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### RECORD OF THE ONE HUNDRED AND EIGHTIETH PLENARY MEETING

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President: Mr. FELICKI (Poland)

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\*\* GC(XIX)/559.

**THE RECORD**GENERAL DEBATE AND REPORT FOR 1974-75  
(GC(XIX)/544, 544/Corr. 1, 554) (continued)

1. Mr. KHAN (Pakistan) said that the present session of the General Conference marked the 20th anniversary of the first Geneva Conference on the Peaceful Uses of Atomic Energy which had raised tremendous expectations and hopes for all mankind with regard to the potential benefits of peaceful uses of atomic energy. Although those expectations had proved to be excessive, his delegation believed that remarkable progress had been made in the development of atomic energy, which today offered a real economic alternative for meeting growing energy needs and without which there would have been no viable means of responding to the energy crisis. In spite of that, however, the future pace of development of nuclear energy in the world and consequently the expansion of the Agency's programme was clouded by certain difficulties which must be recognized and overcome. The basic issues to be contended with included international concern about environmental impact of nuclear energy, moral indignation over the potential misuse of nuclear energy, growing difficulties in international trade and commerce for nuclear plants and equipment, and the effect of all those factors on developing countries.

2. Considerable fears had been expressed recently in several advanced countries about the possible adverse effects on the environment and on public safety of expanding nuclear power programmes. It had become a political issue in some countries and voices were being raised in an effort not only to limit the installation of new power reactors, but to discourage their export. As a result of that generally unfair criticism, the responsible leaders and scientists in advanced countries had been compelled to speak out forcefully in the defence of nuclear energy which, indeed, offered the safest and cleanest way of meeting the growing energy needs throughout the world. Pakistan was happy to note that opinions in favour of nuclear power were reasserting themselves in most countries.

3. The Agency should play an increasingly important role in creating better understanding of nuclear power by the public at large, and the expansion of its activities in the field of nuclear safety and environmental protection was welcome. In his delegation's opinion, the Agency was the proper organization for making a realistic and well-informed appraisal of the environmental and safety aspects of nuclear energy. The energy crisis had deeply affected the economies of the developing countries that lacked indigenous supplies of fossil fuels; they were in desperate need of low-cost energy to meet their growing requirements for industrial power, and nuclear power was the most economical and viable source for them. However, in addition to chronic shortage of funds to finance capital-intensive nuclear plants, lack of trained manpower and industrial infrastructure and technology, those developing countries were facing further difficulties as a result of more

stringent and sometimes unreasonable conditions which the advanced countries were placing on the supply of nuclear plants, materials, technical know-how and information. That meant that the developing countries were suffering from pressure from two sides. They could not afford to import high-cost fossil fuels and found it increasingly difficult to purchase nuclear power plant facilities without compromising their sovereign rights to develop indigenous technology in the future; in fact, some of them were being compelled to revise existing agreements and treaties. That was likely seriously to jeopardize their economic progress and development.

4. The major factor which had led to that hardening of attitude on the part of the advanced countries was the underground nuclear explosion carried out by India in May 1974, which had cast doubts on the good faith and intentions of all developing countries. That was very unfortunate. Instead of taking appropriate measures against violations by the country concerned, the advanced countries as a group were imposing collective punishment on all developing countries. They seemed to have got hold of a perfect excuse to put additional restrictions on the supply of plants, materials and technical know-how to all developing countries irrespective of whether they accepted Agency safeguards or were parties to multi-national or regional treaties prohibiting the proliferation of nuclear weapons. It was a fact that the event of May 1974 had done incalculable harm to all developing countries and even to the very cause of nuclear energy throughout the world.

