REPORT OF THE UNITED NATIONS CONFERENCE FOR THE PROMOTION OF INTERNATIONAL CO-OPERATION IN THE PEACEFUL USES OF NUCLEAR ENERGY

Geneva, 23 March – 10 April 1987

UNITED NATIONS

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I. SUMMARY OF THE WORK OF THE CONFERENCE

A. Introduction

1. Pursuant to General Assembly resolution 32/50, the United Nations Conference for the Promotion of International Co-operation in the Peaceful Uses of Nuclear Energy met at Geneva from 23 March to 10 April 1987. The following is a summary of the Conference's substantive work.

B. Principles universally acceptable for international co-operation in the peaceful uses of nuclear energy and appropriate ways and means for the promotion of such co-operation, as envisaged in General Assembly resolution 32/50, and in accordance with mutually acceptable considerations of non-proliferation

2. The Conference conducted a thorough and detailed discussion of the important issues covered by this topic, and it provided an opportunity for delegations to present their views, concerns and interests. It recognized that nuclear energy could contribute to economic and social development and to the well-being of many countries. The Conference reviewed the widespread and varied forms of international co-operation in the peaceful uses of nuclear energy that were already occurring, and it also reviewed existing constraints on such co-operation. The Conference urged that international peaceful nuclear co-operation be enhanced and broadened.

3. Extensive efforts were made by the Conference to reach agreement on principles universally acceptable for international co-operation in the peaceful uses of nuclear energy, and on appropriate ways and means for the promotion of such co-operation. The discussion reaffirmed that those matters were of importance and of major concern to participants. It also showed, however, that differences of opinion remained, and the Conference was not able to surmount those differences. Thus, despite its efforts, the Conference was unable to reach agreement on "Principles for international co-operation in the peaceful uses of nuclear energy" or on "Ways and means" for the promotion of such co-operation.

4. The Conference hoped that its active and comprehensive exchange of views would lead to a better appreciation of respective positions on these matters and to further mutual understanding. It also considered that the International Atomic Energy Agency (IAEA) and international organizations might benefit from these exchanges.

C. The role of nuclear power for social and economic development and the role of other peaceful applications of nuclear energy, such as food and agriculture, health and medicine, hydrology, industry etc. for social and economic development

5. The Conference had an extensive discussion of the role of the peaceful uses of nuclear energy for economic and social development, covering a wide range of subjects relating to nuclear technology and applications. This discussion highlighted issues of interest to developing and developed countries and ways that nuclear energy could be useful for them. The Conference considered that the technical reports presented and the discussions that took place could be used in planning national programmes for development, use and safety of nuclear energy for peaceful purposes. The Conference agreed that the technical reports referred to above should be made widely available and requested the Secretary-General to consider the publication of those reports within existing financial resources.

6. The extensive and active involvement of the IAEA in all fields of nuclear energy co-operation was clearly reflected throughout the presentations and discussions. In particular, the IAEA, as the central organization for nuclear co-operation, should continue to play an important role in promoting the peaceful uses of nuclear energy.

II. ORIGIN AND PREPARATION OF THE CONFERENCE

7. The question of convening a conference for the promotion of international co-operation in the peaceful uses of nuclear energy for economic and social development, under the auspices of the United Nations, was first considered by the General Assembly at its thirty-second session. In its resolution 32/50 of 8 December 1977, the Assembly, having expressed the conviction that the objectives of the full utilization of nuclear energy for peaceful purposes and the prevention of the proliferation of nuclear weapons could be promoted by the establishment of universally acceptable principles for international co-operation in the use of nuclear energy for peaceful purposes, spelt out the following principles:

> "(a) The use of nuclear energy for peaceful purposes is of great importance for the economic and social development of many countries;
>
> "(b) All States have the right, in accordance with the principle of sovereign equality, to develop their programme for the peaceful use of nuclear technology for economic and social development, in conformity with their priorities, interests and needs;
>
> "(c) All States, without discrimination should have access to and should be free to acquire technology, equipment and materials for the peaceful use of nuclear energy;
>
> "(d) International co-operation in the field covered by the present resolution should be under agreed and appropriate international safeguards applied through the International Atomic Energy Agency on a non-discriminatory basis in order to prevent effectively proliferation of nuclear weapons."

At the same time, the Assembly invited all States, as well as the international organizations concerned, to respect and observe those principles. Since then, the Assembly has each year reaffirmed the principles and provisions of that resolution.

8. After further consideration of the matter at its thirty-third and thirty-fourth sessions, 1/ the General Assembly, in its resolution 35/112 of 5 December 1980, decided to convene a United Nations Conference for the Promotion of International Co-operation in the Peaceful Uses of Nuclear Energy, in accordance with the objectives of resolution 32/50. The Assembly also decided to establish a Preparatory Committee for the Conference, whose composition would be in accordance with the principle of equitable geographical representation. 2/

9. At its first session, held at Vienna from 3 to 7 August 1981, the Preparatory Committee agreed to recommend, inter alia, that the Conference should be held at Geneva from 29 August to 9 September 1983. 3/ In its subsequent resolution 36/78 of 9 December 1981, the General Assembly recognized the increasing significance of the peaceful uses of nuclear energy for economic and social development, in particular its important role in accelerating the development of the developing countries, and expressed its conviction that the Conference, through the promotion of international co-operation in the peaceful uses of nuclear energy, should contribute greatly

to meeting the increasing energy and other requirements of many countries, particularly developing ones. The Assembly considered that the outcome of the Conference should be embodied in appropriate documents, in a suitable format, pertaining, inter alia, to ways and means of promoting international co-operation in the peaceful uses of nuclear energy. The Assembly also urged all States to contribute to the successful preparation of the Conference by, inter alia, making available, in conformity with international obligations, information on their scientific and technological achievements and practical experiences in the field of peaceful uses of nuclear energy. The IAEA, specialized agencies and other relevant organizations in the United Nations system were also invited to contribute effectively to the preparations for the Conference. In response to this invitation, 52 national reports were submitted by Governments and 18 reports by intergovernmental organizations prior to or during the Conference. The list of reports submitted is contained in annex II.

10. At its second session, held at Vienna from 21 to 25 June 1982, the Preparatory Committee had before it, among other documents, the summing-up of an informal meeting of its bureau which had taken place on 20 and 21 April 1982. At that informal meeting, discussions had mainly centred on the content of the agenda for the Conference and on the nature, type and preparation of documents for it. Different points of view had been expressed concerning the documents incorporating decisions and conclusions of the Conference; resolutions and/or a final act in the form of a possible "declaration", "programme of action" or "code of conduct" had been mentioned as examples. At this plenary session of the Preparatory Committee, delegations made a number of specific proposals concerning the provisional agenda of the Conference and exchanged views on draft provisional rules of procedure for it. 4/

11. The third session of the Preparatory Committee was held at Vienna from 27 October to 2 November 1982. The Committee had before it some information provided by the IAEA, specialized agencies and other United Nations organs outlining their relevant activities and proposed inputs to the documentation for the Conference. An informal contact group established by the Committee to consider the draft provisional agenda for the Conference failed to reach agreement and the proposals which had been made by various delegations were reproduced in an annex to the report of the Committee to the General Assembly. 5/

12. At its thirty-seventh session, in resolution 37/167 of 17 December 1982, the General Assembly reaffirmed the responsibility of States that are advanced in the nuclear field to promote the legitimate nuclear energy needs of the developing countries by participating in the fullest possible transfer of nuclear equipment, materials and technology under agreed and appropriate international safeguards applied through the IAEA on a non-discriminatory basis in order to prevent effectively the proliferation of nuclear weapons. The Assembly expressed concern at the lack of progress in the preparatory process and recognized the pressing need to speed up and complete substantive preparations for the Conference. It requested the Preparatory Committee and the Secretary-General of the Conference to make appropriate arrangements, including as necessary through inter-sessional work by States Members of the Committee and also through regional efforts, with a view to ensuring meaningful results from the Conference. The Assembly reiterated that the aim of the Conference was to promote international co-operation in the peaceful

uses of nuclear energy and, to that end, to establish universally acceptable principles for such co-operation in accordance with the objectives of resolution 32/50. It also reaffirmed its earlier provision that the outcome of the Conference should be embodied in appropriate documents, in a suitable format, pertaining, inter alia, to ways and means of promoting international co-operation in the peaceful uses of nuclear energy.

13. At its fourth session, which was held in New York from 28 March to 8 April 1983, the Preparatory Committee established an informal contact group to take up the consideration of the substantive questions before the Committee. After a series of meetings, the group informed the Committee that it could not report agreement on a draft agenda and that no agreement had been reached on the decision-making process of the Conference either. 6/

14. At its resumed thirty-seventh session, the General Assembly, by decision 37/453 of 10 May 1983, decided not to convene the Conference in 1983. In decision 37/454 of the same date, the Assembly took note of the Committee's decision that the Conference secretariat should proceed as far as practicable with the preparations for the Conference in accordance with the relevant resolutions of the General Assembly.

15. At its thirty-eighth session, the General Assembly, in resolution 38/60 of 14 December 1983, decided that the Conference should be held in 1986. It requested the Chairman of the Preparatory Committee and the Secretary-General of the Conference to undertake immediately appropriate consultations with Member States which could facilitate the resolution of pending issues related to the Conference, including its provisional agenda and rules of procedure, as well as its venue and actual dates. The Assembly also urged all States, the IAEA, as well as the specialized agencies and other relevant organizations of the United Nations system to co-operate actively in the preparation of the Conference.

16. At the fifth session of the Preparatory Committee, which was held at Vienna from 25 June to 6 July 1984, the Chairman of the Committee and the Secretary-General of the Conference reported on their extensive consultations with Member States and suggested formulations for item 5 of the draft provisional agenda for the Conference and for the decision-making process in the Conference. 7/ Those formulations were approved by the Preparatory Committee. At the same time, without prejudice to the rules of procedure of the Conference and without setting a precedent, an understanding was reached in the Committee that decisions in the Conference relating to the substance of item 5 of the agenda should be adopted by consensus. At the same session, the Committee approved the draft provisional rules of procedure for the Conference as a whole. The Committee also agreed to begin formal/official inter-sessional intergovernmental work with its sixth session, leaving the setting-up of the actual mechanism for this work and the date of commencement of the preparation of the concluding document(s) of the Conference to be decided at its sixth session. 8/

17. The General Assembly at its thirty-ninth session adopted resolution 39/74 of 13 December 1984 by which, inter alia, it requested the Chairman of the Committee and the Secretary-General of the Conference, on the basis of the practice successfully used before the fifth session of the Committee, to continue informal individual and group consultations in order to assist the Committee in expediting the necessary preparations for the Conference. Noting

with appreciation the progress made in those preparations, the Assembly decided that the United Nations Conference for the Promotion of International Co-operation in the Peaceful Uses of Nuclear Energy should be held at Geneva from 10 to 28 November 1986 and that the Preparatory Committee at its sixth session should consider, inter alia, the mechanism for formal/official inter-sessional intergovernmental work and the commencement of preparation of the concluding document or documents of the Conference. The Assembly invited the IAEA, the specialized agencies and other relevant organizations of the United Nations system to ensure that their contributions to the input documents for the Conference should be concise and comprehensive and specifically related to the purpose, aims and objectives of the Conference, including, in particular, suggestions regarding practical and effective ways and means for the promotion of international co-operation in the peaceful uses of nuclear energy, so as to achieve meaningful results from the Conference in accordance with the objectives of General Assembly resolution 32/50. Finally, the Assembly invited all States to co-operate actively in the preparation of the Conference and to make available, as soon as possible, the information requested in General Assembly resolution 36/78 and in the broad questionnaire circulated by the Secretary-General of the Conference in March 1984.

18. In the course of 1985, various regional activities in preparation for the Conference were undertaken in accordance with the request by the General Assembly, including five regional expert group meetings. The first, for the Asian and Pacific region, was convened at Bangkok from 14 to 17 January 1985; the second, for the Latin American and Caribbean region, was convened at Santiago from 15 to 18 April 1985; the third, for the Western Asian region, was convened at Baghdad from 13 to 16 May 1985; the fourth, for the African region, was convened at Addis Ababa from 1 to 4 July 1985; and the fifth, for Europe, the United States of America and Canada, was convened at Vienna from 4 to 6 November 1985. At those meetings, the experts reviewed the current status of nuclear power and other peaceful applications of nuclear energy in their respective regions; considered the existing and foreseeable constraints and difficulties in the introduction and development of peaceful uses of nuclear energy; and made suggestions aimed at overcoming such constraints and ways and means of promoting international co-operation. 9/

19. At its sixth session, which was held at Vienna from 21 October to 1 November 1985, the Preparatory Committee established a working group to carry out formal/official inter-sessional intergovernmental work, participation being open to members of the Committee and to other interested Member States. The working group would, inter alia, develop an outline of the final document or documents of the Conference, indicating its preliminary structure and possible elements. The Preparatory Committee also reviewed the input documents for the Conference prepared by the IAEA and a number of other organizations of the United Nations system, bearing in mind the requirement that they should conform to the guidelines given in General Assembly resolution 39/74, and requested the relevant organizations to submit to its seventh session revised or updated texts in the light of the comments by the members of the Committee. Finally, based on practical considerations, the Committee decided that the Conference should be held at Geneva from 23 March to 10 April 1987. 10/

20. At its fortieth session, the General Assembly, in resolution 40/95 of 12 December 1985, approved the conclusions and decisions contained in the report of the Preparatory Committee.

21. The seventh session of the Preparatory Committee was held at Vienna from 10 to 21 November 1986. The Committee was informed that the inter-sessional intergovernmental working group it had established at its sixth session, after four rounds of meetings, had been unable to approve a report for submission to the Committee. However, the Chairman of the Committee noted that the working group had actually covered important ground within its mandate: it was now up to the Preparatory Committee itself to continue the remaining work. The Committee decided to establish for that purpose an open-ended contact group under the guidance of the Chairman. Subsequently, based on the deliberations of the contact group, the Preparatory Committee developed four working papers and agreed to forward them to the Conference for the latter's consideration. Those papers contained proposed possible recommendations on appropriate ways and means of promoting international co-operation in the peaceful uses of nuclear energy, a proposed outline of the output document of the Conference, and proposed procedures and topics for the work of its Committees I and II. At the same session, the Preparatory Committee decided that other papers which had been circulated, presented or considered at the meetings of the inter-sessional intergovernmental working group, the contact group or the current session of the Committee, but were either not discussed or discussion on them was inconclusive, should also be forwarded to the Conference. 11/

22. At its forty-first session, the General Assembly, in resolution 41/212 A of 11 December 1986, noted with satisfaction that the Preparatory Committee for the Conference had successfully concluded its work. Recalling that the Conference represented a global effort specifically for the purpose of promoting international co-operation in the peaceful uses of nuclear energy for economic and social development, the General Assembly invited all States to participate in it at an appropriately high level. In resolution 41/212 B of the same date, the Assembly appealed to all Governments to take into account, during the Conference, the legitimate interest of neighbouring countries that could be affected by transboundary effects of the use of nuclear energy.

III. ATTENDANCE AND ORGANIZATION OF WORK

A. Date and place of the Conference

23. The United Nations Conference for the Promotion of International Co-operation in the Peaceful Uses of Nuclear Energy was held at Geneva from 23 March to 10 April 1987. During that period, the Conference held 15 plenary meetings.

B. Pre-Conference consultations

24. Pre-Conference consultations open to all States invited to participate in the Conference were held at Geneva on 19 and 20 March 1987 to consider a number of procedural and organizational matters. The pre-Conference consultations were conducted under the chairmanship of Carlos Augusto de Proenca Rosa (Brazil) who reported on the consultations to the Conference at its opening meeting.

25. The Conference accepted the conclusions of the pre-Conference consultations as a basis for the organization of its work.

C. Attendance

26. The following 106 States were represented at the Conference:

Afghanistan, Algeria, Argentina, Australia, Austria, Bahrain, Bangladesh, Belgium, Bhutan, Bolivia, Brazil, Bulgaria, Burma, Byelorussian Soviet Socialist Republic, Cameroon, Canada, Central African Republic, Chile, China, Colombia, Costa Rica, Côte d'Ivoire, Cuba, Cyprus, Czechoslovakia, Democratic People's Republic of Korea, Democratic Yemen, Denmark, Dominican Republic, Ecuador, Egypt, Ethiopia, Finland, France, Gabon, German Democratic Republic, Germany, Federal Republic of, Ghana, Greece, Guatemala, Holy See, Hungary, India, Indonesia, Iran (Islamic Republic of), Iraq, Ireland, Israel, Italy, Japan, Jordan, Kenya, Kuwait, Lebanon, Libyan Arab Jamahiriya, Luxembourg, Madagascar, Malaysia, Mexico, Mongolia, Morocco, Nepal, Netherlands, New Zealand, Nicaragua, Nigeria, Norway, Pakistan, Panama, Paraguay, Peru, Philippines, Poland, Portugal, Qatar, Republic of Korea, Romania, Rwanda, San Marino, Saudi Arabia, Senegal, Somalia, Spain, Sri Lanka, Sudan, Swaziland, Sweden, Switzerland, Syrian Arab Republic, Thailand, Tunisia, Turkey, Ukrainian Soviet Socialist Republic, Union of Soviet Socialist Republics, United Arab Emirates, United Kingdom of Great Britain and Northern Ireland, United Republic of Tanzania, United States of America, Uruguay, Venezuela, Viet Nam, Yemen Arab Republic, Yugoslavia, Zaire, Zambia and Zimbabwe.

27. The United Nations Council for Namibia was represented at the Conference.

28. The following organizations that have received a standing invitation from the General Assembly to participate in the capacity of observers were represented: Council for Mutual Economic Assistance, Commission of the European Communities, League of Arab States, Organization of African Unity.

29. The following national liberation movements were represented by observers: Palestine Liberation Organization, African National Congress of South Africa, Pan Africanist Congress of Azania, South West Africa People's Organization.

30. Members of the secretariats of the following United Nations bodies and offices were present during the Conference: United Nations Conference on Trade and Development, United Nations Department for Disarmament Affairs, United Nations Department of International Economic and Social Affairs, United Nations Department of Technical Co-operation for Development, United Nations Environment Programme, Economic Commission for Africa, Economic Commission for Europe.

31. Representatives of the following specialized agencies and related organizations participated in the work of the Conference: International Atomic Energy Agency (IAEA), International Labour Organisation (ILO), Food and Agriculture Organization of the United Nations (FAO), United Nations Educational, Scientific and Cultural Organization (UNESCO), World Health Organization (WHO), World Meteorological Organization (WMO), International Maritime Organization (IMO), United Nations Industrial Development Organization (UNIDO).

32. The following intergovernmental organizations were represented by observers: Agency for the Prohibition of Nuclear Weapons in Latin America, Joint Institute for Nuclear Research, Organisation for Economic Co-operation and Development/Nuclear Energy Agency.

33. A large number of concerned non-governmental organizations were represented by observers. The list of participants in the Conference is to be found in document A/CONF.108/INF.2/Rev.1 and Corr.1.

D. Opening of the Conference and election of its President

34. The Conference was opened by Amrik S. Mehta, Personal Representative of the Secretary-General of the United Nations and Secretary-General of the Conference.

35. The text of a message from the Secretary-General of the United Nations, Javier Perez de Cuellar, to the Conference was read by Jan Martenson, Director-General of the United Nations Office at Geneva.

36. Mohamed Ibrahim Shaker (Egypt) was elected President of the Conference by acclamation.

37. In his message to the Conference, the Secretary-General of the United Nations noted that in the history of human progress, energy had played a crucial role since development was, for the vast majority of the world's people, dependent on an adequate supply of energy. Nuclear power was seen by many as offering great promise in that regard, especially since the countries of the world were unevenly endowed with other energy sources. He added that each country must be free to choose for itself the energy sources suited to its national interests, needs and conditions. None should be deprived of access to the technology for peaceful and safe utilization of nuclear power.

38. The Secretary-General further noted that international co-operation in bringing the potential benefits of the atom to all countries needed to extend beyond the field of energy. In fact, for many developing countries, the application of nuclear techniques in fields such as health and medicine, food and agriculture and hydrology had more immediate relevance than nuclear energy to their economic and social development.

