board of Governors "to review the results of these studies and to report thereon" to the General Conference at its next session, which will take place in September of this year. The IAEA study on this matter, in which all member States of the Agency were invited to participate, has now been completed and approved by the Agency's Board of Governors for transmittal to the General Conference and to the Secretary-General of the United Nations.

The United States Government believes that the study undertaken by IAEA is especially relevant to the aforementioned General Assembly resolution, and endorses its conclusions. In particular, the United States firmly believes

that IAEA is the most appropriate organization to foster international co-operation pertaining to the peaceful uses of nuclear explosions, and to assume the responsibilities and functions anticipated for an international organization under article V of the non-proliferation treaty. The United States is encouraged by the fact that IAEA already has made great progress in delineating its prospective responsibilities in this field, and believes that the IAEA offers the most appropriate forum for defining these responsibilities and functions in greater detail. This view evidently is shared by many other States. The United States also notes in this connexion that the Agency's experience in many other fields pertaining to the peaceful uses of nuclear energy will be relevant and useful in the field of peaceful nuclear explosions.

The United States supports the concept, recently endorsed by the IAEA's Board of Governors, that the Agency's organization should be kept under periodic review and adapted as necessary to assure that it will be able to meet its prospective responsibilities in the field of peaceful nuclear explosions. Moreover, the United States has made clear its intention to continue supporting the development of the IAEA's competence in this field by continuing to furnish the Agency with extensive information on the United States experimental "Plowshare" programme, and by making available experts from time to time to assist the Agency as necessary. The United States already has provided a summary report to the Agency on the current status of the technology of peaceful nuclear explosions (which the Director General has circulated to all IAEA member States), and has also provided an expert to assist in developing an agenda and programme for a Panel Meeting on the Peaceful Uses of Nuclear Explosives which the Agency plans to convene in the near future. Additionally, the United States will make available one of its scientists from its "Plowshare" programme to join the staff of the IAEA within the next two months.

It should be emphasized that the technology for peaceful nuclear explosions is at an early stage of development, and much work remains to be done before widespread application of peaceful nuclear explosions can be expected. Accordingly, the United States believes that the development of detailed arrangements relating to the provision of peaceful nuclear explosion services will have to continue to be approached on an evolutionary basis in the light of the technological progress actually achieved. At the same time, however, the United States considers that the IAEA study represents a very good beginning on the subject, and that the principal aspects of potential IAEA involvement have already been generally well defined in this study. It is anticipated that IAEA will continue these studies and define its role with greater clarity over the months ahead, and the United States Government reiterates its willingness to co-operate fully with the Agency in further studies and discussions on this subject.

Finally, the United States Government wishes to reiterate that it plans to make available, when technically and economically feasible, peaceful nuclear explosion services pursuant to article V of the non-proliferation treaty under attractive conditions. Charges will be as low as possible and will exclude the sizable costs of research and development that have been incurred in the development of nuclear explosives. Moreover, the United States does not anticipate any scarcity of nuclear explosive devices necessary to perform this service once the technology for applying nuclear explosions to peaceful purposes reaches a stage of commercial application.

UPPER VOLTA

[Original: French]

The Government of the Upper Volta is in favour of the establishment of such a service, believing that all efforts to control nuclear explosions should be supported by all peace-loving States.

VENEZUELA

[Original: Spanish]

The Venezuelan delegation has the honour to present the view of its Government, subject to such observations as may be made when the matter is discussed by the General Assembly.

The service should be set up by means of a special international agreement, which should be drafted and approved by the United Nations General Assembly.

The agreement should contain provisions ensuring the autonomy of the service within the framework of the United Nations.

The service should provide multilateral technical and financial assistance to its members for the carrying out of nuclear explosions for peaceful purposes, on the most favourable terms possible.

The principles and processes adopted should ensure access by members of the service to the benefits of nuclear explosions for peaceful purposes, without discrimination of any kind and with due regard to the needs of the developing regions of the world.