5. Even though Pakistan had not been given an opportunity to attend the Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons (NPT Review Conference)[1] as an observer in a meaningful way, it had studied the published proceedings with great interest. It was for the parties to the Treaty to judge the outcome of that Conference and whether or not the frustrations expressed at the final results were justified or not. But Pakistan welcomed any effective measures to stop the further spread of nuclear weapons and to strengthen the security of non-nuclear-weapon States. It fully recognized the reality of the existence of five nuclear Powers which had global responsibilities for the maintenance of world peace. However, it believed that any attempt to enlarge that group directly or indirectly, openly or tacitly, was fraught with grave peril. If there was a sixth, seventh or eighth nuclear-weapon State, it would be impossible to stop the resulting chain reaction. Pakistan, for its part, firmly believed in the principle of non-proliferation as a matter of policy. It had placed all its nuclear facilities under Agency safeguards. It had consistently advocated the establishment of nuclear-free zones, and had been encouraged that the concept of a nuclear-free zone

[1] Held at Geneva from 5 to 30 May 1975. The text of the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) is reproduced in document INFCIRC/140.

in South Asia had been endorsed by the General Assembly of the United Nations the previous year. A nuclear-free zone could help to reduce regional tensions, improve the prospect of peace and give the poorer countries in the region a greater sense of security so that they could concentrate on solving the more pressing problems of poverty and economic development.

6. Pakistan also urged the super Powers to act more quickly to reduce the dangerous escalation caused by continuing vertical proliferation, so that they could exercise moral leadership to prevent horizontal proliferation. They should also provide non-nuclear-weapon States which accepted international safeguards with the minimum essential security assurances and guarantees against nuclear threats or attack from any quarter.

7. Recently the supplier countries had held not-so-secret meetings to devise means for placing additional restrictions and controls on the transfer of equipment, materials and information to the developing countries for their peaceful nuclear programmes. Those new conditions, which went well beyond the NPT and other obligations, affected all developing countries whether or not they were party to NPT and had accepted Agency safeguards. They were bound to create serious misunderstanding between the supplier States and the developing countries with peaceful nuclear energy programmes. Though well meant, those restrictions could be misused and might open yet another avenue for exploitation and obstructing the development of indigenous industrial technologies in the developing countries. Those countries were bound to view them in the context of the overall picture of transfer of technology for economic development. Already enough tension existed between the developing and advanced countries on the supply of raw materials, terms of trade, requirements for development aid, and that new potential source of conflict should be avoided.

8. Before the situation worsened and misunderstandings multiplied, his delegation proposed that a meeting should be held of supplier and recipient States representing all interested Member States of the Agency to open a dialogue and reach an understanding on all issues, including any revision of Agency and other safeguards on equipment and materials, and to resolve the difficult question of safeguarding technical information and know-how. His delegation was against revising safeguards in a piecemeal fashion through setting up precedents under bilateral arrangements and then using resulting agreements as models. All the relevant issues should be thrashed out through consultation and open discussion between the groups concerned.

9. Turning then to the Agency's programme, he said that nuclear power more than before had become of crucial economic importance to the developing countries. His delegation welcomed the increase of 31.5% in the Agency's activities related to nuclear power. It endorsed the activities connected with the exchange of information on operating experience with nuclear power plants, the nuclear power market survey in developing

countries and the efforts being made by the Agency to encourage the suppliers of and customers for small- and medium-power reactors to reach some understanding on the size, type and availability of such plants. It felt that training of manpower for nuclear power plants held the key to the successful implementation of nuclear power projects. The courses being arranged by the Agency with the co-operation of the Federal Republic of Germany, France, the United States of America and other advanced countries were a positive step. Pakistan was in the process of establishing a nuclear power training centre for training nuclear power plant engineers, operators and technicians and would be happy to host such a course in Pakistan in co-operation with the Agency.

10. Availability of adequate and assured long-term supplies of uranium at a reasonable cost for future nuclear power plants in the world was essential before long-range plans for nuclear capacity could be made. During the last two years uranium prices had risen by a factor of three, which reflected the tightening of supplies and uncertainties about the future. Within the next 20 years the existing proven resources of uranium must be increased by a factor of four. At present nearly all the known resources of uranium were located in a few advanced countries, but vast unexplored potential existed in the developing countries. The Agency should, in the interest of both the advanced and developing countries, step up its assistance for uranium prospection in the developing Member States so as to help increase the world's supplies of uranium and keep the prices within reasonable limits.

11. As was recognized in the Agency's programme, world food production was not increasing in step with population growth, and crop failures and other national disasters had resulted in a reduction of food stocks to a level lower than at any time in recent history. His delegation was, therefore, unhappy that in spite of that, the Agency was planning only a negligible increase of 2.1% in its programme in food and agriculture, which was certainly not commensurate with the needs. His delegation would like the Agency to take a new initiative in consultation with the Food and Agriculture Organization of the United Nations (FAO) and launch a comprehensive programme for applying nuclear radiation techniques for increasing agricultural production and preservation of food grains in the developing countries.