39. The Secretary-General pointed out that successful efforts had been made to separate, or compartmentalize, civilian and military uses of nuclear energy, but the laws of physics made them the opposite sides of the same coin. The enormous arsenals of nuclear weapons that existed generated fear and distrust among nations and peoples and posed a serious threat to humanity itself. International co-operation in the peaceful uses of nuclear energy could reach its full potential only in a world from which its potentially destructive uses had been eliminated. It was thus logical and wise to see the ultimate elimination of nuclear weapons as necessary for the realization of the full peaceful benefits of the atom.

40. The Conference was a pioneering global effort by the United Nations designed specifically for the purpose of promoting international co-operation in the peaceful uses of nuclear energy for economic and social development. This distinctive purpose of the Conference, said the Secretary-General, needed to be clearly understood. A system in which technologically advanced States stood apart from the rest in the peaceful uses of nuclear energy, as in other applications of modern science and technology, would be neither morally nor politically acceptable and, in the end, unsustainable. Yet, in order to promote international co-operation to counter such a possibility, a climate of confidence was essential between the technologically advanced and the developing countries. This required a greater measure of mutual understanding of each other's concerns. As a global forum with the widest possible participation, the Conference was ideally suited to consider these concerns realistically and constructively. The aim must be to establish an appropriate framework for enhanced international co-operation in the peaceful uses of nuclear energy that would serve the interests of both the technologically advanced and the developing countries.

41. Amrik Mehta, Personal Representative of the Secretary-General of the United Nations and Secretary-General of the Conference, in his opening address, stated that energy and prosperity were twins that marched together. Given the prevailing uncertainties and the vulnerability of energy supplies, the potential of the nuclear energy was considered by many as a promising means in helping to bring about the economic and social development so much needed in the greater part of the world. A number of countries had chosen nuclear power as a stable and viable source of energy for their needs. In particular, countries with little or no access to other energy sources had found the nuclear option especially attractive. For a large number of countries in the developing world, access to the use of nuclear techniques in the fields of food and agriculture, health and medicine, hydrology, industry, scientific and technological research, etc., had even more immediate relevance as a contributing factor towards their economic and social development. It was in that context, Mr. Mehta stated, that the need for international co-operation in the peaceful uses of nuclear energy was first considered by the General Assembly of the United Nations some 10 years ago, and that the Assembly in its resolution 32/50, had spelt out the principles which formed the basis for the Conference.

42. The Secretary-General of the Conference stressed that the central issue before the Conference was the promotion of international co-operation in the peaceful uses of nuclear energy for economic and social development. The Conference was by no means intended as a forum to make a case for or against the use of nuclear energy: those decisions were up to individual countries and each country had the right to choose for itself the energy sources most suited

to its national interests. However, as long as nuclear energy was in use in some parts of the world, international co-operation was necessary to ensure, on the one hand, that nuclear technology was not abused or misused in any way and, on the other, that its benefits were made available in a safe and secure manner.

43. Of late, there had been a world-wide expression in favour of strengthening co-operation in the peaceful uses of nuclear energy, particularly in the nuclear safety area. This had two aspects: one, of a post-accident remedial nature, and the other of a long-term and comprehensive nature related to the safe development of nuclear power in its totality, embracing all stages from planning, designing, siting, construction, operation, maintenance, waste disposal, health and environmental concerns. This required co-operation in such areas as infrastructure, manpower training, research and development, technical and scientific information, technological know-how and advances in safety mechanisms, etc. The possible effects and consequences of an accident were of concern equally to all countries, including those which might not be carrying out any nuclear activity on their territories. International co-operation for the safe development of nuclear energy was thus a matter of interest and concern equally for all countries.

44. The international community had been aware of the need for co-operation in the peaceful uses of nuclear energy for many years, particularly since the establishment of the IAEA, which had made a unique and historic contribution in this field. The present Conference should lead to the broadening of the scope of the activities of the IAEA and the strengthening of its central role as the principal international instrument for all nuclear-related activities, in co-operation with other concerned organizations of the United Nations system.

45. Given the purpose and the objective of the Conference, there was need essentially to look to the future with a view to exploring all possible ways and means for strengthening international co-operation. As a global forum with the widest possible participation, the Conference was ideally suited to consider all relevant concerns and lay a firm foundation for future international co-operation in this vitally important field. As stated by Mr. Perez de Cuellar in his message, the aim must be to establish an appropriate framework for enhanced co-operation that would serve the interests of both the technologically advanced and the developing countries.

46. The President of the Conference, Mohamed Ibrahim Shaker, in his opening statement noted that the Conference represented the first global effort under United Nations auspices designed specifically for the purpose of promoting international co-operation in the peaceful uses of nuclear energy for social and economic development, and emphasized the importance of the four principles adopted by consensus in General Assembly resolution 32/50, which he said should be the basis for the work of the Conference.

47. The President said the Conference should be guided by the preparatory work undertaken for it, which had been underway for a long time. The path leading to the Conference had not been an easy one and participants were to be engaged in a serious and demanding review of the question of international co-operation in the utilization of nuclear energy for economic and social development. In this review, security in applying this source of energy must be taken into account. He expressed his sincere hope that the spirit of mutual understanding and co-operation that prevailed during the preparatory process would be fully sustained to guarantee the success of the Conference.

48. In his statement to the Conference, Hans Blix, Director-General of the IAEA, stated that during the past three decades there had been very substantial progress in the dissemination and exploitation of nuclear science and technology. But, in that process, the problems, difficulties and dangers of the brave new world had also been encountered; while the military and civilian uses of nuclear energy were by no means inseparable, they were branches of the same tree of science. Peaceful uses could, however, be nurtured without creating a military threat, Mr. Blix pointed out. While most nations of the world dealt with the technology precisely this way, the problem of the further growth - both horizontal and vertical - of military nuclear technology presented mankind with a serious continuing challenge. Another challenge to survival related to the environment, he continued, while to billions of people the most immediate challenge was to escape from hunger, illness and poverty, and to achieve a level of socio-economic development which ensured life with dignity. It was the possibilities and problems raised by a transfer of this technology that was the subject of the present Conference, he stated. The IAEA, he said, had a great stake in the Conference. It was to be hoped that the Governments and organizations represented there would formulate new ideas on how to further facilitate the transfer of nuclear science and technology to promote development and how to set the right priorities. If much had been accomplished in that regard, much more remained to be done. He concluded by noting that the most important ingredients - political will and resources - must be put into play for success in harnessing nuclear technology for human betterment.

E. Adoption of the rules of procedure

49. At its first plenary meeting, on 23 March, the Conference adopted the provisional rules of procedure established by the Preparatory Committee (A/CONF.108/2).

F. Adoption of the agenda

50. At the same meeting, the Conference adopted the following agenda, as recommended by the Preparatory Committee (A/CONF.108/1).

1. Opening of the Conference.

2. Election of the President of the Conference.

3. Organizational matters:

   (a) Adoption of the rules of procedure;
   (b) Adoption of the agenda;
   (c) Organization of work;
   (d) Election of officers other than the President;
   (e) Credentials of representatives to the Conference:
      (i) Appointment of the members of the Credentials Committee;
      (ii) Report of the Credentials Committee.

4. General debate.

5. Principles universally acceptable for international co-operation in the peaceful uses of nuclear energy and appropriate ways and means for the promotion of such co-operation, as envisaged in General Assembly resolution 32/50, and in accordance with mutually acceptable considerations of non-proliferation.

6. Role of nuclear power for social and economic development.

7. Role of other peaceful applications of nuclear energy, such as food and agriculture, health and medicine, hydrology, industry etc., for social and economic development.

8. Adoption of concluding document(s).

9. Closure of the Conference.

G. Establishment of the main Committees and organization of work

51. At the first plenary meeting, as recommended by the Preparatory Committee, the Conference also decided to establish two main Committees. It further decided that agenda item 5 would be considered by Committee I and agenda items 6 and 7 by Committee II.

52. At the same meeting, as agreed at the Preparatory Committee, the President read out the following text:

> "Without prejudice to the rules of procedure of the Conference and without setting a precedent, an understanding was reached in the Preparatory Committee that decisions in the Conference relating to the substance of agenda item 5 should be adopted by consensus."

H. Election of officers other than the President

53. Also at its first plenary meeting, the Conference elected representatives of the following 25 States as Vice-Presidents:

> Algeria, Argentina, Bangladesh, Belgium, Cameroon, Canada, China, Czechoslovakia, Indonesia, Iran (Islamic Republic of), Iraq, Italy, Kenya, Mongolia, Netherlands, Nigeria, Peru, Sudan, Syria, Swaziland, Union of Soviet Socialist Republics, United States of America, Venezuela, Yugoslavia, Zambia.

54. The Conference elected H. Thielicke (German Democratic Republic) Rapporteur General by acclamation.

55. The Conference elected by acclamation F. Cuevas Cancino (Mexico) as Chairman of Committee I and I. Makipentti (Finland) as Chairman of Committee II.

I. Appointment of members of the Credentials Committee

56. At its ninth plenary meeting, the Conference appointed representatives of the following States as members of the Credentials Committee: China, Ghana, Netherlands, Paraguay, Philippines, Rwanda, Union of Soviet Socialist Republics, United States of America, Venezuela. The Credentials Committee was chaired by Adolfo Raul Taylhardat (Venezuela).

J. Messages received by the Conference

57. The Conference received messages from the Secretary-General of the United Nations and Heads of State or Government of China, Egypt and Iraq, the texts of which are contained in annex I.

IV. SUMMARY OF THE GENERAL DEBATE

58. In the course of nine plenary meetings, held from 23 to 27 March 1987, the Conference heard statements by 73 speakers from States, specialized agencies and other intergovernmental organizations under agenda item 4. The following is a brief account of the main points made in those general statements.

59. Recalling the four principles set out in General Assembly resolution 32/50 of 8 December 1977, a large number of speakers stressed the usefulness and timeliness of an international conference, under the auspices of the United Nations system, aimed at promoting international co-operation in the peaceful uses of nuclear energy for economic and social development. While the possibility of such a conference was first considered some 10 years ago, the need for greater co-operation, it was stated, was today more compellingly clear than ever. It was also stressed by several speakers that international co-operation had increased steadily over the past decade. Many speakers emphasized that the world had gradually come to recognize the considerable potential of nuclear energy for the well-being of mankind - not only as a major source of power in a world of diminishing energy resources - but also in a multitude of other applications, such as medicine, industry, hydrology and geophysics, food and agriculture, and mineral exploration.

60. Several speakers noted that their countries were using nuclear power to help meet their energy requirements because of either the high cost of oil, the scarcity of other resources or environmental concerns. Some contended that fossil-fuel, being a non-renewable resource, was too precious to be burnt for the generation of electricity when there were other options. Apart from the fact that it was depletable, fossil-fuel had more valuable applications as a source of raw materials for a wide range of industries, and it was, therefore, in the common interest of both producers and consumers to exploit alternative sources of energy for electricity generation. Some other speakers expressed concern about the growth of nuclear power facilities in the world, including the greater risks arising from an increase in the transport of radioactive materials and from fuel reprocessing. They indicated that while nuclear power might be an option for some countries, they themselves were not using it due to environmental and safety considerations. And, in at least one instance, nuclear energy was to be phased out.

61. Many speakers emphasized that non-power peaceful applications of nuclear technology in general - and the options they offer - were today essential for the economic and social development of any country, and particularly relevant to the needs of developing countries. Most speakers stated that non-power nuclear technology was today being increasingly used and praised the role of the IAEA in the process. However, a number noted that there remained a large gap between developed and developing countries in that regard. Thus, it was stated, the benefits from the application of nuclear science and technology for improving the quality of life had remained highly concentrated in the developed world.

62. In order to exploit fully the potential benefits of nuclear technology for peaceful purposes, international co-operation was increasingly vital. The view was expressed that international co-operation had already transformed the situation which prevailed 20 years ago - namely, a world with a clear

distinction between supplier and recipient of nuclear materials and technology. There was hardly a country today whose nuclear industry centred entirely on domestic resources, it was noted. Further, it was maintained that countries which were both suppliers and recipients could in the future play a positive role in furthering international co-operation since they well understood the problems and concerns of both sides. Some speakers stated that there was also considerable potential for South-South co-operation since the developing countries had suffered the most from being denied access to peaceful nuclear technology.

63. Several speakers noted that the splitting of the atom provided a new source of energy which could bring unprecedented benefits for economic and social development and unprecedented destruction. The need to avoid the potentially harmful consequences of the use of nuclear technology was another important consideration in favour of closest possible international co-operation.

64. All speakers stressed the importance of non-proliferation. Some spoke in terms of the non-proliferation of nuclear weapons, while others referred to the non-proliferation of nuclear weapons and other nuclear explosive devices. There were differing views as to the actual efficacy of non-proliferation mechanisms. Several speakers maintained that the best way to achieve non-proliferation objectives would be the cessation of the nuclear arms race and the complete elimination of nuclear weapons.

65. Many speakers referred to the role of the Non-Proliferation Treaty in international nuclear co-operation. Several speakers attached fundamental importance to the NPT as an essential basis for co-operation in the peaceful uses of nuclear energy. Some speakers held that the Treaty and its safeguards system had not hampered the economic, scientific and technological development of the Parties to the Treaty or international co-operation in peaceful nuclear activities. They pointed out that strict implementation of the NPT, as well as universal adherence to it, would further promote the establishment of a world-wide framework for the peaceful uses of nuclear energy. The view was expressed that comprehensive non-proliferation assurances that nuclear supply would not be misused were necessary to provide the confidence needed for peaceful nuclear co-operation.

66. Some speakers, from States Parties to the NPT, criticized violations of the Treaty by States Parties as well as discrimination against developing countries Parties to the NPT.

67. Other speakers declared themselves opposed to the NPT which, in their view, was discriminatory as it now stood. According to them, the Treaty had failed to achieve its key objectives because it placed excessive emphasis on preventing horizontal proliferation, while vertical and spatial proliferation continued. It was thus not a balanced instrument as far as rights and obligations were concerned. A view was expressed that there was a genuine need for a new international nuclear order based on non-discrimination and the sovereign equality of all States, and in better step with existing technical and political realities. Some speakers emphasized that the issue of non-proliferation should not overshadow other important issues, including international co-operation in the peaceful uses of nuclear energy. They were in favour of safeguards where relevant, but not for the imposition of full-scope safeguards, and expressed the view that IAEA safeguards, where relevant, should be applied to nuclear equipment and materials supplied and produced from the same.

68. Other speakers expressed their belief that excesses - whether of unjustified stringency or excessive laxity - could only lead to international nuclear disorder. The promotion of the peaceful uses of nuclear energy, within a framework of widespread and confident international co-operation, under stable and predictable conditions and respecting reasonable non-proliferation conditions, constituted, in the view of these speakers, the objective to be pursued.

69. Several speakers expressed the conviction that the elimination of the danger of nuclear war, nuclear disarmament and the prevention of the arms race in new spheres, would improve the climate conducive to furthering international co-operation in the peaceful uses of nuclear energy. In that regard, some speakers referred to the need for a comprehensive system of international peace and security. Some speakers underlined the importance of a comprehensive ban on nuclear weapon tests. The view was also expressed that measures of nuclear disarmament would release enormous financial, material, scientific and human resources, some of which could be used for promoting peaceful applications of the atom, including increased assistance to developing countries in that field. Several speakers noted the importance of on-going negotiations on arms limitation and disarmament.

70. All speakers emphasized the importance of nuclear safety. Several noted that the problem of ensuring nuclear safety could not be a matter pertaining to only one country, but had to be dealt with by the whole international community. Some speakers advocated the creation of an international system for the safe development of nuclear power. A number of speakers recalled that the safety of nuclear installations was the exclusive responsibility of the State concerned, a responsibility which could not be delegated without jeopardizing the safety itself. Stressing the need for international co-operation in this matter, they noted that such co-operation should have as a primary goal assistance to States in undertaking their national responsibilities. Other speakers stated that the transboundary effects of possible nuclear accidents required international co-operative measures.

71. In that regard, several speakers stressed that international nuclear safety co-operation needed to be strengthened. They expressed satisfaction with the two Conventions concluded in 1986 under the aegis of the IAEA - namely, the Convention on Early Notification of a Nuclear Accident and the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency. It was noted that the recent adoption of those two Conventions was further evidence of the competence and efficacy of the IAEA. Several speakers said that there was a need to supplement the two Conventions with bilateral and regional agreements, inter alia, by establishing civil liability with respect to those countries which were not engaged in nuclear energy production.

72. None the less, a number of speakers emphasized that those Conventions were not by themselves enough. While the Conventions were aimed at mitigating the consequences of an accident, reducing the risk of an accident was even more important, it was stated. It had become evident that there was need for closer co-operation of a long-term and comprehensive nature, relating to the safe development of nuclear power in its totality and embracing all stages from planning to designing, siting and operation, to waste disposal and health and environmental concerns. A suggestion made was that binding rules should be established to guide safety at nuclear installations on a global basis.

73. Many countries, both developing and developed, shared the view that regional co-operation could also assist their nuclear energy programmes. In particular, the benefits could be seen in terms of reduced costs of construction and maintenance and other factors. It was suggested that regional environmental monitoring systems be established in Africa and Asia, under the IAEA, in order to provide radiological monitoring. It was also proposed that the management of disposal of radioactive wastes should be undertaken on a regional basis.

74. There was also support given by participants to regional arrangements covering, inter alia, the CMEA countries, the OECD countries, EURATOM, the Nordic countries, the IAEA Regional Co-operative Agreement for Asia and the Pacific, and ARCAL for Latin American countries. The goals of economic and technical co-operation among developing countries, particularly within regions, were also seen to be relevant.

75. Another aspect of regional co-operation was the support given by some speakers to the creation of nuclear weapon-free zones. In addition to the existing Tlatelolco Treaty, which is intended to cover Latin America and the Caribbean, it was recalled that the Treaty of Rarotonga had come into force in December 1986, creating a nuclear-free zone in the South Pacific region. Some speakers expressed support for the establishment of such zones in the Balkans, Central Europe, South Asia, Southeast Asia, the Middle East and Africa. Reference was also made to the importance of the proposal to create a nuclear-free peace zone on the Korean Peninsula and efforts for its realization. According to another view, this proposal lacked practicability.

76. Several speakers referred to the constraints which stood in the way of the introduction and development of nuclear energy in developing countries. Some noted that, on the question of the supply of nuclear material, excessive conditions were, in many cases, imposed. In recent years, it was stated, the sanctity of valid supply agreements and contracts had, on occasion, been unilaterally disregarded, even though those agreements had required the application of the IAEA safeguards system. Several speakers stressed the importance of a more assured supply system of nuclear material, on a long term and timely basis. In that regard, it was stated that the IAEA and the supplier countries should devise more effective ways of dealing with assurances of supply on a predictable and long-term basis. On the other hand, some delegations stated that strong non-proliferation conditions were the basis for all peaceful nuclear co-operation, and not a constraint. In their view, in the absence of a universal non-proliferation regime, bilateral arrangements were essential to ensure that the supply of nuclear technology and material was exclusively for peaceful purposes. The view was expressed that while appropriate and effective international arrangements on assurances of non-proliferation are necessary, they should not stand in the way of the economic activities of the countries concerned or of international co-operation.

77. Several speakers noted that another most important constraint which hampered the development of nuclear energy in developing countries was the problem of financing. The question of financing, it was stressed, must be seriously considered and a formula found to facilitate the acquisition of nuclear plants. In that vein, it was suggested by several developing countries that the international financial institutions, such as the World Bank and regional development banks, should include the nuclear power option

in their countries' energy assessments and should make provision for long-term loans on easy terms for nuclear power plants in their energy financing programmes. That concept was currently of special significance, it was stated, since the serious economic situation facing many developing countries, including a decline in foreign exchange earnings and an increasing debt burden, weakened their ability to develop nuclear programmes.

78. Further impediments faced by developing countries were noted by a number of speakers. Several speakers stated that developing countries frequently experienced problems associated with access to the technology and know-how required to develop peaceful uses of nuclear energy. The insufficiency of skilled manpower was identified as another problem, as were the lack of facilities and of support for research and development. Also emphasized were infrastructural constraints. In general, it was pointed out, constraints were manifold and embraced difficulties of an economic, financial, technological and political order.

79. It was generally agreed that the IAEA should continue to play its central role among multinational institutions in promoting international co-operation in the peaceful uses of nuclear energy, and appreciation was voiced for the assistance the Agency had provided, particularly through its technical assistance programmes, throughout its 30 years of existence. It was generally felt that the role of the IAEA should be reinforced, especially with respect to co-operation and information exchange for developing countries. A number of speakers welcomed the emphasis the Agency was now placing on safety concerns. Many thought the Agency's safeguards system should be strengthened. However, the view was expressed that a greater part of the IAEA's resources should be used for technical co-operation.