The members of the international service for nuclear explosions for peaceful purposes should be States which possess nuclear weapons and those which do not possess such weapons and have formally undertaken not to receive them, acquire them or make them and in this connexion agree to effective international control.

The instrument establishing the service will not affect the rights agreed upon at the regional level in respect of the use of nuclear explosions for peaceful purposes.

III. REPORT OF THE BOARD OF GOVERNORS OF THE INTERNATIONAL ATOMIC ENERGY AGENCY

19. The report of the Board of Governors of the International Atomic Energy Agency on the responsibility of the Agency to provide services in connexion with nuclear explosions for peaceful purposes* is reproduced below:

INTRODUCTION

1. In Resolution GC(XII)/RES/245 the General Conference, referring to the role envisaged for an international body under the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) in relation to the application of nuclear explosions for peaceful purposes, 1/ requested the Director General "to initiate studies of the procedures that the Agency should employ in performing such a role", and requested the Board of Governors "to review the results of these studies and to report thereon" this year.

2. The Board began discussion of the subject last February, when it had before it a preliminary analysis by the Director General. As a first step it asked the Director General to circulate to all Member States an analysis of the role the Agency might play in helping to make available the benefits of nuclear explosions for peaceful purposes in the light of the Board's discussion on the subject, as well as information on the status of the relevant technology. 2/ Secondly, because of the importance of the subject, the Board decided that all Members of the Agency should be accorded a full opportunity to express their opinions on the role the Agency could play. It may be added that last December, the General Assembly of the United Nations had requested the Secretary-General to prepare a report on the establishment within the framework of the Agency "of an international service for nuclear explosions for peaceful purposes, under appropriate international control", 3/ and that the Secretary-General of the United Nations had written to the Director General on the matter.

3. The Board accordingly invited all Members that so wished to participate in the work of an ad hoc committee which it set up to advise on the preparation of the present report, further inviting them to communicate views in advance for the committee's consideration. Twenty-seven Members responded to the latter invitation, and twenty-eight took part in the committee's meeting on 5 June. The Board took into account the

* Previously issued under the symbol GC(XIII)/610.

1/ Article V of the NPT.

2/ The analysis was circulated with Circular Letter O/452-6 on 13 March and information on technology on 29 April and 13 May.

3/ By resolution 2456 C (XIII).

recommendations made by the committee when preparing this report, which it generally approved on 12 June; one delegation, however, expressed reservations with regard to paragraph 13 (b) below which it considered inconsistent with Article V of the NPT.

THE AGENCY'S POSITION UNDER THE STATUTE

4. The Statute provides a broad basis for the role which the Agency might play. The provisions of Article II, which defines the Agency's objectives, encompass the kind of activity envisaged. Article III.A.1 provides the Agency with broad authority to "encourage and assist research on, and development and practical application of, atomic energy for peaceful purposes throughout the world", and to act on request "as an intermediary for the purposes of securing the performance of services or the supplying of materials, equipment, or facilities by one member of the Agency for another". Article III.2 authorizes the Agency to make provision for services and facilities "to meet the needs of research on, and development and practical application of atomic energy for peaceful purposes ... with due consideration for the needs of the under-developed areas of the world". In addition, the Agency is authorized, under Article III.A.3 and 4 respectively, to "foster the exchange of scientific and technical information on peaceful uses of atomic energy" and "to encourage the exchange and training of scientists and experts in the field of peaceful uses of atomic energy". This is supplemented by Article VIII.C which stipulates that the Agency "shall take positive steps to encourage the exchange among its members of information relating to the nature and peaceful uses of atomic energy and shall serve as an intermediary among its members for this purpose". The Statute also provides that, in carrying out its functions, the Agency shall conduct its activities "in conformity with policies of the United Nations furthering the establishment of safeguarded world-wide disarmament and in conformity with any international agreements entered into pursuant to such policies" (Article III.B.1). Article III.C which stipulates that in carrying out its functions the Agency "shall not make assistance to members subject to any political, economic, military, or other conditions incompatible with the provisions of this Statute", is also relevant.