12. Pakistan commended the achievements of the International Centre for Theoretical Physics at Trieste which had achieved a place of esteem in the scientific community, had offered excellent training opportunities to scientists from the developing countries and had served as a meeting place for scientists from the East and the West. It hoped that the recent recommendations regarding the next six years' programme of the Centre made by the group of distinguished scientists set up by the Agency and the United Nations Educational, Scientific and Cultural Organization (UNESCO) would be accepted.

13. Pakistan was one of the few developing countries which, because of a serious shortage of indigenous fossil fuel, had no other practical choice but to turn rapidly to nuclear energy for meeting its electric power requirements. That was why it had launched its first nuclear power project based on a CANDU reactor ten years previously with the co-operation of Canada. That power reactor at Karachi had already generated more than 1600 million kW hours during the last three years of satisfactory operation. The long-range planning study for nuclear power conducted with the help of the Agency indicated a requirement of 20 nuclear power plants in Pakistan over the next 25 years. It was planned to start with a 600-MW plant for which tenders would be invited soon.

14. Surveys of nuclear mineral resources had shown that Pakistan was potentially rich in uranium, thorium and other important nuclear minerals. Uranium prospecting was being intensified and it was hoped to meet future requirements through local production.

15. Application of nuclear radiation and nuclear techniques in agriculture occupied a prominent place in Pakistan's programme. At its two atomic energy centres devoted to agriculture and biology, better yielding and early maturing varieties of wheat, rice and cotton had been developed through radiation and those were of considerable economic significance to the country.

16. In the field of nuclear medicine Pakistan had completed its fifth nuclear medical centre, the Institute of Radiation Therapy and Nuclear Medicine, at Peshawar. The construction of a sixth centre of the same type had commenced the previous year. The nuclear medical centres had so far treated more than 20 000 patients.

17. Mr. KATORI (Japan) said that, with the advance of science and technology, the use of atomic energy for peaceful purposes was spreading into new fields, and was expected to contribute further to the promotion of the welfare of mankind. The rapid growth in the demand for energy and the 1974 oil crisis had brought recognition of the immeasurable value of nuclear power as a source of energy, and of the importance of further developing its potentialities and use. Among the varied technology-intensive sources, it was only nuclear energy that could meet the qualitative and quantitative conditions required of a long-term source of energy supply. Indeed, the future of mankind depended on the successful implementation of nuclear energy development programmes.

18. The Agency's active work in such important areas as safety and environmental protection - a more serious problem nowadays because of the progress made in development and utilization of nuclear power, technical assistance to distribute more widely the benefits obtainable from peaceful uses of nuclear energy, and effective implementation of safeguards to prevent possible diversion for military purposes, all enjoyed his country's active support. The role of the Agency in solving the

problems involved would become increasingly important, and it was a basic tenet of Japan's policy to strengthen co-operation with the Agency for the promotion of the peaceful uses of nuclear energy.

19. In view of recent trends, international co-operation for the prevention of further proliferation of nuclear weapons needed to be promoted more intensively. In that regard, his country, which recognized the importance of NPT as an instrument for world peace, welcomed the reaffirming by the NPT Review Conference of the vital role of the Treaty in international efforts to avert further proliferation of nuclear weapons, to achieve the cessation of the nuclear arms race and to undertake effective measures in the direction of nuclear disarmament, and to promote co-operation in the peaceful uses of nuclear energy under adequate safeguards. His Government, which had submitted the Treaty to the Diet for ratification in April 1975, was desirous of ratifying NPT as soon as possible in line with its desire to participate in international efforts for prevention of the proliferation of nuclear weapons.

20. One of the most important factors in promoting peaceful uses of nuclear energy was to ensure the effective and smooth implementation of the Agency's safeguards. That concept had been strongly supported at the NPT Review Conference, and his delegation welcomed the efforts being made to improve the Agency's safeguards system, in particular the setting up of a standing advisory group on safeguards implementation.