80. Several speakers proposed that the Agency's future attention should include the questions of international safety standards, liability for transboundary effects of a nuclear accident, and an internationally acceptable mechanism covering all treatment and disposal of spent fuel. Some speakers from developing countries expressed particular interest in having the Agency assist in the development of small and medium-size power reactor (SMPR) projects.

81. It was generally felt that the IAEA should have the principal role in taking appropriate action with respect to any decisions and recommendations resulting from the Conference. Most speakers expected that the Agency, in collaboration with the other relevant organizations of the United Nations system, could report on its implementation measures at regular intervals to the United Nations General Assembly. Those speakers did not see a need to create any new permanent mechanism or machinery to promote international co-operation in the peaceful uses of nuclear energy. A view was, however, expressed that a follow-up Conference should be held in a few years to review progress made and assess future co-operation issues. Several others did not see the need for such a Conference.

82. Several speakers hoped that one of the effects of the Conference would be to stimulate the IAEA and, in particular, its Committee on Assurances of Supply (CAS) to complete its work expeditiously. Some speakers saw an important aspect resulting from the Conference to be an expansion of public awareness of the positive and useful benefits of nuclear technologies. Some felt that lack of knowledge of those benefits constituted a constraint to the

peaceful uses of the atom. Still others felt that the Conference should lead to a more flexible and realistic attitude by all countries, both suppliers and recipients, regarding the principles and ways and means guiding international co-operation in that area.

83. Among other issues which were raised in the general debate, several speakers recalled the development of South Africa's nuclear programme for military purposes and the destabilizing effect that its possession of nuclear weapons could have not only for Africa but for the entire international community. Some speakers demanded, therefore, that South Africa should place all its nuclear activities under IAEA safeguards.

84. Some speakers expressed concern about the nuclear capability of Israel and demanded that any co-operation should be suspended that would contribute to its nuclear programme.

85. Some speakers called for an international convention to prohibit armed attacks on nuclear installations and for the prevention of nuclear terrorism.

86. Various principles and ways and means of international co-operation - especially with a view to assisting developing countries - were recommended during the debate. There was general agreement that a positive and forward-looking attitude on the part of all countries was necessary to promote co-operative activities in the peaceful uses of nuclear energy for economic and social development.

V. REPORTS OF THE MAIN COMMITTEES: REPORT OF COMMITTEE I

A. Introduction

87. The Conference, at its 1st plenary meeting, on 23 March 1987, established two Main Committees and allocated to Committee I item 5 of the agenda as follows:

> Principles universally acceptable for international co-operation in the peaceful uses of nuclear energy and appropriate ways and means for the promotion of such co-operation, as envisaged in General Assembly resolution 32/50, and in accordance with mutually acceptable considerations of non-proliferation.

88. The Conference, at its 1st plenary meeting, elected Francisco Cuevas Cancino (Mexico) Chairman of Committee I.

89. Committee I met from 24 March to 7 April 1987 and held 16 meetings.

90. The Committee elected the following other officers:

Vice-Chairmen: Ottó Lendvai (Hungary)
Abdullah Al Munayes (Kuwait)
John Robert Kelso (Australia)

Rapporteur: Nabil Fahmy (Egypt).

91. The Committee undertook its work, taking into account the parameters set forth in document A/CONF.108/WP.3 of 13 January 1987.

92. The Committee had before it for its consideration the documents indicated by three asterisks listed in annex II.

93. The Committee at its 9th meeting, on 30 March, decided to establish a Working Group of the Whole to consider the texts contained in the Chairman's papers (A/CONF.108/C.1/CRP.1 and CRP.2). The Working Group held six meetings.

94. The Committee adopted its report at its 16th meeting, on 7 April 1987.

B. Substantive consideration

95. In its discussion on principles, Committee I took document A/CONF.108/L.4 as the basis for its deliberations and considered all the proposals and documents discussed or submitted by the Preparatory Committee relevant to those matters as well as other proposals and documents presented at the Conference, as it deemed appropriate, in accordance with the rules of procedure.

96. The Committee also considered document A/CONF.108/WP.2 on proposed possible recommendations on appropriate ways and means for the promotion of international co-operation in the peaceful uses of nuclear energy and proposals presented by States or groups of States on that matter.

97. The Committee considered:

(a) Measures required to promote international co-operation in the peaceful uses of nuclear energy, and the central role that the IAEA should play in that regard, in line with its Statute;
(b) Role of the specialized agencies and other relevant organizations of the United Nations system in promoting international co-operation, and recommended actions;
(c) Actions for bilateral, multilateral, regional and interregional co-operation for exchange of information and technology in the peaceful uses of nuclear energy.

98. The Committee did not have the opportunity to consider the following:

(a) Assessment of potential demand for nuclear energy in the next few decades and as introduction to the actions recommended to meet this demand, especially in the developing countries;
(b) Actions for co-operation among developing countries (south-south co-operation, non-aligned movement etc.) for contributing to the attainment of resolution 32/50.

99. The Committee received the recommendations suggested by some States during the work of Committee II, as transmitted by Committee II to Committee I in document A/CONF.108/C.2/L.2/Add.3 (annex IV, present report). Without having had the opportunity to discuss them, the Committee referred them to the Plenary.

100. The Committee attempted to reach agreement on principles universally acceptable for international co-operation in the peaceful uses of nuclear energy and on appropriate ways and means for the promotion of such co-operation, as envisaged in General Assembly resolution 32/50, and in accordance with mutually acceptable considerations of non-proliferation. During the discussions, differences of views on those subjects became evident, some divergent proposals were put forward, and no agreement was reached.

101. The texts of the main proposals on principles and on ways and means are set out below as:
1. Texts of proposals on principles;
2. Texts of proposals on ways and means.
The two sets of proposals are between square brackets, which means that no agreement on them was reached.

[1. Texts of proposals on principles

- [Recognizing that international co-operation in the peaceful uses of nuclear energy and non-proliferation of nuclear weapons are inter-related and interdependent objectives, the following principles which are formulated to guide the relationship between States in this field should therefore be read in that context.]

- [Recognizing that international co-operation in the peaceful uses of nuclear energy and non-proliferation are inter-related and interdependent, the following principles which are formulated to guide the relationship between States should therefore be read as an indivisible whole.]

- [States which have obligations arising from their commitments to treaties such as Tlatelolco, the NPT and the Treaty of Rarotonga or similar instruments, understood the term non-proliferation in accordance with those treaties.]

1. [All States have the responsibility to co-operate in the economic, social, cultural, scientific and technological fields for the promotion of economic and social progress throughout the world, especially that of developing countries.]

2. [Every State has the right to benefit from advances and developments in science and technology for the acceleration of its economic and social development.]

3. [All States should promote international scientific and technological co-operation and the transfer of technology, with proper regard for all legitimate interests including, inter alia, the rights and duties of holders, suppliers and recipients of technology. In particular, all States should facilitate the access of developing countries to the achievements of modern science and technology, the transfer of technology and the creation of indigenous technology for the benefit of the developing countries in forms and in accordance with procedures which are suited to their economies and their needs.]

4. [All States have the sovereign and inalienable right to choose, apply, develop and pursue their programmes for peaceful uses of nuclear energy for economic and social development in conformity with their needs, interests and priorities.]

5. [International peaceful nuclear cooperation should be based upon and should reinforce States' comprehensive internationally binding commitments to the non-proliferation of nuclear weapons or nuclear explosive devices. The best way to make such commitments is via adherence to the Treaty on the Non-Proliferation of Nuclear Weapons.]

6. [All States have the right of full access to the worldwide achievements in science and technology for the peaceful uses of nuclear energy] [with proper regard for all legitimate interests, inter alia, the rights and duties of holders, suppliers and recipients of technology.]

7. [All States have the duty to ensure that they do not, in their international trade and co-operation in the peaceful uses of nuclear energy, undermine international or regional peace and security by contributing to the further proliferation of nuclear weapons and other nuclear explosive devices.]

8. [All nuclear-weapon States have the duty not to transfer to non-nuclear-weapon States the technology for the explosive use of nuclear energy.]

9. In their use of nuclear energy to promote their economic and social development, all States have the sovereign right [on a non-discriminatory basis] [to choose a fuel cycle] in conformity with their national priorities, interests and needs. [Fuel cycle policies should be transparent in a way so as not to undermine confidence in the declared intent to use nuclear energy exclusively for peaceful purposes.]

10. [All States have the sovereign and inalienable right to choose their own role in international nuclear trade and co-operation.]

11. [All States [without discrimination,] should have [access] to and should be free to [acquire] technology, equipment and materials for the peaceful uses of nuclear energy.]

12. [All supplier States shall favourably consider and,[if economically acceptable,] try to meet the requirements of recipient States in acquiring nuclear technology, equipment, materials and services, [provided that relevant international safeguards are applied to ensure nuclear non-proliferation.]

13. States co-operating to promote the peaceful uses of nuclear energy should promote [relevant] international scientific and technological co-operation, including the sharing of [appropriate] technology, with proper regard for affected parties, including holders, suppliers and recipients. Among the goals of international co-operation in the peaceful uses of nuclear energy should be to facilitate the fullest possible access of developing countries to nuclear science and technology [appropriate] to those countries' economic, social and technical needs and development, [to the needs of other potentially affected States,] and to the greatest possible general benefits of such access for worldwide peace, health, safety and prosperity.

14. [Nuclear supplies - i.e., supplies of nuclear material, equipment and technology and fuel cycle services - [and international nuclear trade] in general should be assured on a long-term, [international basis that is widely acceptable and in a non-discriminatory,] predictable, consistent [and ultimately uniform] manner.]

15. In accordance with international law and applicable treaty obligations, States should [as much as possible] fulfill their obligations under agreements in the nuclear field and any modification of such agreements, if required, should be made only by mutual consent of the parties, through revision mechanisms previously agreed by the parties. [Supplies as per agreements should continue uninterruptedly during consultations and negotiations on modifications and amendments of such agreements.]

16. [Proliferation of nuclear weapons is a matter of universal concern. The goal of nuclear non-proliferation as an integral part of the effort to halt and reverse the arms race is to prevent the proliferation of nuclear weapons and to reduce and eventually eliminate nuclear weapons altogether.]

17. [Non-proliferation of nuclear weapons is a matter of universal concern. Vertical and horizontal proliferation of nuclear weapons is considered as the main constraint in the creation of a spirit of international co-operation. The effort to halt and reverse the arms race, to prevent further proliferation of nuclear weapons and its eventual elimination, would facilitate the promotion of international co-operation in peaceful uses of nuclear energy.]

18. [Preventing the diversion of nuclear materials, equipment and technology from peaceful non-explosive purposes is fundamental to an environment in which States can enjoy the benefits of the peaceful uses of nuclear energy.]

19. [The exercising of the right to develop nuclear energy for peaceful purposes should be based on an internationally legally binding commitment to the non-proliferation of nuclear weapons and other nuclear explosive devices verified by fullscope IAEA safeguards, where appropriate, as provided for in the Treaty on the Non-Proliferation of Nuclear Weapons and the Treaty of Rarotonga.]

20.* - [Non-proliferation constitutes a common goal and a subject of universal concern. Once it can be assured that appropriate measures, in particular the application of international safeguards, verified through the International Atomic Energy Agency safeguards have been taken, non-proliferation should not block co-operation for promotion of the peaceful uses of nuclear energy.]

- [International co-operation in the peaceful uses of nuclear energy should be under a comprehensive internationally binding commitment to non-proliferation of nuclear weapons and other nuclear explosives, applicable to all States, and verifiable through the IAEA safeguards. Such non-proliferation commitments should not prejudice the rights of any States to apply and develop their programmes for the peaceful uses of nuclear energy for economic and social development in conformity with their needs, interests and priorities.]

- [Non-proliferation measures constitute an essential prerequisite for the full exercise of the inalienable rights of all States to apply and develop their programmes for the peaceful uses of nuclear energy for economic and social development in conformity with their priorities, interests and needs. International peaceful nuclear co-operation should be based on an internationally binding commitment to non-proliferation of nuclear explosives, preferably via adherence to the NPT, and verified by international safeguards applied through the IAEA.]

- [Access to technology, equipment and materials for peaceful uses of nuclear energy, taking into account the particular needs of the developing countries should be promoted. International peaceful nuclear co-operation should be based on an internationally binding commitment to non-proliferation of nuclear explosives, preferably via adherence to the NPT, and verified by international safeguards applied through the IAEA.]

21. [International co-operation in the field of the peaceful uses of nuclear energy should be under agreed and appropriate international safeguards applied through the IAEA on a non-discriminatory basis in order to prevent effectively proliferation of nuclear weapons.]

22. [The full implementation of all non-proliferation provisions contained in international instruments in force to which the States are parties should facilitate and strengthen international co-operation in the peaceful uses of nuclear energy.]

23. [A States's nuclear co-operation, trade and supply should both promote economic and social development through the peaceful uses of nuclear energy and support the international non-proliferation régime.]

24. [The interests of all States in stable international nuclear [trade and] co-operation will be enhanced by the fulfillment of [a common basic objective of non-proliferation.] The development, acquisition and use of nuclear energy for peaceful purposes [and international nuclear trade] should be conducted accordingly.]

25.* - [Non-proliferation assurances [for nuclear supply assurances] should be based on a State's commitment to non-proliferation verified by the application of IAEA safeguards, where relevant. Each State has the sovereign right to decide how such a commitment should be made.]

- [Non-proliferation assurances [for nuclear supply assurances] should be based on a State's commitment, internationally binding, to non-proliferation verified by the application of IAEA safeguards. Each State has the sovereign right to decide how such a commitment should be made.]

26. [A comprehensive, legally binding international commitment to the non-proliferation of nuclear weapons and other nuclear explosive devices, expressed preferably via ratification of the NPT, and the verification of that commitment by the application of full-scope safeguards by the IAEA are prerequisites for nuclear co-operation.]

27. [Assurances of supply and assurances of non-proliferation are complementary, interdependent and essential for international co-operation in the peaceful utilization of nuclear energy.]

28.* - [Co-operation in the promotion of the peaceful uses of nuclear energy should [must] be based on the recognition by all States that access to the benefits of peaceful nuclear energy is accompanied by the responsibility to use that peaceful nuclear energy [only] for purposes consistent with the purposes and principles of the United Nations and the agreed purposes of the co-operative effort.]

- [International co-operation should be extended exclusively for the use of nuclear energy for peaceful purposes which includes peaceful nuclear explosive devices. Each State can reserve the right, in case it considers that nuclear explosive devices do not constitute a peaceful use of nuclear energy, not to supply equipment and materials which could be used for conducting nuclear explosives.]

29.(i) [Atomic energy shall be used exclusively for peace, health and prosperity throughout the world.]

(ii) [The nuclear arms race is to be halted and reversed and nuclear weapons should be completely eliminated.]

(iii) [International co-operation should be devoted only to the peaceful uses of nuclear energy.]

30.(i) [States exporting nuclear equipment and technology or otherwise engaged in international co-operation in the field of the peaceful uses of nuclear energy have the responsibility to enable their counterparts in such co-operation to ensure the safe operation of equipment and technology supplied on the same level of nuclear and radiation safety and environmental compatibility that would apply to themselves.]

(ii) The IAEA is recognized as the principal intergovernmental organization within the UN system responsible for promotion of worldwide co-operation in the peaceful uses of nuclear energy, [including the transfer of nuclear technology and the implementation of safeguards.]

31.(i) [Sharing of relevant information on nuclear safety for supplied facilities on a continuing, regular and assured basis between the supplier and recipient is a special responsibility of the supplier.]

(ii) [The supplier States shall ensure an uninterrupted supply of relevant information on nuclear safety to the recipient States during the entire operational life of the nuclear facilities supplied by them.]

32.(i) [All States [have the responsibility to] [should continue to] ensure that [the use of nuclear energy for peaceful purposes is subject to [very strict] [the highest possible] safety standards,] in order to [minimize] risks [to life and health and to the environment] [of nuclear accidents].]

(ii) [All States applying, developing and pursuing programmes for [peaceful] uses of nuclear energy [should] have the responsibility to take into account the legitimate interests of other countries that could be affected by transboundary effects of the use of nuclear energy.]

(iii) [All States applying, developing and pursuing programmes for the peaceful uses of nuclear energy should [participate in] [be encouraged to adhere to] [participate in appropriate] international endeavours [through, e.g., the IAEA] to elaborate criteria and standards as a basis for [appropriate] [international] arrangements regarding liability for damages arising from the transboundary effects of nuclear installations, [especially via adhering to the existing Conventions on civil liability], [including the Convention on Early Notification of a Nuclear Accident and the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency, both of 1986].]

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* All elements contained in these paragraphs are of the same status.

[2. Texts of proposals on the ways and means

(a) Measures required to promote international co-operation in the peaceful uses of nuclear energy, and the central role the IAEA should play in this regard, in line with its Statute

1. A comprehensive assessment of a country's existing energy and economic situation, a detailed analysis and plan for future energy needs, could be facilitated through international co-operation; to this end the IAEA programmes for developing energy planning systems, and training in their utilization, as an important contribution to such co-operation in this field, should be encouraged and supported.

2.* - [Considering the important role that the World Bank and regional banks could play in the development of nuclear energy for electricity generation and other applications, in developing countries, these banks, where appropriate, should include the nuclear power option, [and other applications of nuclear energy,] [in their country energy assessments] and make provisions for long-term loans, [on easy terms] [on as easy terms as possible], for the peaceful uses of nuclear energy for economic and social development.]

- [Considering the important role that the World Bank and regional banks could play in the development of energy resources in developing countries, these banks, where appropriate, might include the nuclear power option in their country energy assessments.]

3. [Technical support, especially through the IAEA, should continue to be provided and appropriately promoted to assist in the development of indigenous capabilities for the assessment and planning and in the design, construction, installation, operation, safety and maintenance of peaceful nuclear power programmes [and their related facilities].]

4. [International financial support should also continue to be provided and appropriately promoted to develop indigenous capabilities in assessment and planning and in the design, construction, installation, operation, safety and maintenance of peaceful nuclear power programmes [and their related facilities].]

5.* - In light of the increasing interest of developing countries in nuclear applications, the World Bank, regional banks and other financial institutions should consider the provision of financial support, [where appropriate] [on as easy terms as possible,] [for the development of national and regional centres] for the application of nuclear techniques and training programmes.

- [Technical support, especially through the IAEA should continue to be provided, [with appropriate increases] [appropriately provided], in these areas.]

6. [Especially under IAEA auspices, international efforts [including convening of expert groups] [through appropriate means] are recommended in order to formulate recommendations to reduce construction time and capital cost of nuclear power plants while maintaining the highest possible level of safety [and efficiency.]

7. [[Free] exchange of scientific knowledge and technical information in the peaceful uses of nuclear energy should be maintained and further strengthened through all appropriate means of international co-operation.]

8. International co-operation, especially through the IAEA, and also through other appropriate regional and international organizations, should be encouraged and supported to assist the design, production and maintenance, on a regional basis, of basic measuring equipment, including the establishment of appropriate standards, as a means to facilitate the promotion and co-ordination of nuclear activities relating to applications in biological sciences, medicine and food and agriculture.

9. The IAEA should reinforce the existing, and facilitate the setting up of new, national and regional capabilities for the production and distribution of radioisotopes, required in various peaceful uses of nuclear energy techniques.

10. [Development of small and medium size power reactors suitable especially to the needs of developing countries should be supported through international co-operation and other appropriate means.]

11. [Further international studies should be undertaken to explore the feasibility of intercountry grid integration and its impact on the introduction and use of nuclear energy.]

12. Further international co-operation especially through the IAEA, in finding solutions to problems associated with transport, the long-term storage and final disposal of radioactive waste is needed. [In this respect, an international mechanism, preferably through the IAEA, to monitor dumping of nuclear waste at sea could play an essential role.] [Further international co-operation, especially through the IAEA, in finding solutions to the problems related to the [safe] transport of nuclear materials should be promoted.]

13. The IAEA and other international organizations should continue to provide independent and objective information on nuclear energy and technology, thus assisting Governments to enhance the awareness, especially on nuclear safety and radiological protection.