5. The Agency is thus authorized under its Statute to make available its own resources and services to all its Members for projects involving peaceful uses of nuclear explosives, and upon request to assist any Member or group of Members to make arrangements to secure necessary financing from outside sources to carry out such projects. The Agency is also authorized to take all steps needed to promote the development of the technology of nuclear explosions for peaceful purposes at the international level; it is moreover authorized to serve on request as an intermediary for the supply of services in connexion with this use of nuclear energy. As the NPT is the kind of international agreement alluded to in the Statute the Agency could assume appropriate roles, in conformity with the NPT, in regard to the use of nuclear explosives for peaceful purposes. It may be added that Article III.A.6 and D of the Statute would also be relevant in this context.

THE AGENCY'S POSITION IN RESPECT OF THE NPT^{4/}

6. Article V of the NPT foresees that non-nuclear-weapon States (NNWS) party to it will be able to obtain the benefits of nuclear explosions for peaceful purposes "under appropriate international observation and through appropriate international procedures": it also provides that these benefits shall be obtained "pursuant to a special international agreement or agreements". Negotiations on this subject are to begin as soon as possible after the NPT enters into force. It is to be noted that NNWS may also obtain the benefits in question "pursuant to bilateral agreements".

7. Under Article V, **therefore**, the Agency would clearly be involved in tasks of several different kinds. For example, it would be prepared to arrange or perform the "appropriate international observation" called for under the Article. Considerable further attention will have to be given to defining the concept of "appropriate international observation", and to determining the procedures under which such observation will be arranged and carried out. The purpose of such observation, apart from any other purposes that might be stipulated in agreements concluded under the Article, would be to provide appropriate assurances at the international level that the nuclear explosive devices used in providing the peaceful nuclear explosion service do in fact remain at all times under the custody and control of the nuclear-weapon State supplying the service and that the explosions are not carried out for other than the declared purposes.

THE AGENCY'S WORK IN RELATION TO NUCLEAR EXPLOSIONS FOR PEACEFUL PURPOSES

8. The technology of nuclear explosions for peaceful purposes is still at an early state of development, ^{5/} and the Agency's role in bringing the benefits of its application to Member States is likely to evolve gradually in the years ahead. Initially the chief task will be to ensure the fullest possible exchange and dissemination of information, to convene panels and to provide Members with advice on the status of the technology, the feasibility of possible applications, etc.; at a later stage the Agency may be involved in arrangements for actual projects. These functions are analysed in paragraph 10 below.

9. It should be stressed that a start has been made. The Agency has already provided technical assistance for a project dealing with the health and safety aspects of a proposed study for the use of nuclear explosives for peaceful purposes in Panama, and the programme for 1969-1974 provides for a number of further activities. ^{6/} A panel on the use of nuclear explosives for peaceful purposes is planned for this year, to be followed by a further panel in 1970.

^{4/} It should be noted that due account will also have to be taken of the provisions of the Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space or Under Water, signed on 5 August 1963, in connexion with nuclear explosions for peaceful purposes involving States which are Parties to that Treaty, since it is also applicable to explosions for peaceful purposes.

^{5/} The **annex** contains a brief summary of possible applications of nuclear explosives for peaceful purposes.

^{6/} See document GC(XII)/385, paras. 404 and 497 (b).

10. The categories of functions that the Agency could perform in relation to the use of nuclear explosives for peaceful purposes include those discussed below:

- (a) Information exchange. Promotion of the exchange of information on all aspects of the use of nuclear explosives for peaceful purposes (scientific and technical, economic, safety, etc.); 7/
- (b) Services to requesting member States. The Agency already has extensive experience in related fields, e.g. radiological health and safety, technical and economic feasibility studies, and would add to its staff appropriately qualified experts as necessary. Consultants could be engaged for a particular project, as was done in the case of Panama; additional staff could be recruited on short-term assignments to provide specific advisory services, as is done now in respect of several other fields of nuclear technology. As regards:
 - (i) Economic reviews. The Agency can, upon request of any party to a project, review the information bearing upon the question whether the project is economically feasible. This procedure has already been well developed in the case of the nuclear power projects in member States with which the Agency has been associated;
 - (ii) Safety reviews. The procedures for making reactor siting assessments, reactor safety assessments, etc. could serve equally well for safety reviews of projects for the use of nuclear explosives for peaceful purposes. The usual arrangement is that the Agency helps the requesting Government to convene an international group of experts selected by the Government from a list provided by the Agency. The experts' findings constitute their advice to the Government on the basis of their personal technical competence; the findings do not commit the countries that provide the experts, or the Agency. In addition, the Agency provides a technical secretariat for the group and may help meet the costs of convening the group;
 - (iii) Technical assistance. The procedures are well developed both under the Agency's own programme and under the Technical Assistance Component of the United Nations Development Programme (UNDP(TA)); they could also be applied in providing services for a nuclear explosion for a peaceful purpose. The priorities for technical assistance as between different projects and classes of projects are set by Governments. The limiting factor is the shortage of funds;

7/ At present the Agency is preparing a comprehensive bibliography of the available literature relating to peaceful nuclear explosions. The subject scope of the International Nuclear Information System will cover this subject from the start.

- (iv) Feasibility study arrangements. It would appear to be in the interest of a State considering the use of nuclear explosives for a peaceful purpose to have a detailed feasibility study of the project made as a first step. Such a study might be performed by the State itself, with the help, if necessary, of outside assistance, including assistance from the Agency. A request for such assistance might be referred to the Agency under UNDP(TA), or might be arranged direct with the Agency on a reimbursable or partly reimbursable basis. A study might cover:
- (aa) Technological aspects (blast, cavity formation, fracture, earth-moving effects, etc.);
 - (bb) General health and safety aspects (seismology, shock, ecological effects, etc.);
 - (cc) Radiological health and safety aspects (exposure control, site and environmental levels of radiation, radioactivity during and after the explosion, post-explosion safety clearances, etc.); and
 - (dd) Economic aspects and costs (explosion costs, auxiliary costs, economic benefits, financial arrangements, etc.); and
- (v) Intermediary arrangements. The experience the Agency has acquired in serving as an intermediary between States for the supply of special fissionable material and equipment will be useful in relation to the provision of nuclear explosion services for peaceful purposes. The Agency could act as the intermediary in arranging for such services. As far as the NPT is concerned, an agreement would be concluded between the requesting NNWS, the nuclear-weapon State that the NNWS had selected to provide the service, and the Agency, setting forth the terms and conditions, consistent with the NPT, under which the service would be rendered. The nuclear explosive device would remain in the custody and under the control of the nuclear-weapon State performing the service 8/;
- (c) Access to scientific by-products. The Agency could make co-operative arrangements to enable national and international scientific organizations to benefit from the scientific by-products which are likely to emerge from the use of nuclear explosives for peaceful purposes.

11. It goes without saying that the effectiveness of the Agency's operations will ultimately depend on the provision by the nuclear-weapon States of all the necessary information. The Board is confident that these members will do all they can to co-operate fully in this respect.

8/ See para. 7 above.

CO-OPERATION WITH OTHER INTERNATIONAL ORGANIZATIONS

12. In carrying out a number of these functions - economic evaluations and safety reviews, for instance - the Agency would seek help in appropriate cases from other organizations in the United Nations family. Within the framework of the co-operation thus envisaged, the Board has deemed it appropriate to request the Director General to communicate a copy of the present report to the Secretary-General of the United Nations for his use in preparing the report requested by the General Assembly. 9/

CONCLUSIONS

13. After studying the possible services that the Agency would be able to provide in relation to nuclear explosions for peaceful purposes, and taking into account the Agency's statutory position, the technical competence it has acquired and its existing procedures for providing services to member States, the Board has concluded that:

- (a) Activities of the Agency in relation to peaceful nuclear explosions will fall within its statutory objectives and functions to accelerate and enlarge the contribution of atomic energy to peace, health and prosperity throughout the world;
- (b) Performance of the functions of the international body referred to in Article V of the NPT, as well as the international observation called for by that Article, are within the Agency's technical competence and clearly fall within the scope of its statutory functions;
- (c) In the light of the experimental status of the technology, the Agency should approach this subject on an evolutionary basis, devoting its attention initially to the exchange and dissemination of information. The Agency must keep itself informed of technological progress and developments so as to enable it to provide member States on request with expert advice and assistance in investigating the technology, the economics and the health and safety aspects of the use of nuclear explosives for peaceful purposes; and
- (d) The existing range of services offered by the Agency is appropriate and adequate for the purpose of providing assistance to member States with peaceful nuclear explosions in the present state of development of the relevant technology. At this stage the tasks of the Agency in relation to peaceful nuclear explosions can be carried out by the Department of Technical Operations of the secretariat. The Director General will subject the organization of the Agency's work in connexion with peaceful nuclear explosions to periodic reviews, and report thereon to the Board.

9/ See para. 2 above.

ANNEX

POSSIBLE APPLICATIONS OF NUCLEAR EXPLOSIVES FOR PEACEFUL PURPOSES

A brief summary

1. This paper describes the possible industrial application of nuclear explosive devices, and reviews the current requirements for further information and testing before nuclear explosions can become commercially feasible for peaceful purposes. It cites the advantages of nuclear detonations, such as the considerably lower unit costs both of the explosives themselves and their emplacement, and their disadvantages, e.g. the creation of radioactive contamination, as compared with conventional high explosives.
2. Possible industrial utilization of nuclear explosives may be divided into the following categories:
 - (a) The creation of large underground voids for the purpose of storing gas, oil and other fluids;
 - (b) Explosions deep underground to fracture low-permeability reservoirs of natural gas and oil-bearing strata to increase permeability, which could result in significant increases in the productivity of gas or oil from a single well;
 - (c) The formation of an underground chimney of permeable oil shale rubble. The oil could be recovered by its in situ retorting from the shale by the heat generated during the explosions. Similarly oil from tar sands could become recoverable by reducing its viscosity through the heat generated;
 - (d) Comparatively deep underground explosions to create chimneys and fragment ore bodies so as to produce a highly permeable rock mass. Minerals of value may then be recoverable by a modified block-caving technique or by in situ leaching;
 - (e) Near-surface explosions in large low-grade ore deposits to fragment rock and reduce the normal open-pit mining costs;
 - (f) The use of nuclear excavations in large-scale engineering projects, such as canal-building and harbour excavation; and
 - (g) More speculative projects, such as the use of nuclear explosives to fragment rock and increase the surface area of hot rock in marginal geothermal regions, with a view to the use of the steam produced to generate electricity.
3. A disadvantage inherent in nuclear explosions is the accompanying release of radioactivity. While considerable progress has been achieved in

reducing the radioactivity generated, more information on this subject would have to be acquired or released.

4. Further knowledge would also have to be gained in the fields of seismic coupling, product contamination, ecology, geology and hydrology. Research projects in these fields should be designed for each peaceful use of a nuclear explosive, since available data in these and other fields pertinent to nuclear explosive devices are limited. A great deal of quantitative information will have to be acquired before many of the applications mentioned become feasible.

5. It is foreseen that in respect of the availability of natural resources, the use of nuclear explosives could have a significant effect on the world's hydrocarbon resources. It is speculated that the number of countries self-sufficient in these fuels could be increased by this means. In a similar vein it is argued that a number of countries could become exporters of mineral products and develop indigenous hydro-electric schemes more economically. Finally, bottlenecks in both land and sea transport could be overcome by the use of nuclear explosives for creating harbours, canals and highway cuts; and certain beneficial geographical alterations, such as the flooding of desert areas, could become more feasible.