21. It was gratifying that the number of countries concluding safeguards agreements with the Agency in connection with NPT was increasing. In order, however, to obtain a more universal system, the inequality in the application of safeguards in connection with NPT as between the non-nuclear-weapon States and the nuclear-weapon States needed to be removed. In his Government's view, all nuclear-weapon States should be ready to accept the application of safeguards to all their peaceful nuclear facilities. In that context, it was commendable that the United States of America and the United Kingdom were approaching agreement with the Agency for the voluntary submission of some of their peaceful nuclear facilities to Agency safeguards. It was essential that the remainder should follow that example.

22. It was of interest for many countries to have information on potential benefits obtainable from peaceful nuclear explosions (PNE). He therefore noted with satisfaction the establishment of the Ad Hoc Advisory Group on Nuclear Explosions for Peaceful Purposes which was soon to begin work. The technology involved was still in the research and development stage, and, in addition, many legal issues remained to be resolved. It was to be hoped that Members which had already started research in the area in question would furnish the results obtained and that the work of the Advisory Group would progress smoothly.

23. Over the past few years, the matter of physical protection of nuclear material had become

of greater common interest throughout the world. And he noted with great pleasure that the NPT Review Conference had urged the Agency to continue its work on the formulation of specific recommendations designed to improve protection. It was therefore to be hoped that the Agency would make further fruitful efforts in that field.

24. As the NPT Review Conference had confirmed, nuclear energy was playing an important role in electricity generation and was contributing steadily toward elimination of the economic and technical differences between the developed and the developing countries. He found it encouraging that a greater number of developing countries were seeking to participate in the Agency. In the circumstances, the Agency's technical assistance programme for developing countries was taking on added importance, and his country highly appreciated the proposed increase in such activities. In support of the programme, Japan had increased its contribution to the General Fund each year at a rapid rate, and the amount pledged for 1975 came high on the list. He was happy to announce that his Government was prepared to contribute to the General Fund for 1976 in accordance with Japan's assessed rate. In addition, Japan had held various training courses, seminars and panels and had provided experts and received trainees under Agency fellowships; it would like to continue assistance activities of the kind in the future.

25. With reference to the Agency's draft budget for 1976, he noted that assessed contributions on Member States under the Regular Budget were to increase by nearly 30% as compared with 1975[2]. Admittedly, because of the world-wide inflation, expenditure on administration had also been increasing. Like many other countries, however, Japan was experiencing the most severe economic depression for 30 years, so that its financial position was in difficult straits. Despite that situation, his Government would co-operate in accepting the draft budget for 1976. But if the Agency's budget continued to increase at such a high rate in the future, the resulting financial burden would be very heavy for its Members. He consequently hoped that the Secretariat would do its utmost to ensure more effective use of budgetary funds and to halt sharp increases in the future.

26. Japan found nuclear energy a most promising alternative to oil as a source of energy and it was part of its basic policy to expand nuclear power generation rapidly to cope with the increasing demand for electricity. At present, a total of eight atomic power reactors were in commercial operation, with a total generating power of about 3890 MW. In addition, another 19 reactors with an aggregate output of 16 000 MW were either under construction or at the advanced planning stage. As a result of the present severe economic depression, the demand for nuclear energy was now expected to be around 49 000 MW in 1985, as compared with the previous estimated output of

60 000 MW for the same year. The anticipation now was that that scale would be reached two years later. The proportion of nuclear power in relation to total power generation was expected to increase from 2.4% in 1973 to 34.4% in 1985. The current programme had been aimed at putting fast-breeder reactors and reprocessing plants into practical use. Thus far, the fast-breeder reactor had been subjected to various tests, and was expected to become critical in 1976. As for the pilot reprocessing plant, test operation had been started. Construction of the prototype advanced thermal reactor was in progress; it was expected to become critical in 1977.

27. Nowadays it was not possible to develop and utilize nuclear power without public acceptance and proper measures to ensure the safety of power stations and protection of the environment through, e.g., the safe disposal of radioactive waste. When planning the construction of a nuclear power station, the Japanese authorities had made it an essential condition to have the understanding of local people on reactor safety, and to pay careful consideration to environmental protection. It was his country's intention to maintain and intensify its efforts in research on reactor safety and on radioactive waste disposal. The disposal of radioactive waste was a matter of common interest to the world as a whole, and his country sincerely hoped that co-operative international action would be taken on the Agency's initiative to arrive at an acceptable solution for the problems involved. The recent efforts of the Agency toward the drawing up of international safety standards for nuclear power stations were highly appreciated. The work in question would, it was anticipated, contribute to the promotion of peaceful uses of atomic energy.