14. Each State should have appropriate mechanisms to ensure that [international support and assistance programmes] are effectively implemented for its economic and social development in order to benefit fully from the international co-operation in the peaceful uses of nuclear energy.

15. International efforts under the auspices of the IAEA should continue with a view to ensuring the highest standards of nuclear safety and radiological protection in the development of nuclear energy and applications of radiation and radioisotopes in different fields such as biology, medicine, food and agriculture, industry and environmental protection. [Efforts should be made for the implementation of the recommendations of the Special Session of the General Conference of the IAEA for the promotion of international co-operation in nuclear safety.]

16. The work of the IAEA through the Senior Experts Group on Mechanisms to Assist Developing Countries in the Promotion and Financing of Nuclear Power Programmes should be brought to a successful conclusion as an important contribution to enhance international co-operation in this field.

17. The Conference welcomes the Conventions on Early Notification of a Nuclear Accident and on Assistance in the Case of a Nuclear Accident or Radiological Emergency. [Further work should be carried out by the IAEA,other specialized agencies, as well as by the States Parties to the Conventions, to achieve the objectives of these Conventions, [on the understanding that such Conventions constitute necessarily the beginning of a fuller and more complete process in this matter.]

18. [International efforts should be made for the physical protection of any nuclear materials from unauthorized removal, sabotage and terrorist access. In this respect, the Conference notes the entry into force of the Convention on the Physical Protection of Nuclear Material.]

19. - [To help provide a climate for international peaceful nuclear co-operation, disarmament negotiations should be intensified with a view to concluding agreements to halt and reverse the nuclear arms race, and to prevent an arms race in outer space. Parts of the financial material and technological resources released by the cessation of all nuclear-weapon tests and the reduction of nuclear weapons could be used to extend the application of nuclear energy for peaceful purposes, inter alia, in developing countries.]

- [To further this purpose, studies on the effects of a comprehensive nuclear weapon test ban, on the reduction of nuclear weapon stockpiles until their complete elimination, and on improving the conditions for the extension of nuclear power production, including increasing assistance to developing countries by part of the resources released, should be conducted.]

20. Further support for the IAEA technical assistance and co-operation programme should be provided [on a predictable, assured and sufficiency basis], including those areas covered through extra-budgetary contributions.

21. The Conference [recognizes the importance of the work] [recognizes with regret the lack of success] of the Committee on the Assurances of Supply, including its outcome on emergency and back-up mechanism [and a revision mechanism], and recommends further efforts of the Committee in order to promote international co-operation in this field.

22. [Adherence to the NPT and adherence to regional agreements such as the Treaty of Tlatelolco and the Treaty of Rarotonga by States eligible to be Parties to these Treaties, would greatly facilitate international co-operation in the peaceful uses of nuclear energy.] [Efforts to create nuclear-weapon-free zones in other regions should be encouraged.]

23. [International co-operation would be fundamentally strengthened by the continued pursuit of the principles of universal application of the IAEA safeguards to all [peaceful] nuclear activities in all States.]

24.(i) [The Conference recommends that international organizations, particularly the IAEA and WHO, strengthen their promotional activities in the field of nuclear medicine and treatment of people exposed to radiation.] The Conference appeals to countries which have experience in nuclear medicine to

pursue and intensify their co-operation with interested States, particularly with the developing countries, so as to develop all the useful information and knowledge in this field.

(ii) [The Conference acknowledges the important work performed by the International Centre for Theoretical Physics in Trieste. Larger involvement and technical support should be assured to the Centre, in particular by scientifically and technologically developed countries. An enlargement of the present network of agreements between the Centre and national laboratories and centres devoted to research in physics, including the use of nuclear energy for peaceful purposes, should be encouraged.]

(iii) The IAEA should consider ways to encourage scientists from the developing countries [rewards and prizes] to continue research in their countries.

(b) Role of the specialized agencies and other relevant organizations of the United Nations system in promoting international co-operation, and recommended actions

25. ESCAP, ECA, ESCWA, ECLAC, in collaboration with the international organizations concerned, such as UNDP, UNIDO, UNESCO, FAO, WHO, IAEA and relevant financial institutions, should assist in mobilizing financial and technical resources as well as in supporting national programmes required to meet the needs of developing countries in this field.

26. International and regional agencies including IAEA, UNIDO, UNDP, FAO and WHO should intensify their own efforts to achieve greater co-ordination of technical co-operation programmes.

27. International, interregional, and bilateral support should continue to be provided to enhance industrial and institutional infrastructure for the introduction of nuclear energy. The possible contribution to that objective of joint efforts of countries within a region should be studied and, where appropriate, assisted.

28. [Efforts should be made by the concerned international [organizations] to work out as early as possible international measures, including an agreement, to prevent any armed or terrorist attacks against all nuclear installations.]

(c) Actions for bilateral, multilateral, regional and interregional co-operation for exchange of information and technology in the peaceful uses of nuclear energy

29. Continued international support, both financial and technical, should be provided to national, regional and interregional centres to facilitate the appropriate transfer of technology in these fields.

30. Neighbouring countries or countries of a region are encouraged to elaborate agreements or other appropriate arrangements for questions of common interest related to nuclear installations.

31. A reinforcement of international co-operation is also recommended for the establishment of regional and national standardization laboratories for radiation dosimetry and other radiometric equipment.

32. Countries of a region should seek to enhance co-operation and co-ordination amongst their relevant national organizations in this field.

33. The IAEA Regional Co-operative Agreements for Asia and the Pacific and for Latin America, as well as the Nordic Liaison Committee for Atomic Energy, examples of successful regional co-operation in the peaceful uses of nuclear energy, may provide models for co-operative regional arrangements elsewhere.]

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* All the elements contained in these paragraphs are of the same status.

VI. REPORTS OF THE MAIN COMMITTEES: REPORT OF COMMITTEE II

A. Introduction

102. The Conference, at its 1st plenary meeting, on 23 March 1987, established two Main Committees and allocated to Committee II items 6 and 7 of the agenda as follows:

Role of nuclear power for social and economic development (item 6)

Role of other peaceful applications of nuclear energy, such as food and agriculture, health and medicine, hydrology, industry etc., for social and economic development (item 7)

103. The Conference, at its 1st plenary meeting, elected Ilkka Makipentti (Finland) Chairman of Committee II.

104. Committee II met from 24 March to 3 April 1987 and held 18 meetings.

105. The Committee, at its 3rd meeting, elected the following other officers:

Vice Chairmen: Rex Nazaré Alves (Brazil)
M. Ghazali (Malaysia)
K. Przewlocki (Poland)

Rapporteur: Ayodele J. Coker (Nigeria)

106. The Committee adopted the following report at its 18th meeting, on 3 April 1987.

B. Summary of work

107. Committee II heard a total of 103 reports by delegations covering a wide range of subjects relating to nuclear technology and applications. The presentations of the reports were followed by questions to the speakers and discussions of the points raised. Following the presentation of all of the reports, there was general discussion of conclusions and recommendations relating to the agenda items before the Committee. This chapter is a summary of the reports and the discussions in the Committee. Abstracts of reports presented to the Committee are published in a series of documents with the symbols A/CONF.108/C.2/REP./ABSTRACT.1 - 17. A list of the reports presented to the Committee is given in annex III.

108. The Committee agreed that the reports constituted a valuable body of important information on a wide range of topics relating to the peaceful uses of nuclear energy and should be made more widely available. The Committee therefore recommended that the reports be published and suggested that the Conference request the Secretary-General to arrange for such publication.

109. The extensive and active involvement of the IAEA in all fields of nuclear energy co-operation was clearly reflected throughout the presentations and discussions. The discussion also brought up several views and ideas which might give new impetus to the work of the IAEA and lead to a strengthening of its role as the central organization for worldwide nuclear co-operation.

1. Nuclear energy planning

110. Committee II began its work by reviewing the general subject of nuclear energy planning, including its technical, economic and financial aspects. Thirteen reports on this topic were presented to the Committee.

111. Seven reports discussed the energy programmes of individual countries. Four of those reports, from Belgium, France, German Democratic Republic and Spain, reflected the experience of more advanced industrial countries, while three reports, from Brazil, China and Egypt, offered a perspective from developing countries. Two reports discussed regional co-operation in nuclear development, one on co-operation among the Nordic countries and one on co-operation among the member countries of CMEA. Two reports discussed the question of nuclear power financing: one, by France, reviewed the financial constraints which weigh on nuclear development projects in developing countries and gave some ideas for the solutions to those problems, and the other, by Egypt, provided views from a recipient developing country. Finally, two reports by the Federal Republic of Germany discussed computer modeling and analysis related to nuclear energy planning in one developing country, Indonesia.

112. The reports and the discussions on the topic "Nuclear energy planning" produced the following points.

(a) General considerations

113. Several speakers emphasized the importance of integrating nuclear energy planning into overall energy strategies which identify energy requirements and options for meeting those requirements. According to those speakers, evaluation of energy strategies may include, among other things, consideration of the suitability, costs and benefits of all options.

(b) Economic and financial aspects

114. Some speakers indicated that questions concerning financing, in particular international financial support, and the need for the transfer of technology are some of the major questions facing the developing countries.

115. Some speakers indicated that nuclear power projects in many countries, in particular developing countries, have serious problems in financing. Some developing countries have proposed that the World Bank or regional banks finance nuclear power projects through long-term loans on easy terms. Some developed countries often consider such financing questions as falling within the framework of bilateral commercial transactions.

116. One speaker from a developed country suggested that countries seeking financing for nuclear power projects might facilitate such financing by certain actions: (a) creation of a dedicated fund for the domestic portion of the required financing as a demonstration of commitment; (b) have all of the required permits, authorizations, licences etc. for the complete project, since delays in such areas are costly; and (c) ensure that the electricity is sold at a price that covers production costs and allows loan repayments.

117. Some speakers suggested that there is insufficient recognition that financing of a nuclear power plant is not the only expenditure involved in the use of nuclear power. Development of the necessary infrastructure (as a minimum, a regulatory system and operating and maintenance capabilities) is also a considerable expense, as is power distribution. Creating local manufacturing capabilities etc., as a move towards self-reliance, is also an enormous financial burden. At the same time, it was suggested by some speakers from developing countries that self-reliance would help in the long term in overcoming balance-of-payments constraints.

118. With regard to nuclear power financing in developing countries, several speakers mentioned the work of the IAEA Senior Expert Group, which was to report on the subject in May. Another speaker mentioned that the IAEA Senior Expert Group was considering certain suggestions concerning the OECD guidelines on nuclear financing, and that these would warrant careful consideration.

119. Some speakers mentioned the build-operate-transfer (BOT) model as a possible way to deal with financing nuclear power projects in developing countries. A "joint venture utility", with equity participation by the utility and other organizations in the recipient country, and by foreign suppliers and financing institutions, would be responsible for financing, building and operating the nuclear power plant. The model might provide foreign financial institutions with the assurance that the project risks would be minimized, thus facilitating the allocation of loans for nuclear power projects in developing countries.

120. The view was expressed by several speakers that the difficulties in financing some nuclear power projects could be greatly alleviated by improvement in the present conditions of OECD consensus, including, primarily, reduction in interest rates through recovery of the additional 1 per cent for nuclear power projects; longer repayment periods and more flexible grace periods; mixing of soft loans with export credits; use of aid grants in nuclear projects to cover infrastructure training; grid connections and other affiliated services.

(c) Regional and international co-operation

121. Some speakers indicated that much could be gained from regional co-operative efforts, even if the individual goals of the parties were different. However, such arrangements needed clear political backing, an organizational framework and funds for joint projects. It was pointed out that such arrangements could avoid large central bureaucracies, but that continual follow-up was necessary, including adjustment of the programme to take account of the changing goals of the participants.

122. According to some speakers, the experience of many countries, for example the Nordic countries, indicated that research and development efforts were essential to the development of nuclear energy, and that those efforts could be shared. It was noted by some speakers that, to meet this need for developing countries, the IAEA could intensify its role in the exchange and transfer of the necessary technical and scientific information, as well as in promoting and co-ordinating joint research and development projects.

(d) Computer models for energy planning

123. On a more technical level, some speakers suggested that computer modeling of a country's energy situation could provide important assistance in evaluating the role which nuclear energy might play, among other energy sources, in pursuing economic and social development. Energy planning models, such as those developed by the Federal Republic of Germany and the IAEA, were available and could give useful data to developing countries for their energy planning. The WASP computer program for electricity system planning, a version of which could be used on personal computers, had been used in some countries as a basic technique for nuclear power system expansion planning. Those countries could share their experiences with other countries which were not yet using such models, perhaps by way of the IAEA regional co-operation projects.

2. Development and perspectives in the field of nuclear energy production

124. Seventeen reports were presented on the topic "Development and perspectives in the field of nuclear energy production". Fourteen were from developed countries (Belgium, Canada, Czechoslovakia, Finland, France, Germany, Federal Republic of, Spain, USSR and United States), two were from developing countries (Brazil and Iraq), and one was from an intergovernmental organization (the Nuclear Energy Agency of the OECD).

125. Nine reports, from Belgium, Brazil, Canada, Czechoslovakia, France, Germany, Federal Republic of, Iraq, USSR and United States, reported on countries' experience in the development and operation of large nuclear power plants. Two reports, from Canada and USSR, discussed small reactor designs for heat and power. Three reports, from Belgium, Finland and France, discussed the infrastructure required for nuclear power programmes. And three reports, from Canada, France and Spain, discussed uranium mining and nuclear fuel processing.

(a) General considerations

126. Many speakers presented evidence to support the view that nuclear energy was an important and viable alternative source of electric power, that nuclear power plants were safe to operate, that nuclear power generation was competitive with other sources of electricity in their countries, and that it had certain advantages with respect to environmental protection. For many countries, it was stated, the use of nuclear energy was the only economic means of meeting their power needs.

127. A number of speakers noted, however, that some other countries might not see those circumstances as compelling in the light of specific circumstances prevailing in their countries.

128. Some speakers indicated that, in several countries using nuclear energy for electricity generation, operational experience with nuclear power plants indicated that even with relatively low current prices for fossil fuel, nuclear power provided a competitive, safe and reliable means for base-load power generation. The experience of those countries provided evidence that objectives for nuclear power had been met and that nuclear power would remain, for them, for the foreseeable future, a major source of energy.

(b) Reactor design and development

129. Some speakers indicated that adoption of standardized reactor designs and practices could help in reducing construction time and capital cost, thereby contributing to the viability of nuclear power as an economic source of electrical energy. It was further stated that standardization should be pursued in ways that do not inhibit technological innovation.

130. Some speakers indicated that many developing countries would prefer to have small or medium power reactors, due to limitations of their grid capacities and other infrastructural constraints. They indicated that small and medium power reactors might better suit the needs of developing countries in certain respects, such as lower investment, faster construction times, and better fit with small electrical grids. In the view of some other speakers, further work needed to be done to overcome constraints, including high specific investment costs, compared to other energy facilities and the need for more operating experience. The view was expressed by one speaker that a successful new-generation small light water reactor would require substantial redesign, not merely a scaling down of larger plant designs. Some speakers noted that some countries had made considerable progress in the design of small and medium power reactors.

131. Two speakers indicated that small or medium sized reactors might find a useful role in combined electricity and district or process heat supply, particularly in remote or difficult-to-reach areas.

(c) Infrastructure for support of nuclear energy

132. Some of the speakers expressed the view that, for taking up a nuclear power programme, an adequate infrastructure was required, with the following elements considered especially important: adequate electrical grid size and integration, to be compatible with reactor unit size; suitable personnel, periodically retrained, preferably using simulators and computers; industrial infrastructure; a national supervisory/regulatory body to provide supervision from the outset of the project; a research and development capability, particularly in the areas of safety, operation and, if appropriate, fuel cycle; and facilities for training of personnel on a continuing basis, such as research and training reactors or on-the-job training.

133. In the discussions, some speakers indicated that, for the long-term development of nuclear energy in developing countries, effective participation of local industries was essential. This was particularly important for resolving day-to-day operational and maintenance problems. Furthermore, such participation could provide a technical base and infrastructure for the safe operation of nuclear power plants and at the same time help in overcoming the

constraint of balance of payments faced by developing countries. Certain speakers indicated that international co-operation for the transfer of technology would be beneficial to both developing and developed countries.

134. Some speakers indicated that there would be potential benefits from the interconnection of electrical grids between neighbouring countries. These potential benefits might include making nuclear power plants of specific sizes economically and technically feasible, eliminating certain constraints in siting, and reducing the optimum level of reserve capacity and therefore optimising capital investment.

3. Development and perspectives of other applications of nuclear energy

135. On the topic "Development and perspectives of other applications of nuclear energy", 29 reports were presented to the Committee relating to applications of nuclear techniques in the fields of scientific research, food processing, agriculture, medicine, hydrology and industry.

136. Twelve reports, from Belgium, Brazil, Canada, China, Egypt, Finland, German Democratic Republic, Hungary, Japan, Poland, Spain and USSR, described national programmes covering multiple applications of nuclear energy. Three reports, from Czechoslovakia, German Democratic Republic and Germany, Federal Republic of, discussed radioisotope production and dosimetry, one reporting a joint project with the IAEA. Three reports, from Netherlands, Spain and United States, discussed the use of nuclear reactors for scientific research and other applications. Three reports, from France, USSR and United States, presented results of nuclear techniques in medicine. Five reports, from France, Italy, Netherlands, Ukrainian SSR and United States, covered applications in the field of food and agriculture. And three reports, from Germany, Federal Republic of, Poland and USSR, described nuclear applications in industry, geology and hydrology.

(a) General considerations

137. Several speakers indicated that most countries had on-going programmes for the use of nuclear energy in applications such as the use of isotopes and radiation in agriculture, industry, health and medicine, and hydrology. The level and content of the programmes varied in different countries, but it appeared that the uses of nuclear energy for such applications had made and could continue to make a great impact on the social and economic development of mankind.

138. A number of speakers indicated that nuclear methods and technologies had been developed and were ready to be implemented in developing countries. The important role of the FAO/IAEA Joint Division in providing assistance and advice in the use of nuclear techniques in agriculture was noted.

139. Speakers from many countries expressed their belief that non-power applications could play an important role in economic and social progress. Some speakers noted in discussion a need for greater international co-operation in the use of nuclear energy for applications such as the use of isotopes and radiation in agriculture, industry, health and medicine, and hydrology. Some speakers from developing countries indicated that they had

been facing difficulties in procuring and maintaining the latest equipment and in training personnel for effective application of the various techniques now being developed. It was noted that the IAEA was playing an important role in the transfer of those technologies to developing countries. Several speakers indicated that those activities should be expanded.

140. It was noted by some speakers that those technologies had wide application, were easily adaptable, required relatively little capital, offered fast results, and could play an important role in a country's economic and social progress. In that context, one speaker stressed the importance of the quantitative evaluation of those effects.

141. A number of speakers noted substantial progress in the use of radioisotopes and nuclear radiation. Many countries were drawing great economic benefits from the use of isotopes and radiation as well as of accelerator technology in the chemical, metallurgical, engineering, cable production, textile and other industries. There had also been great successes in the development of nuclear medicine, radioisotope diagnosis and radiation therapy. Nuclear physics methods for elemental analysis of substances were not only widely used in laboratory research, but had also become industrial techniques.

142. Some speakers indicated a number of prospective trends for the near future that would find wide application in practice, including: the use of ionizing radiation for the preservation of foodstuffs and raw materials; increasingly wider use in agriculture of radiogenic methods for producing new varieties and types and for combating harmful insects and micro-organisms; and an increasing development in nuclear medicine of positron tomography, which was becoming a powerful means of early diagnosis of serious human diseases.

(b) Research and development

143. According to some speakers, over three decades of experience with the design and construction of research reactors in many countries demonstrated that small research reactors could also catalyze a broad range of technology transfer to developing countries. It was also noted by some speakers that nuclear research and development programmes could be implemented independently of the need for nuclear power. They could contribute to personnel training as well as leading toward nuclear power development.

144. It was noted that research reactors could serve an important role in training personnel in different areas of science and technology and provide a base for other peaceful uses of nuclear energy.

(c) Health and medicine

145. Several speakers noted that production of radioisotopes and radio-pharmaceuticals from research reactors could be an important application of nuclear energy in many countries, including countries where no programme of nuclear power had been started. International co-operation, in particular through the IAEA, had proved useful for establishing local and regional production of the most important isotopes for routine clinical and industrial use. Some speakers also mentioned that countries with no facilities for producing radioisotopes could have reasonable programmes for applications of radioisotopes in various fields by importing them.

146. Some speakers noted that radiation sterilization of medical products was widely used both in developed and developing countries.

147. Several speakers indicated that newly-emerging technologies in the field of nuclear medicine promised continued progress in diagnostic and therapeutic techniques. International co-operation in that field would be necessary in order to enable all States to realize the fullest potential of those techniques.

148. According to some speakers, a new focus of nuclear medicine was positron emission tomography (PET), which provided quantitative imaging of physiological and biochemical processes in living persons, with superior chemical and physical characteristics. Biomedical advances and new knowledge gained initially through PET studies could be extended to less complex approaches, including use of non-imaging positron probe systems and single photon emission computed tomography (SPECT) using more conventional nuclear medicine radiopharmaceuticals.

(d) Food, agriculture and hydrology

149. According to a number of speakers, radiation technology was safe and widely accepted for many applications. The technology had the potential for making immediate significant contributions in the solution of critical world food problems.

150. In the area of mutation breeding, several speakers reported that new mutant varieties had been obtained and released to farmers. These included new varieties of rice, wheat, legumes, fruits and vegetables. China, for example, reported that 190 mutant varieties had been released and used in 8 million hectares.

151. On the subject of food irradiation, nine speakers discussed activities in individual countries and presented lists of irradiated commodities currently accepted for human consumption. For potatoes, garlic, onions, spices and other commodities, a number of countries had adopted unconditional marketing. The WHO/FAO Codex Alimentarius Commission in 1983 had adopted a "Codex General Standard for Irradiated Food" and a code of practice, which concluded that food irradiated up to 10 kGy was unconditionally wholesome for human consumption without further toxicological testing. Several speakers advocated that the Codex General Standard play an important role in national decision-making.

152. Several speakers indicated that formulation of food irradiation regulations and public acceptance of the technology were matters being considered in a number of countries. Delegates were invited to use their own national resources critically to review the scientific and technical data in this important field, which might lead to international guidelines to serve as a basis for international trade requirements.

153. A number of speakers described the application of the Sterile Insect Technique (SIT) for controlling insect pests. Japan and Italy presented specific examples of eradication of fruit flies from large areas. The technique was also being applied in some African countries to control the tsetse fly. A number of other speakers discussed their countries' plans to implement this technology. Other useful applications of nuclear techniques in studies of soil fertility, plant nutrition and animal production were described.

154. It was noted that good progress had been achieved in the application of tracer techniques in soil science, fertilizer utilization programmes, irrigation studies and hydrology.

(e) Industry

155. The view was expressed that radiation and isotope technology was highly useful for the modernization of industries and had brought about social and economic benefits. Radiation processing was increasingly used in industries to produce new and high quality products and to provide energy-saving processes.

156. It was noted that isotope gauges were widely used for process control in industrial plants, and the use of non-destructive testing by radiography was expanding worldwide. Radiometric gauging and radiotracer technology in industrial process control and optimization had reached a high standard. The benefit-cost ratio in some cases might reach a value of 10:1.

4. Nuclear safety and radiological protection

157. Fifteen reports on nuclear safety and radiological protection were presented to the Committee by eight countries, including eight reports on safety of nuclear installations (from Austria, Byelorussian Soviet Socialist Republic, Canada, France, Germany, Federal Republic of, Spain and Sweden), six reports on radiological protection (from Austria, Belgium, Brazil, Spain, Sweden and United States), and one report on emergency planning (from Denmark).

(a) Safety of nuclear installations

158. A number of speakers indicated that safety was continuously being studied and safety systems and practices were continuously being upgraded, on the basis of design analysis, risk analysis and operating experience. International co-operation and worldwide exchange of information had an important contribution to make to that process.

159. One speaker noted that a nuclear incident anywhere in the world had the potential for global repercussions. In addition to the health and environmental effects, such incidents could have an impact on the nuclear power programmes of some other countries.

160. Some speakers noted that an important factor for the safe operation of nuclear reactors was the input from safety research, which required highly trained personnel and specialized equipment. Many countries and international organizations were conducting safety studies which were of common interest. Sharing of safety research data could go a long way to ensuring safe operation of nuclear power plants and in improving the level of safety. International co-operation in that area was essential.

161. One speaker described how a country with no nuclear power plants could develop a nuclear safety programme and contribute to international co-operation in nuclear safety. Reference was made to the international co-operative safety programmes of the IAEA and the OECD/NEA.

162. Some speakers noted that the minimization of collective and cumulative radiological exposure of the general population, to which medical diagnostic radiation made a large contribution, was the responsibility of each country. That responsibility could be substantially supported by the IAEA/WHO network of Secondary Standards Dosimetry Laboratories (SSDLs). That network was a good example of international co-operation.

163. One speaker noted that strong and active utility management was essential for effective nuclear safety programmes. In that regard, some speakers emphasized the need for continuous interaction between utility management and regulatory authorities. Management authority, responsibility and accountability focused on competent performance were critical factors in attaining safety and operational excellence.

164. One speaker emphasized that in operating nuclear power plants, the key people were the plant operators. Those people must have the necessary skills and training to perform their functions. One effective way to improve those skills was through regular retraining, ideally including simulator training, and the use of information on incidents and accidents associated with operating plants. An additional vital aspect of training was that countries operating power reactors shared information on incidents and accidents.

(b) Radiological protection

165. One speaker noted that health risk assessment was the process of characterizing and quantifying potential adverse health effects that might result from exposures to physical and chemical agents in the environment. Some speakers noted that many countries utilizing nuclear energy had adequate radiological protection programmes and were following international standards, such as those of ICRP. Those standards had been formulated conservatively, taking into account some of the uncertainties in the assessment of radiological risk. Health effects related to nuclear technology, if there were any, might not occur for tens of years after accidental exposures or releases of radionuclides to the environment. Thus, although those risks were difficult to assess, they were assessed conservatively. For more precise measurement, mathematical modeling approaches were being pursued for projecting environmental transport of radionuclides, for estimating levels of exposure of populations, and for predicting early and late health effects.

166. One speaker noted that radiological risk assessment involved the following major uncertainties, which would always be embedded in conservative assumptions and model constraints: lack of environmental measurements for model validation; uncertainties in extrapolation to low-dose of health effects based on high dose and high dose rate data; lack of information on comparative risks of different radiation types; and difficulties in discriminating between the effects of parallel exposures of radiation and chemicals. Other speakers suggested that even though the present techniques for radiological risk assessment were adequate from the point of view of safety considerations, continued efforts at health risk assessment in the nuclear field were necessary to allow improved decision-making on the use of nuclear techniques.

167. One speaker emphasized the importance of training in radiological protection.

(c) Emergency planning and preparedness

168. One speaker described a system of computerized dose-measurement equipment which could provide a comprehensive picture of radiation levels at the shortest possible notice for selected geographical areas. Citing recent experience, the speaker stressed the importance of the use of such a model for emergency preparedness.

5. Spent fuel and radioactive waste management

169. The Committee heard 12 reports on the topic "Spent fuel and radioactive waste management", from Australia, Austria, Belgium, France, Spain, Sweden and United States.

170. Some speakers noted that one of the major public concerns related to the use of nuclear energy for power generation was the issue of disposal of radioactive wastes. Several speakers expressed the view that that concern could be answered, that the waste management technology required for operational nuclear power plants and other facilities was fully developed, and that facilities were successfully operational. Similarly, design, engineering and operation of storage and disposal facilities for intermediate wastes posed no problems.

171. Some speakers indicated that for the storage, management and long-term disposal of high-level wastes, considerable research was being conducted and feasible options were available, although additional work needed to be done. Several speakers indicated that considerable progress, including in research on advanced radioactive waste processing and conditioning, was being made towards ensuring that the options available were the best which could reasonably be achieved.

172. One speaker noted that a well-planned programme for waste management, appropriate to the nuclear energy utilization programme in the country concerned, could enhance public confidence in and acceptance of nuclear energy. Extensive co-operation in that field at the international level could contribute to achieving that goal.

173. Several speakers indicated that the best choice for safe, long-term disposal of spent fuel and other high-level radioactive waste was in deep geologic settings. One speaker noted that his country was now evaluating three diverse sites through detailed site characterization and that consideration was also being given to monitored retrievable storage to enhance operational and transportation efficiency.

174. According to some speakers, costs for management and final disposal of spent nuclear fuel and nuclear waste and for decommissioning nuclear plants were estimated at 5-10 per cent of the cost of nuclear-generated electricity. Active international co-operation would be central to the success of national programmes in that field. One speaker noted that his country was now participating in such co-operation and sought to assist other countries in their national nuclear waste disposal planning.

175. One speaker described the facilities and techniques available in his country for decommissioning nuclear installations and emphasized the importance that should be given to that problem.

6. Practices and experiences in legal, administrative and regulatory aspects

176. Thirteen reports were presented to the Committee on the topic "Practices and experiences in legal, administrative and regulatory aspects", by Belgium, Brazil, Canada, China, France, German Democratic Republic, Germany, Federal Republic of, Mexico, Spain, Sweden and United States.

177. The use of probabilistic risk analysis was discussed by speakers from some countries (China, Germany, Federal Republic of, and United States). This method for broadly analyzing design and operational aspects of nuclear power plants was receiving increasing use in nuclear safety assessments and the development and improvement of nuclear safety requirements.

178. Some speakers mentioned the recently established international conventions on early notification in the event of a nuclear accident that could have significant transboundary effects, and for the establishment of a framework for the provision of assistance in the event of a nuclear accident or a radiological emergency. The importance of those conventions was emphasized by some speakers as an example of prompt and appropriate action to respond to the existing need through international co-operation.

179. Several speakers emphasized the importance of emergency planning for operating nuclear power stations. Preplanned measures to minimize public exposure to off-site releases from reactor accidents had been established by law in some countries. Other countries had considered such measures in their domestic planning for the operation of commercial reactors.

7. Personnel training

180. Four reports were presented on the topic "Personnel training", by Brazil, France, German Democratic Republic and United States.

181. Some speakers indicated that international collaboration already played an important part in the preparation and execution of training programmes in many countries. A number of speakers recognized that international assistance had an important role to play in creating new regional training programmes and expanding existing programmes, including IAEA programmes. One speaker emphasized the need to proceed with the upgrading of the programmes mentioned. Some speakers also noted that it was important that the subjects of training be specifically related to national needs. Some suggested topics for such training included reactor operations, waste management, uranium prospecting, quality assurance, fuel fabrication, radioisotope production, regulatory arrangements and non-destructive testing.

182. A number of speakers emphasized that highly-trained and motivated personnel were essential both to the successful development of nuclear power and to the safe operation of nuclear power plants. Speakers from different countries described the steps which they had taken to build up the necessary pool of skills or to provide systematic, continuing training for all levels of staff in nuclear power plants.

8. Other matters

183. Some speakers expressed their concern in regard to the consequences of armed attacks on peaceful nuclear facilities.

C. Recommendations

184. During the discussions in Committee II, a number of proposals and recommendations were made pertaining to ways and means for promoting international co-operation in the peaceful uses of nuclear energy. In accordance with section II of the Preparatory Committee's working paper on "Proposed procedures and topics for the work of Committee II" (A/CONF.108/WP.4), which was adopted by the Conference, the Committee agreed to transmit to Committee I a total of 66 recommendations on a wide range of subjects proposed by the following 17 States: Argentina, Brazil, China, Colombia, Egypt, German Democratic Republic, India, Iran (Islamic Republic of), Iraq, Japan, Nigeria, Paraguay, Republic of Korea, Sweden, Turkey, USSR and United States. The recommendations, contained in paragraphs 2-67 of document A/CONF.108/C.2/L.2/Add.3, were forwarded to Committee I in the same form in which they were submitted to Committee II, with an indication of the delegations which proposed them (annex IV, present report).

VII. ACTION BY THE CONFERENCE ON THE REPORTS OF THE TWO MAIN COMMITTEES

185. The Conference, at its 10th plenary meeting, on 7 April 1987, took note of the reports of the two Main Committees.

186. At the same plenary meeting, the Conference also noted that India and China had stated that they had made the following proposals in Committee I:

India - The following additional paragraph should be inserted after the third chapeau paragraph immediately before paragraph 1 of Section 1 (Chapter V) - text of proposals on Principles:

> [Some other States which are not parties to any non-proliferation treaties understand the term non-proliferation in terms of their national declarations of non-proliferation policy. In their view, the proliferation of nuclear weapons includes their manufacture, acquisition or storage.]

China - The first sentence of paragraph 19 of Section 2 (Chapter V) - text of proposals on the ways and means - of the report of Committee I should read as follows:

> [To help provide a climate for international peaceful nuclear co-operation, [multilateral and bilateral] disarmament negotiations [particularly those between the USA and the USSR] should be intensified with a view to concluding agreements to halt and reverse the nuclear arms race, and to prevent an arms race in outer space...]

VIII. REPORT OF THE CREDENTIALS COMMITTEE

187. The Conference, at its 15th plenary meeting, on 10 April 1987, adopted the report of the Credentials Committee, contained in document A/CONF.108/6/Rev.1.

188. Statements were made by the representatives of Afghanistan, Chile, Egypt, Indonesia, Iran (Islamic Republic of), Malaysia, Pakistan, Sudan and Syria.

IX. ADOPTION OF THE REPORT OF THE CONFERENCE

189. The Conference, at its 15th plenary meeting, on 10 April 1987, adopted the present report by consensus.

X. CONCLUDING STATEMENTS

A. Statement by Mohamed Shaker, President of the Conference

Distinguished Delegates,

190. We are about to conclude the United Nations Conference for the Promotion of International Co-operation in the Peaceful Uses of Nuclear Energy, after intensive deliberations and discussions which continued without interruption over three weeks, on the topics contained in the agenda of the Conference. It is no exaggeration to state that those topics have raised and will continue to raise issues of considerable importance for the international community at large, with regard to the use of nuclear energy for the benefit of peace and social and economic development in a world where there is an urgent need for every effective resource that can contribute to progress and construction.

191. The convening of this significant Conference and the remarkable, wide participation by your countries, as well as by the United Nations, its specialized agencies, the International Atomic Energy Agency and many governmental and national organizations, is in itself evidence of the importance of the issues before the Conference and the concerted international efforts being made to deal with them.

Distinguished Delegates,

192. This Conference has been a sincere endeavour, in which you have all been engaged in your capacity as representatives of your countries, to explore the path to the establishment of universally acceptable principles for international co-operation in the use of nuclear energy for peaceful purposes and to discuss appropriate ways and means for the promotion of such co-operation, as specified in General Assembly resolution 32/50, and in accordance with mutually acceptable considerations of non-proliferation.

193. The present Conference has also constituted a serious attempt on your part to discuss the role of nuclear energy in social and economic development as well as the role of other peaceful applications of nuclear energy, such as food and agriculture, health and medicine, irrigation, industry, etc., in accelerating such development.

194. However, now that the Conference is nearing its end, we owe it to ourselves to pause and review objectively and calmly what we have been able to achieve during the past three weeks.

Distinguished Delegates,

195. In order to make an objective and realistic analysis, we ought first to recognize that as reflected in its final document, the Conference has not been able to reach an agreement on principles universally acceptable for international co-operation in the peaceful uses of nuclear energy, and that there remain significant differences which all our States must attempt to overcome before such an agreement can be reached.

196. To be fair, however, it should be recognized that the difficulties were never absent from the minds of those who convened the present Conference and have been making the preparations for it for many years. This is best demonstrated by your unanimity, during preparation of the agenda, and later on at the first meeting of the Conference, that all decisions pertaining to agenda item 5 should be taken by consensus.

197. Nevertheless, in all fairness we must also record that the present Conference, the first one of this nature in the history of the United Nations, has provided a remarkable international forum, where views have been exchanged in a frank manner and within a democratic framework, and significant, objective discussions have been held on the principles of international co-operation in the peaceful uses of nuclear energy and the means of fostering such co-operation, under the principles laid down in General Assembly resolution 32/50, and in accordance with mutually acceptable considerations of non-proliferation. In the course of those discussions, every one of us was given the opportunity to explain the position, interests, concerns and hopes of his country.

198. Even if those discussions have indicated that significant differences still exist, they similarly indicate that every one of us, in leaving the Conference, has a clearer understanding of the positions of the other parties.

199. Moreover, those discussions have shown that the Conference is by no means the end of the road, but rather an important signpost on that road, which points towards the landmarks before us. The present Conference, in fact, has been an inevitable, important phase through which we have had to pass.

200. The Conference has shown us what will be required of us in the future, namely, to make further efforts, inasmuch as the generally recognized needs of all our countries are concerned, to strengthen and promote international co-operation in this essential field.

201. The Conference has also guided us towards a recognition of the importance of our continued, positive attempt, at all possible levels, whether that of the United Nations, its specialized agencies or the International Atomic Energy Agency, to pursue such efforts with indefatigable patience.

Distinguished Delegates,

202. In all fairness we must also state that during the present Conference, extensive discussions have taken place, relating to the role of nuclear energy in social and economic development, but also touching on a wide range of subjects of interest to both developed and developing countries. A considerable number of country papers and scientific research studies were submitted, reflecting relevant specific experiences and lessons learned which many countries will certainly be able to take advantage of in preparing or applying their nuclear programmes. All those papers have constituted an important, positive source for us in terms of the outcome of the Conference.

203. At all the stages of the Conference, the discussions revealed a clearer view of the problems and difficulties towards which efforts needed to be directed so as to facilitate the utilization of nuclear energy by the various countries, particularly the developing countries.

204. Furthermore, the discussions revealed the enormous and at the same time indisputable importance of strengthening the safety element and according it the highest priority so that the vast potential of nuclear energy for many countries may become a source of good and welfare for our peoples, rather than a source of dire threat and extreme hazard to the security and well-being of our world.

Distinguished Delegates,

205. These have been a few references to the huge responsibilities placed on our international community, together with all its institutions, and on all our States as members of the international family, and I am confident that we all are ready to meet them.

206. Finally, I should like to express my thanks to all the delegates for their co-operation, and for the spirit of co-operation and understanding which prevailed throughout the present Conference. Every one of you has played his part; I have acted merely as an assistant. I should especially like to extend my thanks to the Chairmen of the First Committee and of the Second Committee for the efforts made by them in achieving what has been achieved at this Conference.

207. I should also like to extend my thanks to the Secretary-General of the Conference, His Excellency Ambassador Amrik Mehta, whose great efforts enabled us to meet here at Geneva during these past three weeks, for which we all express our thanks and appreciation. We wish him every success in all his future undertakings.

208. I should like to thank all members of the Secretariat for their effective and positive contribution to the results achieved.

209. I should like to express my thanks personally to Mr. Jasentuliyana, who has supported me in all the many administrative matters for which I needed his help. I should also like to extend my thanks to all his assistants, as well as to all those who participated in the interpretation and the issuance of documents which served us in attaining the results achieved.

Distinguished Delegates,

210. I thank you all once again and I wish you every success.

B. Statement by Amrik S. Mehta, Personal Representative of the Secretary-General of the United Nations and Secretary-General of the Conference

211. The three weeks of intensive work - in meetings and discussions, consultations and negotiations - now brings the United Nations Conference for the Promotion of International Co-operation in the Peaceful Uses of Nuclear Energy to a close with the adoption of its report. The complexities of the issues before the Conference were well known from the beginning and one had no illusions that finding mutually agreeable solutions would be an easy task. In this context, the Conference owes you, Mr. President, a particular debt of gratitude for your wise leadership and skillful guidance and for all you have

done in the search for consensus on some of the more complex and sensitive questions. On behalf of the United Nations, I should like to take this opportunity to thank you, Mr. President, for the great efforts you have made. On behalf of the United Nations, I should also like to thank the Chairmen of the two Committees, the Rapporteur General, the members of the General Committee and all the distinguished delegates present here for their tireless efforts to this end during the Conference.

212. The Conference and its preparations have brought together diplomatic and scientific representatives from all parts of the world. I believe that all of us have acquired from this experience a better understanding of the complexities of the problems related to the promotion of international co-operation in the peaceful uses of nuclear energy and a better appreciation of each other's point of view in a field which is of vital importance and concern equally to both the technologically advanced and the developing countries.

213. This global Conference has indeed provided a timely opportunity to examine the role of nuclear energy in economic and social development and to consider how international co-operation in this field might be oriented in the future. As the discussions here have demonstrated, nuclear energy has important contributions to make, but the exploitation of its full potential is hampered by difficulties and limitations. For reasons we all know, it has proved not possible for the Conference to arrive at definitive answers to many of the questions that were raised. However, I trust that the process started during this Conference will continue beyond Geneva and into the future.