28. In conclusion, he reiterated his view that the future would see more intensive promotion of the use of nuclear energy for peaceful purposes. In that area, the activities of the Agency were contributing to the raising of living standards through technology advancement, to protection of the environment through research on safety, and to the maintenance of world peace through the application of effective safeguards for prevention of the proliferation of nuclear weapons. It was Japan's expectation that the Agency's activities would expand much more with the strong support of its Members; and it would spare no efforts on its part toward the achievement of the Agency's goals.

29. Mr. VLAHOV (Yugoslavia) congratulated the President on his election and welcomed Qatar, the United Arab Emirates and the United Republic of Tanzania to membership of the Agency[3]. The present session of the General Conference was being held in a political situation somewhat more favourable than a year previously. The easing of tension in the world had continued despite all the unsolved problems still facing the international community. The recent Conference on Security and Co-operation in Europe which had been held

[2] See document GC(XIX)/550, Table 5.

[3] See document GC(XIX)/OR.176, paras 14-16.

in Helsinki provided grounds for hoping that that tendency would continue in the future and contribute to better understanding and co-operation in all fields, not only between European countries but universally.

30. The Ministerial Conference of Unaligned Countries held recently in Lima had contributed to a better understanding of the problems faced by all developing countries. The Conference had underlined the need for faster and more universal transfer of know-how and technology from highly industrialized to less developed countries. At the Special Session of the General Assembly of the United Nations one of the general requests made was that co-operation between the developed and developing countries should be pursued, not on the basis of confrontation but as a means of promoting common interests. At the Ministerial Conference in Lima and at the Special Session of the General Assembly the importance of raw materials and energy as the basis for development had been particularly stressed. That had a very direct bearing on the problems of development and co-operation in the utilization of nuclear energy for peaceful purposes and therefore on the Agency's activities.

31. The NPT Review Conference was of exceptional significance for the Agency and its future activities. At that Conference many countries had expressed their dissatisfaction at the unequal status of the nuclear- and non-nuclear-weapon States under NPT. The nuclear-weapon States had been criticized for non-fulfilment of obligations stemming from NPT since they had not halted the nuclear arms race, the vertical and horizontal spreading of nuclear weapons had continued, nuclear tests for military purposes had not been stopped in all media and the security of non-nuclear-weapon countries had not been improved. Technical assistance provided by nuclear-weapon States to non-nuclear-weapon countries in the peaceful applications of nuclear energy had not been significantly increased either.

32. Expectations that the Final Declaration of the NPT Review Conference would be somewhat more decisive and concrete in the section on international co-operation had not been fulfilled. The obligations of nuclear-weapon States to render assistance to the non-nuclear-weapon States, particularly the developing countries, in the peaceful applications of nuclear energy had not been precisely specified and all the Declaration contained was an invitation for all Parties to NPT "in a position to do so" to assist non-nuclear-weapon countries in that field. In that connection, Yugoslavia was against any kind of preferential treatment for non-nuclear-weapon countries which were party to NPT as far as technical assistance provided by the Agency was concerned.

33. The Final Declaration had clarified to a certain extent the question of PNE by specifying that the Agency was the appropriate international body referred to in Article V of NPT, through which potential benefits from peaceful applications of nuclear explosions could be made available to any non-nuclear-weapon State.

34. The setting up by the Agency of an Ad Hoc Advisory Group on Nuclear Explosions for Peaceful Purposes was to be welcomed, as it would contribute to the formulation of a long-term programme in that delicate field.

35. Yugoslavia felt that the Agency had successfully accomplished its tasks in respect of NPT to the extent that circumstances allowed. However, the increasing demand for the peaceful applications of nuclear energy in all countries, and particularly in the developing countries, had now made it necessary for the Agency to conduct a thorough review of its obligations and tasks arising from NPT and the Final Declaration of the NPT Review Conference.