214. Considering that international co-operation in the peaceful uses of nuclear energy is an on-going process, the Conference has served a useful purpose also in terms of the ideas that have been stimulated, the contacts that have been established, and the valuable information that has been disseminated and could be extremely useful not only to the participants in the Conference but also to Governments and to the public at large.

215. Looking to the future, the results of the Conference will also be seen in a broader perspective through the responses and actions of the international community at the United Nations, in the International Atomic Energy Agency and other concerned international organizations, and most importantly, as reflected in the national policies of the Member States.

216. In concluding, I should like to express my sincere thanks to all the United Nations staff who have assisted me in the preparations of the Conference for nearly five years in Vienna and now at the Conference itself in Geneva, including in particular the team of very able and experienced officers from New York headed by our distinguished Secretary, Mr. Jasentuliyana, who have come especially for the Conference. All these dedicated and competent colleagues, including our translators and interpreters, have indeed made an essential contribution to the work of the Conference and I am sure I speak for all of you in thanking them all for a job well done.

Annex I

TEXTS OF MESSAGES ADDRESSED TO THE CONFERENCE BY THE SECRETARY-GENERAL OF THE UNITED NATIONS AND BY HEADS OF STATE OR GOVERNMENT

I. UNITED NATIONS

H.E. Javier Pérez de Cuéllar, Secretary-General of the United Nations

[Original: ENGLISH]

The founding of the United Nations just as the nuclear age was beginning had special significance for humanity. The splitting of the atom opened access to a new and important source of energy - energy which could bring unprecedented advances in beneficial science and technology and unprecedented destruction. The United Nations, in the four decades of its existence, has helped to assure that the world would not fall victim to the force of the atom and to encourage, in many ways, its peaceful utilization. New opportunities for co-operation amongst nations with different cultures, different values, different beliefs, and different social and economic systems have been opened so that the benefits of modern science and technology could be available to all, serving the cause of much needed economic and social development throughout the world.

In the history of human progress, energy has played a critical role. Development that offers the hope of prosperity is, for the vast majority of the world's people, dependent on an adequate supply of energy. Nuclear power is seen by many as offering great promise in this regard, especially since the countries of the world are unevenly endowed with other energy sources.

Each country must be free to choose for itself the energy sources suited to its national interests, needs, and conditions. None should be deprived of access to the technology for peaceful and safe utilization of nuclear power. However, in our increasingly inter-dependent world, as long as nuclear energy is in use, close international co-operation will be necessary to ensure, on the one hand, that nuclear technology is not abused or misused, and, on the other, that its benefits are made available in a safe and secure manner. In the light of recent events, the need for such co-operation for the safe development of nuclear energy has become all the more evident. The constructive agreements reached in the International Atomic Energy Agency over the past year constitute encouraging evidence that this need is recognized. The implementation of these agreements will, no doubt, strengthen the peaceful uses of nuclear energy.

International co-operation in bringing the potential benefits of the atom to all countries needs, of course, to extend beyond the field of energy. For many developing countries, the application of nuclear techniques in fields such as health and medicine, food and agriculture, and hydrology have more immediate relevance than nuclear energy to their economic and social development.

Successful efforts have been made to separate, or compartmentalize, civilian and military uses of nuclear energy. But the laws of physics make them the opposite sides of the same coin. The enormous arsenals of nuclear weapons that exist generate fear and distrust among nations and peoples and pose a serious threat to humanity itself. International co-operation in the peaceful uses of nuclear energy can reach its full potential only in a world from which its potentially destructive uses have been eliminated. It is only logical - and, surely, wise - to see the ultimate elimination of nuclear weapons as necessary for the realization of the full peaceful benefits of the atom.

This Conference is a pioneering global effort by the United Nations designed specifically for the purpose of promoting international co-operation in the peaceful uses of nuclear energy for economic and social development. This distinctive purpose of the Conference needs to be clearly understood. A system in which technologically advanced states stand apart from the rest in the peaceful uses of nuclear energy, as in other applications of modern science and technology would be neither morally nor politically acceptable and, in the end, unsustainable. Yet, in order to promote international co-operation to counter such a possibility, a climate of confidence is essential between the technologically advanced and the developing countries. This requires a greater measure of mutual understanding of each other's concerns. As a global forum with the widest possible participation, this Conference is ideally suited to consider these concerns realistically and constructively. The aim must be to establish an appropriate framework for enhanced international co-operation in the peaceful uses of nuclear energy that will serve the interests of both the technologically advanced and the developing countries. I am convinced that these interests, while not identical, are not contradictory and subject to harmonization for the common benefit.

The task before you is undoubtedly complex but you have come together at a time when the need for co-operation is compellingly clear. I wish the Conference full success in achieving the meaningful results foreseen from it by the General Assembly.

II. CHINA

H.E. Zhao Ziyang, Premier of the State Council of the People's Republic of China

[Original: CHINESE]

On behalf of the Government and people of the People's Republic of China, I wish to express our warm congratulations on the convening of the United Nations Conference for the Promotion of International Co-operation in the Peaceful Uses of Nuclear Energy.

At present, world-wide progress is being made in peaceful uses of nuclear energy and nuclear energy has become an important source of energy. Its extensive application in industrial, agricultural, medical and other fields is playing an increasingly important role in promoting the social-economic progress of various countries. The developing countries actively advocate the further strengthening of international co-operation in promoting the peaceful uses of nuclear energy.

The Chinese Government holds that every country has the right to engage in activities of peaceful uses of nuclear energy and take an active part in the international co-operation in this field. As a developing country which has made some initial progress in peaceful uses of nuclear energy, China is ready to strengthen its co-operation with other countries on the basis of equality and mutual benefit to ensure that the peaceful uses of nuclear energy bring bountiful benefit to the whole mankind.

May the Conference be crowned with success.

III. EGYPT

H.E. Mohamed Hosni Mubarak,
President of the Arab Republic of Egypt

[Original: ARABIC]

Your Conference is being held at a very critical stage in which our contemporary world is standing before an important crossroads and has to choose the correct road which will eliminate the suffering of many peoples, and create for them the hope of a prosperous future.

As a result, the issue of economic and social development has come to receive top priority in the concerns of political leaders all over the world, particularly in the third world States whose peoples are struggling to take their right place on earth and to obtain their share of well-being and prosperity.

The political leaders at the Summit of Non-Aligned Countries held at Harare in September 1986 expressed the feeling of peoples of developing States all over the world when they referred to the hopes those peoples attach to your Conference, which aims at the promotion of international co-operation in the peaceful uses of nuclear energy in the interests of economic and social development, at establishing the principles for such co-operation and overcoming the difficulties standing in its way, and at creating means that will ensure that those States and peoples can participate in all the benefits offered to them by nuclear energy in their steady endeavours towards development.

The enormous potential afforded to us by nuclear energy for construction and progress in the fields of electric energy, medicine, health, agriculture and industry, in which all peoples of the earth have the right to share without any discrimination, places heavy responsibilities upon us not to permit it to become the very means of world destruction. In this context I would like to mention two important points:

First: the recent incidents affecting some nuclear installations have confirmed that the implications and hazards of such incidents are extensive in terms of scope and diffusion. They are not limited to the regions in which such installations are situated, but extend to wherever they are carried by winds and clouds, crossing all borders, and may affect the health, food and lives of human beings, and indeed of every living creature.

These incidents have underlined the extreme importance of analysing the experience gained and reviewing the systems applied for ensuring the safety of nuclear installations. Intensified international efforts have recently been directed towards this goal, and what concerns us first of all is that this Conference will also contribute, in the context of its momentous tasks, to bringing real peace of mind to our peoples as regards secure and safe investment in nuclear energy.

Second: the world has witnessed during recent years a dangerous escalation of the nuclear armaments race, which has caused a frightening accumulation of nuclear arms and a threat of their extension to new fields and regions. Our country participates tirelessly with numerous other countries in the efforts made to achieve non-proliferation of nuclear weapons, nuclear disarmament and the establishment of nuclear-weapon-free zones in Africa and the Middle East. The time has come to intensify efforts and start taking practical, effective steps to achieve these goals.

I am confident that your esteemed Conference will give all these basic issues full consideration as it looks at the promotion of international co-operation in the peaceful uses of nuclear energy.

Having been honoured by your esteemed Conference with the responsibility of chairmanship, my country finds itself doubly obliged to spare no effort to contribute to the attainment by the Conference of the results that our peoples expect from it in the cause of development and strengthening of their peace and security.

May God grant you guidance.

IV. IRAQ

H.E. Saddam Hussein, President of the Republic of Iraq

[Original: ARABIC]

On the occasion of the United Nations Conference for the Promotion of International Co-operation in the Peaceful Uses of Nuclear Energy, I seize this opportunity to address a special greeting to the participants and wish them all success in their noble task.

This Conference, which has been under preparation for a long time, is held today under highly complex international circumstances, the most significant of which are: the frantic nuclear arms race between the Western and Eastern camps; the prodigious accumulation of conventional and nuclear weapons; the increasing tensions and international and regional conflicts; the clear violation of laws, customs, human values and the principles of good-neighbourliness between nations; the growth of aggressive trends, the quest for domination and expansion, and disrespect for States' independence and ways of life. Because of these circumstances many peoples and nations are endeavouring to secure the means to protect themselves from the dangers threatening them. This causes considerable waste of wealth and resources that could otherwise be directed to economic development programmes and plans, including the peaceful uses of nuclear energy in economic and social development.

As you know, nuclear energy is an important source of energy needed by the world in general and the developing countries in particular, as its peaceful uses are of great importance to economic and social development in many countries.

Based on the principle of equality, all States have the right to acquire and use nuclear technology for such purposes according to their priorities, interests and needs under appropriate, agreed international safeguards to prevent all kinds of nuclear proliferation, without any discrimination.

It should therefore be emphasized that the wide, unrestricted transfer of systems, equipment, technologies and information is a necessity for the promotion of peaceful uses of nuclear energy with more security and less risk. I hope that everybody at this Conference will endeavour to create a positive atmosphere for the promotion and development of international co-operation, eschewing attempts to hinder the transfer of peaceful nuclear technology and to apply pressures on the developing countries to prevent them from proceeding with their peaceful nuclear programmes.

On this occasion, I would like to mention the responsibility of your Conference in regard to supporting international efforts for the creation of an effective formula to provide protection for nuclear installations against deliberate, armed attacks that may lead to the release of lethal atomic radiation with results equivalent to those from the use of radioactive weapons.

The provision of such protection to nuclear installations is a necessity dictated by the international consensus to prevent the repetition of an incident such as the Israeli armed attack on Iraqi nuclear installations devoted exclusively to peaceful uses, and subject to the International Atomic Energy Agency (IAEA) safeguards - an attack which took place on 7 June 1981. This act of aggression was strongly condemned by the international community and by the Security Council and the General Assembly of the United Nations, along with the General Conference of the IAEA, as a clear violation of the United Nations Charter and the norms of international conduct, a grave threat to international peace and security, an attack against the nuclear non-proliferation system and the IAEA safeguards system, and an aggression against the established right of States in regard to development and use of nuclear energy for peaceful purposes.

This Conference is also invited to apply pressure on the racist Tel Aviv and Pretoria régimes so that they comply with the resolutions of the Security Council and the General Assembly regarding the placing of their nuclear installations under international control and the obligation not to repeat the armed aggression against nuclear installations.

I greet you again and pray for blessing on your endeavour to promote international co-operation in this vital field for the sake of justice, prosperity and development. Peace be with you.

Annex II

LIST OF DOCUMENTS PRESENTED TO THE CONFERENCE

A. Pre-Conference documentation

A/CONF.108/PRE-CONF./L.1	Organizational arrangements for the Conference

B. Basic Conference documentation

A/CONF.108/1	Provisional agenda
A/CONF.108/2	Provisional rules of procedure
A/CONF.108/3	Report of Committee I
A/CONF.108/4	Report of Committee II
A/CONF.108/5	Draft report of the Conference
A/CONF.108/5/Add.1	Draft report of the Conference
A/CONF.108/5/Add.2	Draft report of the Conference
A/CONF.108/5/Add.3	Draft report of the Conference
A/CONF.108/5/Add.4	Draft report of the Conference
A/CONF.108/5/Add.4/Corr.1	Draft report of the Conference
A/CONF.108/5/Add.5	Draft report of the Conference (Annex I)
A/CONF.108/5/Add.6	Draft report of the Conference (Annex II)
A/CONF.108/6	Report of the Credentials Committee
A/CONF.108/6/Rev.1	Report of the Credentials Committee

C. Working papers

A/CONF.108/WP.1***	Proposed outline of the output document of the Conference
A/CONF.108/WP.2***	Proposed possible recommendations on appropriate ways and means of promoting international co-operation in the peaceful uses of nuclear energy
A/CONF.108/WP.3***	Proposed procedures and topics for the work of Committee I
A/CONF.108/WP.4	Proposed procedures and topics for the work of Committee II

D. Contributions by Governments

A/CONF.108/NP/1	Argentina, Australia, Bangladesh, Belgium, Bolivia, Brazil
A/CONF.108/NP/1/Add.1*	Belgium
A/CONF.108/NP/2	Bulgaria, Chile, China, Colombia, Cyprus
A/CONF.108/NP/2/Add.1*	Cuba
A/CONF.108/NP/3	Czechoslovakia, Denmark, Greece, Guatemala, India, Iraq
A/CONF.108/NP/3/Add.1	Indonesia
A/CONF.108/NP/3/Add.1/Corr.1**	Indonesia
A/CONF.108/NP/3/Add.2	Hungary
A/CONF.108/NP/3/Add.3*	German Democratic Republic
A/CONF.108/NP/3/Add.4*	Denmark
A/CONF.108/NP/4	Israel, Italy, Jamaica, Lebanon, Morocco
A/CONF.108/NP/4/Add.1	Japan
A/CONF.108/NP/4/Add.2*	Malaysia
A/CONF.108/NP/5	Netherlands, New Zealand, Norway, Paraguay
A/CONF.108/NP/5/Add.1*	Pakistan
A/CONF.108/NP/5/Add.2**	Paraguay
A/CONF.108/NP/6	Peru, Philippines, Poland, Portugal, Republic of Korea, Romania

A/CONF.108/NP/6/Add.1*	Republic of Korea
A/CONF.108/NP/7	Senegal, Sudan, Suriname, Thailand
A/CONF.108/NP/7/Add.1	Sweden
A/CONF.108/NP/8	Turkey, Union of Soviet Socialist Republics
A/CONF.108/NP/8/Add.1*	United Kingdom of Great Britain and Northern Ireland
A/CONF.108/NP/8/Add.2*	Turkey

E. Contributions by the International Atomic Energy Agency and other international organizations

A/CONF.108/IGO/1	International Atomic Energy Agency
A/CONF.108/IGO/2	United Nations Development Programme
A/CONF.108/IGO/3	United Nations Department of International Economic and Social Affairs
A/CONF.108/IGO/4	United Nations Department of Technical Co-operation for Development
A/CONF.108/IGO/5	United Nations Department of Disarmament Affairs
A/CONF.108/IGO/6	United Nations Environment Programme
A/CONF.108/IGO/7	United Nations Conference on Trade and Development
A/CONF.108/IGO/8	Economic Commission for Europe
A/CONF.108/IGO/8/Corr.1**	Economic Commission for Europe
A/CONF.108/IGO/9	World Health Organization
A/CONF.108/IGO/10	United Nations Educational, Scientific and Cultural Organization
A/CONF.108/IGO/11	International Labour Organisation
A/CONF.108/IGO/12	United Nations Industrial Development Organization
A/CONF.108/IGO/13	International Maritime Organization
A/CONF.108/IGO/14	International Labour Organisation, World Health Organization and International Atomic Energy Agency
A/CONF.108/IGO/15	International Centre for Theoretical Physics

A/CONF.108/IGO/16	Nuclear Energy Agency of the Organisation for Economic Co-operation and Development
A/CONF.108/IGO/17*	World Meteorological Organization
A/CONF.108/IGO/18*	Commission of the European Communities

F. Regional expert group meetings

A/CONF.108/REX/1	Report of the Meeting of Experts from the Asian and Pacific Region
A/CONF.108/REX/2	Report of the Meeting of Experts from the Latin American and Caribbean Region
A/CONF.108/REX/3	Report of the Meeting of Experts from the Western Asian Region
A/CONF.108/REX/4	Report of the Meeting of Experts from the African Region
A/CONF.108/REX/5	Report of the Meeting of Experts from Europe, United States of America and Canada

G. Papers forwarded to the Conference in accordance with paragraph 28 of the report of the Preparatory Committee (A/41/47)

A/CONF.108/L.1***	Preliminary considerations of the Group of 77 about the preparations for the Conference
A/CONF.108/L.2***	Suggestion by the German Democratic Republic for additional source material for principles universally acceptable for international co-operation in the peaceful uses of nuclear energy
A/CONF.108/L.2/Corr.1* ***	Suggestion by the German Democratic Republic for additional source material for principles universally acceptable for international co-operation in the peaceful uses of nuclear energy
A/CONF.108/L.3***	Nuclear disarmament, new international economic order: submitted by Czechoslovakia
A/CONF.108/L.3/Corr.1*** (French only)	Nuclear disarmament, new international economic order: submitted by Czechoslovakia
A/CONF.108/L.4***	Draft set of principles universally acceptable for international co-operation in the peaceful uses of nuclear energy: submitted by the Group of 77

A/CONF.108/L.5***	Position of Cuba regarding the Non-Proliferation Treaty and the Treaty of Tlatelolco; Extracts from the Declaration adopted by the Eighth Summit of Non-Aligned Heads of State and Government: submitted by Cuba
A/CONF.108/L.6***	United States preliminary submission of references on principles universally acceptable for international co-operation in the peaceful uses of nuclear energy
A/CONF.108/L.7***	Irrelevance of the Non-Proliferation Treaty to the non-proliferation of nuclear weapons: paper submitted by India
A/CONF.108/L.8***	Preliminary submission of Sweden for supplementary reference on principles universally acceptable for international co-operation in the peaceful uses of nuclear energy

H. Documents submitted by delegations during the Conference

A/CONF.108/L.9***	Joint submission of the delegations of the People's Republic of Bulgaria, the Byelorussian Soviet Socialist Republic, the Czechoslovak Socialist Republic, the German Democratic Republic, the Hungarian People's Republic, the Mongolian People's Republic, the Polish People's Republic, the Ukrainian Soviet Socialist Republic and the Union of Soviet Socialist Republics in connection with the United Nations Conference for the Promotion of International Co-operation in the Peaceful Uses of Nuclear Energy
A/CONF.108/L.10***	Note by the Secretariat
A/CONF.108/L.11***	Submission by Australia and New Zealand: The text of the Treaty of Rarotonga as source material for the discussion of universally acceptable principles for international co-operation in the peaceful uses of nuclear energy
A/CONF.108/L.12***	United States paper on principles of peaceful nuclear co-operation
A/CONF.108/L.13	A short review of the international situation in the field of peaceful uses of nuclear energy, since the treaty on the non-proliferation of nuclear weapons (NPT) entered into force: Islamic Republic of Iran

A/CONF.108/L.14	Principles universally acceptable for international co-operation in the peaceful uses of nuclear energy: submission by India
A/CONF.108/L.15	Principles universally acceptable for international co-operation in the peaceful uses of nuclear energy and appropriate ways and means for the promotion of such co-operation: Proposal of the Islamic Republic of Iran
A/CONF.108/L.16	Draft resolution: Islamic Republic of Iran
A/CONF.108/L.17	Peaceful Uses of Nuclear Energy in Ethiopia: paper submitted by Ethiopia
A/CONF.108/L.18	Co-operation in the Peaceful Uses of Nuclear Energy under the Treaty on the Non-Proliferation of Nuclear Weapons (NPT): paper submitted by the United States of America in response to A/CONF.108/L.13
A/CONF.108/L.19	Co-operation in the Peaceful Uses of Nuclear Energy Under the Treaty on the Non-Proliferation of Nuclear Weapons (NPT): Paper submitted by Sweden
A/CONF.108/L.20	Intervention by the Head of the Delegation of the Syrian Arab Republic on the Summary of the Work of the Conference
A/CONF.108/L.21	Statement made by Israel concerning Paragraph 23 bis of document A/CONF.108/5/Add.2 (for para. 23 bis, see para. 27 of chapter IV of present document)