36. The provision of technical assistance should not be arrested for fear that small and developing countries might misuse such assistance to produce nuclear weapons. The existing system of safeguards was sufficient to prevent such misuse. The moves made by some countries at the NPT Review Conference to place increased controls on the transfer of equipment, technology and nuclear fuel might have adverse effects. The developing countries could not wait endlessly for assistance bogged down in a mire of controls but would look for other ways of developing and applying nuclear technology which could only work to the Agency's disadvantage.

37. The Director General's statement[4] and the annual report (GC(XIX)/544 and Corr. 1) demonstrated the diversification and significance of the Agency's activities. A large number of projects and programmes had been implemented in the nuclear power field and the continuing energy crisis meant that more and more countries were starting to build nuclear power plants, Yugoslavia being one of them. In providing assistance to Member States in that field, the Agency should concentrate on the concrete problems faced by countries embarking for the first time on nuclear power programmes.

38. In view of the increase in nuclear power production and the simultaneous increase in public awareness in that field, the Agency should pay special attention to promoting the peaceful uses of nuclear energy, and also to assuring nuclear safety and environmental protection. It was also necessary to intensify work on the application of nuclear techniques in agriculture, biological sciences, hydrology, prospection and industry. Particular attention should also be paid to the problems associated with the fuel cycle of nuclear power plants.

39. The large number of meetings, panels and discussions organized by the Agency served to further the exchange of technical knowledge and experience between Member States and contributed to the solution of technological problems.

40. Research contracts with the financial participation of the Agency were an incentive to many

[4] Ibid., paras 21-59.

countries to invest national resources in nuclear science, and the possibility of increasing Agency funds for that purpose should be examined.

41. An increasing number of developing countries was now capable of making effective use of the technical assistance offered by the Agency. The Agency should make every effort to increase the funds available and direct them towards projects in developing countries which were closely related to the production of energy of nuclear origin and the utilization of powerful radiation sources.

42. An increase in the target for voluntary contributions to the General Fund from US \$4.5 million to 5.5 million was still insufficient to meet the needs of developing countries. Such an amount might be adequate for encouraging fundamental research in the peaceful uses of nuclear energy, but for the development of nuclear power it was purely symbolic.

43. As in previous years, Yugoslavia would make a voluntary contribution to the General Fund in proportion to its base rate of assessment.

44. He expressed the firm belief that the Conference on Nuclear Power and its Fuel Cycle to be held in 1977 under the Agency's auspices would provide ample scope for the discussion and resolution of many problems of vital interest to Member States in the development of their nuclear power programmes.

45. Finally, he wished to offer some suggestions for consolidating the work of the Agency. First of all, he considered that the developed nuclear countries should continuously increase their contributions to the Agency to enable it to expand the human and material resources available to assist developing countries with nuclear power programmes. His delegation also considered that the Agency could do more in co-ordinating interests between the developed and the developing countries and thereby fulfil one of its basic functions. The International Atomic Energy Agency, as an organization of Member States with equal rights and obligations, should be able to resolve the problems it was set up to deal with in a democratic way, but that principle had not been fully achieved. It was necessary to devise a system whereby all Member States of the Agency could participate in all its bodies, activities and decision-making.

46. The development of world-wide co-operation in the field of nuclear energy under the Agency's guidance would not only help to resolve the energy crisis but also serve to improve mutual understanding in the world and establish equilibrium and confidence between all nations. It would surely also have a positive influence on the efforts being made towards nuclear disarmament. It was quite certain that large and even revolutionary advances in the peaceful application of nuclear energy could be achieved only if a complete ban on the testing and production of nuclear weapons was introduced. If that were achieved, vast human, material and financial resources devoted to nuclear weapons

production could be transferred to peaceful applications.

47. Mr. LE-VAN-THOI (Republic of South Viet-Nam), speaking for the first time as delegate of the Provisional Revolutionary Government of the Republic of South Viet-Nam, said he welcomed the admission of Qatar, the United Arab Emirates and the United Republic of Tanzania to membership of the Agency.

48. His delegation was gratified to see the encouraging results obtained by the Agency in its programme for the present year, and fully supported the trends in the programme for the coming year, more especially the increase in activities relating to fellowships, training, and provision of equipment under its programme of technical assistance.