I. Documents of Committee I

A/CONF.108/C.1/1	Provisional agenda
A/CONF.108/C.1/L.1***	Preliminary submission of Yugoslavia for supplementary reference on principles universally acceptable for international co-operation in the peaceful uses of nuclear energy
A/CONF.108/C.1/L.2	Draft report of Committee I
A/CONF.108/C.1/L.2/Corr.1 (Chinese only)	Draft report of Committee I
A/CONF.108/C.1/L.2/Add.1	Draft report of Committee I
A/CONF.108/C.1/CRP.1	Chairman's paper: compilation of suggestions
A/CONF.108/C.1/CRP.2	Chairman's paper: compilation of suggestions
A/CONF.108/C.1/CRP.3	Consolidated text on the ways and means

J. Documents of Committee II

A/CONF.108/C.2/1	Provisional agenda
A/CONF.108/C.2/2	Transmittal note to Committee I
A/CONF.108/C.2/L.1	Texts proposed by delegations for the report of the Committee
A/CONF.108/C.2/L.1/Add.1	Texts proposed by delegations for the report of the Committee
A/CONF.108/C.2/L.1/Add.2	Texts proposed by delegations for the report of the Committee
A/CONF.108/C.2/L.1/Add.3	Texts proposed by delegations for the report of the Committee
A/CONF.108/C.2/L.1/Add.4	Texts proposed by delegations for the report of the Committee
A/CONF.108/C.2/L.1/Add.5	Texts proposed by delegations for the report of the Committee
A/CONF.108/C.2/L.2	Draft report of Committee II
A/CONF.108/C.2/L.2/Add.1	Draft report of Committee II
A/CONF.108/C.2/L.2/Add.2	Draft report of Committee II
A/CONF.108/C.2/L.2/Add.3	Draft report of Committee II
A/CONF.108/C.2/INF.1**	List of reports to be presented by countries in relation to topics proposed for consideration by Committee II
A/CONF.108/C.2/INF.2	Provisional schedule of reports
A/CONF.108/C.2/INF.2/Rev.1	Provisional schedule of reports

K. Abstracts of reports presented by countries in relation to topics proposed for consideration by Committee II

A/CONF.108/C.2/REP/ABSTRACT.1**	- United States of America
A/CONF.108/C.2/REP/ABSTRACT.1/Add.1**	- United States of America
A/CONF.108/C.2/REP/ABSTRACT.2**	- Sweden
A/CONF.108/C.2/REP/ABSTRACT.2/Add.1**	- Sweden
A/CONF.108/C.2/REP/ABSTRACT.2/Add.2**	- Sweden
A/CONF.108/C.2/REP/ABSTRACT.3**	- Netherlands

A/CONF.108/C.2/REP/ABSTRACT.4 (English and Spanish)	- Spain
A/CONF.108/C.2/REP/ABSTRACT.5**	- Federal Republic of Germany
A/CONF.108/C.2/REP/ABSTRACT.6**	- Egypt
A/CONF.108/C.2/REP/ABSTRACT.6/Add.1**	- Egypt
A/CONF.108/C.2/REP/ABSTRACT.7**	- Denmark
A/CONF.108/C.2/REP/ABSTRACT.8 (English and French)	- Belgium
A/CONF.108/C.2/REP/ABSTRACT.8/Add.1 (English and French)	- Belgium
A/CONF.108/C.2/REP/ABSTRACT.9 (English and French)	- France
A/CONF.108/C.2/REP/ABSTRACT.9/Add.1**	- France
A/CONF.108/C.2/REP/ABSTRACT.10**	- Canada
A/CONF.108/C.2/REP/ABSTRACT.10/Add.1**	- Canada
A/CONF.108/C.2/REP/ABSTRACT.11**	- German Democratic Republic
A/CONF.108/C.2/REP/ABSTRACT.12 (English and Russian)	- Byelorussian Soviet Socialist Republic, Ukrainian Soviet Socialist Republic, Union of Soviet Socialist Republics
A/CONF.108/C.2/REP/ABSTRACT.13**	- Czechoslovakia
A/CONF.108/C.2/REP/ABSTRACT.14**	- Australia
A/CONF.108/C.2/REP/ABSTRACT.15**	- Japan
A/CONF.108/C.2/REP/ABSTRACT.16**	- Finland
A/CONF.108/C.2/REP/ABSTRACT.17**	- Austria
A/CONF.108/C.2/REP/ABSTRACT.17/Add.1**	- Austria

A/CONF.108/C.2/CRP.1	Informal discussion paper (Draft report of Committee II)
A/CONF.108/C.2/CRP.2	Informal discussion paper (Recommendations proposed by delegations)
A/CONF.108/C.2/CRP.2/Add.1	Informal discussion paper (Recommendations proposed by delegations)
A/CONF.108/C.2/CRP.2/Add.2	Informal discussion paper (Recommendations proposed by delegations)

L. Credentials Committee

A/CONF.108/CC/1	Credentials of representatives to the Conference

M. Information documents

A/CONF.108/INF.1	List of documents
A/CONF.108/INF.2	Provisional list of participants
A/CONF.108/INF.2/Rev.1	List of participants
A/CONF.108/INF.2/Rev.1/Corr.1	List of participants

N. Background papers submitted by non-governmental organizations

A/CONF.108/NGO 1*	Food irradiation kills Out-dated technology on offer Diversion of scarce capital (International Coalition on Energy for Development)
A/CONF.108/NGO 1/Add.1*	Statement to the United Nations Conference for the Promotion of International Co-operation in the Peaceful Uses of Nuclear Energy (International Coalition on Energy for Development)
A/CONF.108/NGO 2*	The role of insurance with regard to the promotion of international co-operation in the peaceful uses of nuclear energy (European Insurance Committee)
A/CONF.108/NGO 3*	Statement to the United Nations Conference for the Promotion of International Co-operation in the Peaceful Uses of Nuclear Energy (Baha'i International Community)
A/CONF.108/NGO 4*	Utilisation of SI Units (International Council of Jewish Women; International Federation of Clinical Chemistry; International Peace Bureau; National Peace Council (UK); Soroptimist International and Zonta International)

O. Documents issued before the Conference

1. Report of the Preparatory Committee for the United Nations Conference for the Promotion of International Co-operation in the Peaceful Uses of Nuclear Energy. Official Records of the General Assembly, thirty-sixth Session, Supplement No. 48 (A/36/48)

2. Report of the Preparatory Committee for the United Nations Conference for the Promotion of International Co-operation in the Peaceful Uses of Nuclear Energy. Official Records of the General Assembly, thirty-seventh Session, Supplement No. 48 (A/37/48, Parts One and Two and A/37/48/Add.1)

3. Report of the Preparatory Committee for the United Nations Conference for the Promotion of International Co-operation in the Peaceful Uses of Nuclear Energy. Official Records of the General Assembly, thirty-ninth Session, Supplement No. 47 (A/39/47)

4. Report of the Preparatory Committee for the United Nations Conference for the Promotion of International Co-operation in the Peaceful Uses of Nuclear Energy. Official Records of the General Assembly, fortieth Session, Supplement No. 47 (A/40/47)

5. Report of the Preparatory Committee for the United Nations Conference for the Promotion of International Co-operation in the Peaceful Uses of Nuclear Energy. Official Records of the General Assembly, forty-first Session, Supplement No. 47 (A/41/47)

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* Language(s) of submission only.

** English only.

*** Documents which Committee I had before it for its consideration. (A/CONF.108/L.12 was submitted at the end of the Committee's work and was not considered by the Committee.)

Annex III

REPORTS PRESENTED TO COMMITTEE II

Abstracts of some of these reports are contained in documents A/CONF.108/C.2/REP/ABSTRACT.1 - 17 as indicated following the report.

A. Nuclear energy planning

1. Regional Co-operation - The Nordic Case, Reporter Franz Marcus. (Sweden) (ABS.2)

2. The Role of Nuclear Electricity in France: Energy and Economics. (France)

3. The Establishment of the Belgian Electro-nuclear Programme. (Belgium) (ABS.8)

4. The Role of Nuclear Power in the Energy Policy of the German Democratic Republic, by H. Kraemer, Ministerium für Kohle und Energie. (German Democratic Republic) (ABS.11)

5. The Spanish Experience in Nuclear Development, by the Ministry of Industry and Energy. (Spain) (ABS.4)

6. Co-operation among the CMEA Countries. (Council for Mutual Economic Assistance)

7. Nuclear Energy Planning: Economic and Financial Aspects. (France)

8. Model Supported Energy Planning and Technology Assessment in Developing Countries - Illustration of an Approach for Indonesia, by M. Kleemann, D. Sievert and D. Wilde, Kernforschungsanlage Jülich (KFA). (Federal Republic of Germany) (ABS.5)

9. Development of a Power Plant and Network Extension Strategy for the Republic of Indonesia - Application of a Linear Programming Energy Planning Model, by A. Lezou and M. Gattinger, Kraftwerk Union A.G. (KWU), Erlangen. (Federal Republic of Germany) (ABS.5)

10. Nuclear Energy Planning in Brazil, by M.H. Ferreira, Jr. (Brazil)

11. Egypt's Nuclear Energy Programme. (Egypt) (ABS.6)

12. Financing of Nuclear Projects: A Major Constraint for Developing Countries. (Egypt) (ABS.6)

13. The Development of Nuclear Power in China. (China)

B. Development and perspectives in the field of nuclear energy production

1. Commercial Nuclear Power Plant Technology in the Federal Republic of Germany, Experience and Outlook, by C. Goetzmann, Kraftwerk Union A.G. (KWU), Erlangen. (Federal Republic of Germany) (ABS.5)

2. The French Nuclear Power Stations: Planning and Development of Reactors. (France)

3. Developments in Advanced Light Water Designs, by D. Bunch, USDOE; J. Taylor, EPRI; and F. Sears, U.S. Utility ALWR Steering Committee. (United States) (ABS.1)

4. Nuclear Power and District Heating Plants - Effective Systems for Generating Heat and Power, by A.A. Abagyan and V.M. Boldyrev. (USSR) (ABS.12)

5. Small Power Reactors for Nuclear Heat and Power Supply to Remote Areas, by A.A. Abagyan and V.M. Boldyrev. (USSR) (ABS.12)

6. Nuclear Power in Czechoslovakia - Present Status, Future Plans and Expectations. (Czechoslovakia) (ABS.13)

7. Development and Perspectives in the Field of Nuclear Energy, by J.E. Salvatore Leme. (Brazil)

8. Peaceful Uses of Nuclear Energy in Iraq. (Iraq)

9. Prospecting and Mining Uranium: The French Experience. (France)

10. Manufacture of Nuclear Fuel Elements in Spain, by Mr. Jose Manuel Jiménez Arana, ENUSA. (Spain) (ABS.4)

11. Infrastructure for the Establishment of a Nuclear Power Production Programme, by Mr. André Caillault. (France)

12. Introduction of Nuclear Power in Finland: Establishing the Infrastructure and the Technical Expertise, by Prof. Jauho and Prof. Silvennoinen. (Finland)

13. The Criteria for a National Electro-nuclear Programme. (Belgium) (ABS.8)

14. The Response of the OECD Countries to Chernobyl: An example of International Co-operation, by H.K. Shapar, OECD Nuclear Energy Agency. (OECD)

15. Canada's Contribution to the Development of Nuclear Power Technology. (Canada) (ABS.10)

16. Unattended Nuclear System for Local Energy Supply. (Canada) (ABS.10)

17. Uranium Exploitation and Technology: Canadian Experience and Expertise, by Gordon Sims. (Canada)

C. Development and perspectives of other applications of nuclear energy

1. Radioactive Isotope and Radiation Applications in the German Democratic Republic, by J.W. Leonhardt and K.G. Wetzel, Central Institute of Isotope and Radiation Research, Leipzig Academy of Sciences. (German Democratic Republic) (ABS.11)

2. Radiation Technology - Long-term Directions for Broad Peaceful Uses of Atomic Energy, by A.S. Shtan'. (USSR) (ABS.12)

3. Application of Radiation and Isotopes. (Japan) (ABS.15)

4. Present Status, Development, and Perspectives of Other Applications of Nuclear Energy in Brazil, by Ms. L.C. de Freitas. (Brazil)

5. Development and Applications of Isotopes in China, by Mr. Li, Yesha. (China)

6. Peaceful Applications of Nuclear Energy. (Egypt) (ABS.6)

7. Overview on Radioisotope Framework and Utilization. (Canada) (ABS.10)

8. International Dose Assurance Services, Co-operation of GSF with IAEA, by Dr. D. Regulla, Gesellschaft für Strahlen- und Umweltforschung (GSF), Neuherberg/Munich and J.W. Nam, IAEA. (Federal Republic of Germany)

9. Experience in Radioisotope Production with Special Regard to Pharmaceuticals, by R. Muenze, Zentralinstitut für Kernforschung Rossendorf der Akademie der Wissenschaften der DDR. (German Democratic Republic) (ABS.11)

10. Production of Radionuclides and Ionizing Radiation Applications in Czechoslovakia. (Czechoslovakia) (ABS.13)

11. The Role of Research Reactors in the Transfer of Technology to Developing Countries, by Dr. William L. Whittemore and Robert H. Chesworth. (United States) (ABS.1)

12. The European Communities' High Flux Materials Testing Reactor (HFR) at Petten as a Model for a Successful Exploitation of a Large Research Facility, by R.J. Swanenburg de Veye, Netherlands Energy Research Foundation ECN, Petten, and M. Cundy, Joint Research Center of the European Communities, Petten. (Netherlands) (ABS.3)

13. Applications of Isotopes in the Council on Energy, the Environment and Technology (CIEMAT). (Spain) (ABS.4)

14. Research and Development in Nuclear Technology, by CIEMAT. (Spain) (ABS.4)

15. Nuclear Medicine: Past, Present and Future, by Henry N. Wagner, Jr. (United States) (ABS.1)

16. Development and Application of Nuclear Medicine in France. (France)

17. Physics and Engineering Aspects of Radiotherapy in the USSR, by A.S. Shtan'. (USSR) (ABS.12)

18. Belgian Achievements in the Use of Radiation in Medicine and Agriculture. (Belgium) (ABS.8)

19. International Food Irradiation. (United States) (ABS.1)

20. Food Irradiation - The Netherlands Experience, by J.G. van Kooy, Project Director, IFFIT, Wageningen, and P. de Klerk, Ministry of Foreign Affairs, The Hague. (Netherlands) (ABS.3)

21. Application of Atomic Energy in Italy for Food and Agricultural Development and Transfer of Available Technologies to Developing Countries: Mutation Breeding for Crop Improvement in Italy; Food Irradiation as a New Storage Perspective; and Insect Pest Control Aided by Sterile Insect Technique. (Italy)

22. The Use of Nuclear Techniques in Agriculture. (Ukrainian SSR) (ABS.12)

23. Exploitation of Nuclear Methods for Medicine, Industry and Natural Resources Inventory in a Small Country, by Prof. Hiismäki. (Finland) (ABS.16)

24. Nuclear Physics Methods of Elemental Analysis of Substances in Industry and Geology, by A.S. Shtan', All-Union Research Institute of Radiation Engineering. (USSR) (ABS.12)

25. A Contemporary Radiotracer Industrial Experiment, by K. Przewlocki and L. Petryka, Academy of Mining and Metallurgy. (Poland)

26. Report on the Co-ordinated IAEA-GSF Research Programme on the Application of Isotope Technology in Hydrology in the Latin American Countries, by H. Moser and H.P. Seiler, Gesellschaft für Strahlen- und Umweltforschung (GSF), Neuherberg/Munich. (Federal Republic of Germany) (ABS.5)

27. The Role of the French Atomic Energy Commission in Agriculture and the Agro-food Industries. (France) (ABS.9)

28. The Uses of Atomic Energy in Poland. (Poland)

29. Industrial Application of Radioactive Isotopes in Hungary. (Hungary)

D. Nuclear safety and radiological protection

1. The Federal Republic of Germany's Approach to Nuclear Safety and Recent Operating Experiences, by Prof. A. Birkhofer and Dipl.-Phys A. Jahns, Gesellschaft für Reaktorsicherheit (GRS), Cologne/Munich (Federal Republic of Germany) (ABS.5)

2. Filtered Venting of Swedish Reactor Containments, Reporter Ingmar Tirén, AB ASEA-ATOM, Västeras. (Sweden) (ABS.2)

3. A Method of Investigating Emergency Processes at Nuclear Power Plants, by V.B. Nestorenko, G.A. Sharovarov and A.G. Shashkov. (Byelorussian SSR) (ABS.12)

4. Dynamics of Emergency Processes at Nuclear Power Plants with Dissociating Coolant, by V.B. Nestorenko, G.A. Sharovarov and A.G. Shashkov. (Byelorussian SSR) (ABS.12)

5. Nuclear Security at the Spanish Nuclear Power Stations, by the Council of Nuclear Security. (Spain) (ABS.4)

6. Nuclear Safety in Austria, by Mr. Sonneck. (Austria)

7. Radiation Risk Assessment: Current Status and Future Directions, by Richard G. Cuddihy, Bruce B. Boecker, Fletcher F. Hahn, Bruce A. Muggenburg and Roger O. McClellan, Lovelace Inhalation Toxicology Research Institute, Albuquerque, New Mexico. (United States) (ABS.1)

8. Studies in Radiological Protection, by CIEMAT. (Spain) (ABS.4)

9 Radiation Protection in Brazil, by L.C. de Freitas, R.N. Alves and J.E.L. Salvatore. (Brazil)

10. Research, Education and Training in Radiation Protection in Belgium. (Belgium) (ABS.8)

11. ARGOS, A Computer Tool for Rapid Decision-Making in Case of Nuclear Emergencies, by O. Walmod-Larsen and J. Lippert, Riso National Laboratory, and John. Jensen, Danish Environmental Agency. (Denmark) (ABS.7)

12. Approaches to Light Water Reactor Safety in France, by Mr. Queniart, Institut Protection et Sureté Nucleaire (ISPN). (France)

13. Ontario Hydro's Systems Approach to Radioactive Materials Management. (Canada)

14. Basic Principles on the Limitation of Radiation Doses Supervision and Warning System, by Peter Vychytil, Ministry of Health and Environmental Protection. (Austria) (ABS.17)

15. Radiation Protection in Sweden: Principles and Practice, Reporter Jan Olof Snihs. (Sweden) (ABS.2)

E. Spent fuel and radioactive waste management

1. Issues in Radioactive Waste Management. (United States) (ABS.1)

2. Spent Fuel and Radioactive Waste Management - General Consideration and Applications in Sweden, Reporter Sten Bjurström (Sweden) (ABS.2)

3. Transfer of Knowledge and Technology Based on the French System of Waste Management, by Mr. Marque. (France) (ABS.9)

4. Organizing Nuclear Waste Management - the Swedish Approach, Reporter Olof Söderberg. (Sweden) (ABS.2)

5. Radioactive Waste Management, by Mr. Krejsa. (Austria)

6. Collection of Low-level Radioactive Wastes. (France)

7. Treatment and Management of Radioactive Wastes in Belgium. (Belgium) (ABS.8)

8. Encasing Wastes in Thermo-hardening Resins, by Mr. de Buzonniere. (France)

9. The Establishment of Radioactive Effluent Processing Plants for Nuclear Power Stations, by Mr. de Buzonniere. (France)

10. Management of Radioactive Wastes in Spain: Planning and Implementation, by ENRESA. (Spain) (ABS.4)

11. SYNROC: Second Generation Immobilisation of Radwaste, by D. Coleby. (Australia) (ABS.14)

12. Decommissioning and Dismantling Nuclear Installations: A French Experiment, by Mr. Cregut, Commissariat à l'Energie Atomique (CEA). (France)

F. Practices and experiences in legal, administrative and regulatory aspects

1. The Role of Nuclear Safety Standards, Procedures for Development and Possibilities of International Harmonization, by Dr. W. Schwarzer, Gesellschaft für Reaktorsicherheit (GRS), Cologne/Munich. (Federal Republic of Germany) (ABS.5)

2. French Administrative Practice in Nuclear Safety: Principles, Organization, Experience and Recent Developments. (France)

3. Government Control of Atomic Safety and Radiation Protection in the German Democratic Republic, by D. Richter, Staatliches Amt für Atomsicherheit und Strahlenschutz der DDR, Berlin. (German Democratic Republic) (ABS.11)

4. The Regulatory Institution of Mexico, by J. Abud, CNSNS. (Mexico)

5. The Regulatory System of Nuclear Activities in Spain, by the Consejo de Seguridad Nuclear. (Spain)

6. Belgian Regulations for Class 1 Nuclear Installations. (Belgium) (ABS.8)

7. Nuclear Safety and Reactor Experience in Sweden, Reporter, Olof Hörmander. (Sweden) (ABS.2)

8. Legal, Administrative and Regulatory Aspects of Nuclear Energy in Brazil, by B.C. Pontes and J.E.L. Salvatore. (Brazil)

9. Nuclear Safety Supervision in China, by Ms. Qian, Jingjing. (China)

10. Current Insights on the Risks Associated with U.S. Light Water Reactors, by Mr. Mark Cunningham, U.S. Nuclear Regulatory Commission. (United States)

11. International Co-operation in Reactor Incidents, by James Taylor, U.S. Nuclear Regulatory Commission. (United States)

12. The Canadian Approach to Nuclear Power Safety, by Gordon Sims. (Canada)

13. Role of the Regulatory Authority in Assuring Nuclear Safety, by Chairman Lando Zech, U.S. Nuclear Regulatory Commission. (United States)

G. Personnel training

1. Staff Training in Electricity Generating Stations. (France)

2. Education and Training in the Safe and Economic Use of Atomic Energy in the German Democratic Republic, by M. Steurer and W. Rehak, Staatliches Amt für Atomsicherheit und Strahlenschutz der DDR, Berlin. (German Democratic Republic) (ABS.11)

3. Manpower Training in Brazil, by B.C. Pontes. (Brazil)

4. Some Pitfalls in the Manning and Training of a Nuclear Power Plant Staff. (United States) (ABS.1)

Annex IV

PROPOSED RECOMMENDATIONS TRANSMITTED BY COMMITTEE II TO COMMITTEE I, WHICH TRANSMITTED THEM TO THE PLENARY OF THE CONFERENCE

1. During the discussions in Committee II, a number of proposals and recommendations were made pertaining to ways and means for promoting international co-operation in the peaceful uses of nuclear energy. In accordance with section II of the Preparatory Committee's Working Paper on Proposed Procedures and Topics for the Work of Committee II (A/CONF.108/WP.4), which was adopted by the Conference, the Committee agreed to transmit these recommendations to Committee I. The transmittal note is contained in document A/CONF.108/C.2/2. Committee I referred the recommendations to the Plenary without having had the opportunity to discuss them. The recommendations were transmitted to Committee I and to the Plenary in the same form in which they were submitted to Committee II, with an indication of the delegations which proposed them.

A. Nuclear energy planning

Economic and financial aspects

2. The build-operate-transfer (BOT) model proposed by Turkey offers an alternative solution to financing nuclear power projects in developing countries, leading to new marketing possibilities for the nuclear manufacturing industries. Such a model deserves serious consideration as a possible solution to the complex problems of international financing. (Turkey)

3. It was suggested that countries seeking financing for nuclear power projects might facilitate such financing by certain actions: (a) creation of a dedicated fund for the domestic portion of the required financing as a demonstration of commitment; (b) have all of the required permits, authorizations, licences, etc. for the complete project, since delays in such areas are costly; and (c) ensure that the electricity is sold at a price that covers production costs and allows loan repayments. (United States)

4. The difficulties in financing nuclear power projects would be greatly alleviated by improvement in the present conditions of OECD consensus, including, primarily, reduction in interest rates through recovery of the additional one per cent for nuclear power projects; longer repayment periods and more flexible grace periods; mixing of soft loans with export credits; use of aid grants in nuclear projects to cover infrastructure training; grid connections and other affiliated services. (Egypt)

Computer models for energy planning

5. The WASP computer energy planning program, which can be used on personal computers, has been used in some countries as a basic technique for nuclear power system expansion planning. These countries could share their experiences with other countries which are not yet using such models, perhaps by way of the IAEA/RCA. (Republic of Korea)

Regional co-operation

6. International organizations should assist regional groups of countries to set up joint industrial ventures relating to nuclear power generation to reduce the outflow of hard currencies abroad. (Iraq)

7. The connection of electrical grids in neighbouring countries should be encouraged in order to allow higher capacity power systems. (Iraq)

8. The experience of the Nordic countries indicates that research and development efforts are essential to the development of nuclear energy, and these efforts need to be shared. In fulfilling this need for developing countries, IAEA can play a pivotal role in the exchange and transfer of the necessary technical and scientific information, as well as in promoting and co-ordinating joint research and development projects. (India)

9. The interconnection of electrical grids between neighbouring countries can contribute to the peaceful uses of nuclear energy and needs to be encouraged. The potential benefits of such interconnections for the countries involved may include making nuclear power plants economically and technically feasible, eliminating certain constraints in siting, and reducing the optimum level of reserve capacity and therefore optimising capital investment. (Republic of Korea)

B. Development and perspectives in the field of nuclear energy production

Reactor design and development

10. Effective efforts should be made by the IAEA to develop small and medium-sized reactors at low cost for small grids in developing countries. (Iraq)

11. The promotion of standardization of nuclear power reactors, wherever possible, is necessary to reduce construction time and capital cost. (Iraq)

12. Many developing countries would prefer to have small or medium power reactors due to limitations of their grid capacities and other infrastructural constraints. The IAEA study on this subject has indicated a demand for such reactors in developing countries. Reports indicate that small and medium power reactors can be designed within required safety levels and without major financial penalty. The commercial development of small and medium power reactors should therefore be supported. (India)

13. International co-operation is important towards improving the present type of reactor systems in their performance and level of safety, on a continuous basis. Also, study of new fuel cycles should be undertaken for better utilization of resources and improving fuel cycle efficiency. This can be achieved through IAEA by conducting technical meetings and co-ordinated research projects, and through exchange of technical information. (India)

Infrastructure for support of nuclear energy

14. Suppliers of nuclear power systems should involve the local industries and scientists of the recipient country concerning reactor design and construction, bearing in mind the philosophy of technology transfer to developing countries, and helping them to develop their infrastructure for safe operation and maintenance of such systems as well as for research and development. (Islamic Republic of Iran)

15. For long-term development of nuclear energy in developing countries, effective participation of local industries is essential. This is particularly important for resolving day-to-day operations and maintenance problems. Furthermore, such participation provides a technical base and infrastructure for safe operation of nuclear power plants and for adoption of new developments. The confidence generated by such participation will stimulate growth in nuclear energy and expansion in international trade in the nuclear industry, and at the same time help in overcoming the constraint of balance of payments faced by developing countries, International co-operation for the transfer of technology will be beneficial to both developing and developed countries and should therefore be supported. (India)

C. Development and perspectives of other applications of nuclear energy

General

16. Most countries have on-going programmes for use of nuclear energy in applications such as the use of isotopes and radiation in agriculture, industry, health and medicine, hydrology, etc. The level of the programmes varies in different countries. However, it is a well established fact that use of nuclear energy in other applications has made and could continue to make a greater degree of impact on the social and economic development of mankind. Some of the developing countries have been facing difficulties in procuring and maintaining the latest equipment. Equally important is the training of manpower for effective application of the various techniques now being developed. These aspects should be given consideration for international co-operation. (India)

17. The acquisition of spare parts, equipment and materials for peaceful applications of nuclear energy should be facilitated. (Brazil)

18. Suppliers of facilities for peaceful uses of nuclear energy should provide sufficient information and manpower training to allow the recipient country to acquire full knowledge and expertise for the safe and efficient operation and maintenance of the supplied facilities, within the guarantee time. (Islamic Republic of Iran)

19. The IAEA, in co-operation with experienced countries, should initiate a programme for collecting, evaluating and disseminating the quantitative results of these applications, indicating the scope of the economic benefits that the developing countries can derive from these applications. Such a programme would provide encouragement for research institutes and related decision-making organs in developing countries. The scope of support for these activities should be expanded accordingly through the IAEA's usual budgetary processes. (Turkey)

20. While developing nuclear power, the international community should also give attention to the development and application of isotopes and radiation technology. Experiences show that isotopes and radiation technology have applications at all stages of economic development in all countries. In comparison to nuclear power, these technologies have wider applications and greater adaptability, require less capital and offer faster results, and hence can play an important role in a country's economic and social progress. Therefore, it is recommended that international co-operation, both multilateral and bilateral, in this field should be further strengthened by such means as co-operative projects, exchange of scientific information and provision of training courses and fellowships. (China)

21. In promoting technical co-operation in the field of other applications of nuclear energy, due consideration should be paid to the importance of manpower training with a view to developing the infrastructures of the developing countries. (Japan)

Research and development

22. Research reactors can serve an important role in the training of personnel in different areas of science and technology, and can provide a base for the peaceful utilization of nuclear energy. Along with this, considerable manpower with basic science and engineering background, and with suitable orientation, is required for design, safety analysis, construction and operation of nuclear power plants. International co-operation in the training of manpower should cover all these aspects. (India)

23. Nuclear research centres in developing countries play a great part in the training of indigenous specialists and in the use of nuclear energy for those countries' economic and social development. Serious attention should be given to the creation of such centres. (USSR)

Health and medicine

24. Newly-emerging technologies in the field of nuclear medicine promise continued progress in diagnostic and therapeutic techniques. International co-operation in this field will be necessary in order to enable all States to realize the fullest potential of these techniques. States therefore should ensure that they have in place an appropriate infrastructure to permit utilization of these new techniques. (United States)

Food and agriculture

25. The IAEA should give more effort to making available information on food irradiation, with particular regard to the problem of public acceptance. There is a need for rapid international action on irradiated food, in particular on labeling requirements. The IAEA should assist countries in developing regulations relating to irradiated food and in analyzing irradiated products. It was noted the the IAEA and the FAO were jointly studying the question of irradiated food. (Colombia)

26. The IAEA/FAO/WHO should accelerate their initiative on food irradiation, covering labeling agreements, national regulations, development of measurement capabilities, and provision of advice on the economic impact of these techniques and the viability of investments in food irradiation facilities. (Turkey)

27. Good progress has been achieved in the application of tracer techniques in soil science, fertilizer utilization programmes and irrigation studies. Further development should be encouraged by the IAEA. (German Democratic Republic)

28. Governments should adopt and implement the United Nations Codex Alimentarius Commission (CODEX) General Standards for irradiated foods. This will facilitate broad clearance of irradiation of food treated in accordance with the CODEX General Standard; the CODEX recommended international code of practice for the operation of radiation facilities for the treatment of food, and all other codes of practice applicable to specific commodities. The adoption and implementation of the CODEX standards will encourage international agricultural commerce as well as provide safer and more secure food supply for the world. (United States)

Industry and earth science

29. Radiometric gauging and radiotracer technology in industrial process control and optimization have reached a high standard. The benefit-cost ratio is more than 10:1. Information and technology exchange in this area should be encouraged by the IAEA. (German Democratic Republic)

D. Nuclear safety and radiological protection

Safety of nuclear installations

30. Suppliers of nuclear power systems should provide relevant information on nuclear safety for the supplied facilities, regarding the design in particular, on a continuing and assured basis to the recipient. (Islamic Republic of Iran)

31. A nuclear incident anywhere in the world has the potential for global repercussions. In addition to the health and safety effects, such incidents can have an impact on the nuclear power programmes of all countries. An important factor for safe operation of nuclear reactors is the input from safety research, which requires highly trained personnel and specialized equipment. Many countries and international organizations are conducting safety studies which are of common interest. Sharing of safety research data could go a long way to ensuring the safe operation of nuclear power plants and in improving the level of safety. International co-operation in this area is essential. (India)

32. International co-operation in the area of nuclear safety should be increased, particularly in relation to the design, construction and operation of nuclear power plants and other peaceful nuclear applications. (Argentina, Brazil and Colombia)

33. The safety of nuclear power plants should be continuously improved in accordance with present technical standards. The IAEA safety regulations should be taken as the general recommendations. (German Democratic Republic)

34. To promote plant safety and performance, the IAEA should facilitate exchange and training of operators in co-ordination with the OSART programme. (Sweden)

35. The IAEA Incident Reporting System should be strengthened through more extensive reporting. (Sweden)

36. Recognizing the great importance of the international Convention on Early Notification of a Nuclear Accident and the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency, States that are not parties to those instruments are urged to adhere to them as soon as possible. (USSR)

37. The IAEA should give special emphasis in its nuclear-related activity to the development of nuclear power reactors with a higher level of safety. (USSR)

38. States are urged to ensure appropriate physical protection of nuclear materials and facilities in their nuclear activities. (USSR)

39. International efforts should be undertaken with a view to devising a reliable system of measures for the prevention of nuclear terrorism in all its forms and for co-operation among States in that important matter. (USSR)

Radiological protection

40. The minimization of collective and cumulative radiological exposure of the general population, to which medical diagnostic radiation makes a large contribution, is the responsibility of each country, a responsibility that is generally in the hands of Secondary Standards Dosimetry Laboratories. The IAEA-WHO-SSDL network is a good model of international co-operation. It is recommended that the role of SSDLs be extended to include, in their metrological efforts, other aspects of therapy such as beta applications, brachytherapy sources, low energy and ortho-voltage X-rays, radiodiagnosis, radiation protection in general, including individual, occupational and environmental protection, and high-level dosimetry for industrial irradiation processing. The SSDLs could also serve as reference centres of expertise on radiation protection relating to the applications of nuclear energy. (Argentina, Brazil and Colombia)

41. There is a need for greater international co-operation relating to the measurement of radioisotope contamination of food and to agreement on acceptable levels, leading, for example, to better conditions for international trade. (Argentina, Brazil and Colombia)

42. International co-operation for the development of radiological standards for environmental control should be promoted. (Argentina, Brazil and Colombia)

43. Assistance in establishing nuclear applications should be combined with a strengthening of radiation protection. (Sweden)

Emergency planning and preparedness

44. Considering that radiological effects from nuclear accidents can have a direct impact on neighbouring countries, the establishment of regional nuclear preparedness systems could be encouraged to facilitate exchange of information and technical support among regional groups of countries. (Republic of Korea)

45. The IAEA should assist member States by organizing reviews of emergency preparedness systems at and outside nuclear sites by means of a system of advisory teams. Furthermore, the IAEA should initiate studies of management of short- and long-term consequences of a nuclear accident in order to establish commonly shared concepts. The results could form the basis for appropriate further development of national emergency preparedness systems. (Sweden)

E. Spent fuel and radioactive waste management

Radioactive waste disposal

46. A well-engineered programme for waste management, appropriate to the nuclear energy utilization programme, would enhance public confidence and acceptance of nuclear energy, and to achieve this, extensive co-operation in this field at the international level is essential. (India)

47. States using nuclear energy for peaceful purposes for either power or non-power applications should include, early in the planning cycle, consideration for handling the radioactive wastes generated from the activities. The planning, development, construction and monitoring of facilities used for handling the wastes should have equal priority with the development of the prime activity. (United States)

48. Plans for handling radioactive wastes should seek to address long-term or permanent solutions that assure a safe environment. (United States)

49. The IAEA should, in collaboration with other international organizations, establish radiation protection criteria for disposal of high-level waste, including requirements and methods to demonstrate compliance with them. (Sweden)

F. Practices and experiences in legal, administrative and regulatory aspects

Nuclear regulations and safety standards

50. States engaged in the peaceful utilization of nuclear material and other radioactive material should establish systems for the accounting and control of this material in order to contribute to the detection of possible losses or unauthorized use or removal of such materials, and to contribute to the effective application of IAEA safeguards pursuant to the provisions of agreements between States and the IAEA. (United States)

51. States engaged in civil nuclear energy programmes should establish systems for the physical protection of nuclear material to prevent unauthorized use and handling of these materials. (United States)

52. States should co-operate to establish, in conformity with the national law of each State, effective measures for the physical protection of nuclear material. (United States)

53. States should make (and regularly review) the domestic laws, regulations, or other measures necessary to ensure adequate physical protection in accordance with international guidelines. (United States)

54. States should make (and regularly review) the domestic laws, regulations, or other measures necessary to ensure an effective system for accounting and control of nuclear and radioactive material. (United States)

55. In accordance with States' IAEA safeguards agreements, all States should facilitate the application of safeguards and co-operate with the Agency to that end. (United States)

56. General safety principles should be developed by the IAEA and be adopted by IAEA member States as internationally accepted principles. (Sweden)

57. The advisory function of the NUSS Codes and guides, as reviewed and supplemented, should be maintained so that they can be voluntarily accepted as a background for national safety systems and regulations. (Sweden)

58. The IAEA, in co-operation with other international organizations, should arrange an international meeting of nuclear regulators in order to review regulatory principles and methods and to discuss possible ways of propagating good practice. (Sweden)

G. Manpower training

59. International assistance is essential for creating new regional training programmes and expanding existing programmes. It is important that the subjects of training be specifically related to regional needs, including such topics as reactor operations, waste management, uranium prospecting, fuel fabrication, radioisotope production, regulatory arrangements and non-destructive testing. (Iraq)

60. International technical and financial support should be given to designated national and regional centres for training in the applications of nuclear techniques in food and agriculture, health and medicine, hydrology, industry and oil exploration and to facilitate the transfer of technology in those fields. (Iraq)

61. An international mechanism is needed to facilitate the exchange of scientific and technical information at regional and international levels. (Iraq)

62. States developing peaceful nuclear use technologies should ensure the availability of adequately trained manpower necessary to provide healthy and safe utilization. In this connection, such States should provide supporting nuclear safety regulatory and inspection activities as well as environmental protection activities. States should also continue to avail themselves of the full range of training opportunities that are available throughout the world. (United States)

63. Developing States should take advantage, to the extent possible, of the existing national and international training programmes, including universities, training courses, etc. However, the State should develop supporting national training programmes required to assure an adequately skilled manpower base. (United States)

64. The development of technical assistance from IAEA in nuclear sciences for the under-developed countries, should be done in consecutive steps or different levels, to achieve better results and optimize its effects:

(a) Countries without any nuclear infrastructure
Simple counting equipment, introduction of techniques, with tracers, fellowships, experts;
(b) Countries with infrastructure (a) consolidated
Sophisticated equipment for more advanced techniques such as X-ray fluorescence, Mossbauer spectrometry, low-level counting system, etc., fellowships, national courses, regional courses;
(c) Countries with infrastructure (b) consolidated
Major nuclear facility, like small accelerator, etc., fellowships, national and regional courses, co-ordinated research programmes. (Paraguay)

65. Safe operations of nuclear reactors as identified by most speakers demand highly skilled personnel and a comprehensive training programme. In view of the desire of developing countries to harness the energy of the atomic nucleus for peaceful purposes, there is need to enhance, through the IAEA and other relevant bodies, the development of domestic technical capabilities in the various stages of nuclear power development by means of well articulated research and development support, ease of access to cognate technology and assurance of supply of relevant materials and equipment. (Nigeria)

H. Other matters

66. An international agreement should be reached at the earliest possible time to prevent attacks on peaceful nuclear installations and facilities. (Iraq)

67. Given the importance of the peaceful uses of nuclear energy to social and economic development, all States should undertake to do everything in their power to dissipate doubts, allay concerns, and provide information to their publics for promoting better public understanding of nuclear energy. Such efforts should include dissemination of reliable information on the resolution of environmental and safety problems, as well as issues of quality assurance and physical security. (United States)

Notes

1/ General Assembly resolutions 33/4 of 2 November 1978 and 34/63 of 29 November 1979.

2/ Initially, 54 States were appointed by the President of the General Assembly as members of the Preparatory Committee. By March 1983, the Committee had 66 members.

3/ Official Records of the General Assembly, Thirty-sixth session, Supplement No.48 (A/36/48).

4/ Ibid., Thirty-seventh session, Supplement No.48 (A/37/48), Part One.

5/ Ibid., Part Two.

6/ Ibid., Thirty-seventh session, Supplement No.48A (A/37/48/Add.1).

7/ For the text of item 5, see chapter III, para. 28.

8/ Official Records of the General Assembly, Thirty-ninth session, Supplement No.47 (A/39/47).

9/ The reports of the expert group meetings were submitted to the Conference in documents A/CONF.108/REX/1 to 5.

10/ Official Records of the General Assembly, Fortieth session, Supplement No.47 (A/40/47).

11/ Ibid., Forty-first session, Supplement No.47 (A/41/47).

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