49. It had to be pointed out, however, that the assistance provided by the Agency for South Viet-Nam had not so far always been used in the most effective way because of the prevailing financial and technical difficulties, together with the reluctance of international experts to work in an area fraught with strife. But, after 30 years of disastrous war, peace had finally been restored and it was to be hoped that the Agency would continue to give active support to the country's nuclear programme, which, though modest, was called upon to play an important role in the reconstruction of the country.

50. Following liberation of the country, the Revolutionary Government had set up a technical and scientific institute in South Viet-Nam for the promotion and co-ordination of theoretical and practical research. The Nuclear Research Centre at Dalat was now functioning again satisfactorily and a team of research workers from abroad, mainly from the socialist countries, had joined the present scientific staff.

51. Unfortunately, however, the nuclear fuel for the Triga Mark II research reactor had been removed by American officials just prior to the liberation of Dalat. Since that fuel was under Agency safeguards and since, furthermore, two of the fuel elements had originally been allocated to Viet-Nam by the Agency in 1968, it was hoped that the Agency, in fulfilment of its statutory responsibilities, would be able to provide the reactor with new fuel, thereby making it possible to carry out the requisite programme of research and training in the near future.

52. In the meantime research was continuing as best it could with the aid of imported radioisotopes. His delegation appealed to all the advanced countries, irrespective of their economic and social structures, to assist in the reconstruction of Viet-Nam. It was hoped in that connection that, as a first step, the Agency would fully implement the six technical assistance projects that had already been approved in previous years.

53. Now that the much-longed-for peace had finally been restored, the people of Viet-Nam

were firmly resolved to fulfil the last wishes of President Ho Chi Minh, namely the building of a unified, independent and democratic Viet-Nam.

54. The PRESIDENT said he was sure he would be speaking on behalf of all delegations in congratulating the Vietnamese people on the return of peace to their country.

55. Mr. OGUNLANA (Nigeria) said that his delegation had examined the background documents for the present Conference with interest and would air its views in the appropriate committees. Suffice it to say that the Nigerian delegation would continue to emphasize the importance of building the scientific infrastructure of developing countries rather than relying solely on aid from outside.

56. The proliferation of definitions of underdevelopment were so centred around such items as per capita income and the availability of foreign aid, that the fundamental meaning of the term was swept under the carpet. At present, the underdeveloped world constituted around 68% of the world population but contributed less than 14% of the total world output. It was estimated that by the year 2000, the population of underdeveloped countries would have increased to about 78% of the total world population, but that their contribution to world productivity would be less than 12%. Currently, therefore, the contribution of the richer countries was more than ten times that of the developing countries. If the present trend continued, then by the year 2000, the contribution of the richer countries would have increased to almost 20 times that of the developing countries. It was disturbing to note that on the average, one man in the richer countries today was as effective as ten men from the poorer countries. As if that were not bad enough, by the year 2000 the present trend would make one man in the richer countries as effective as twenty men from the developing countries.

57. That yawning technological gap between the advanced and the developing countries continued to increase. The ultimate development of the poorer countries was a task that they would have to accomplish for themselves. The poor countries were thus faced with the major problem of true independence, which political independence could not alone provide. True independence could only be achieved by establishing modern science as a cultural activity in society, and transforming the society's economy into one based on modern science and technology. The classical ingredients of economic growth - capital, labour and land - by no means sufficed to explain the rapid growth of the economies of the richer countries. The missing ingredient, which had variously been called "technical change", "research and development", "scientific, engineering and managerial advance", "advances of knowledge", "innovation" was of crucial importance. But whatever term was chosen to describe that crucial ingredient, "innovation" was what must always be borne in mind.

58. In the final analysis, the problem of underdevelopment was not one of the transfer of technology, but really one of scientific and technological innovation. It would, therefore, be of no avail to rely only on the direct transfer of technology. Nor could it be over-emphasized that outside technological aid could never be disinterested. Underdevelopment had two characteristic features: the paucity of men around whom to build viable programmes and the dearth of innovative ideas among members of the society in question.

59. True independence could be achieved only through the ability to harness natural resources, using a science-based methodology. Only through advanced technology could economic development be assured.

60. As Nigeria was blessed with an abundance of natural resources, the first priority was to ensure the availability of adequate, reliable and commercially competitive energy for the development of the country. To ensure that that was achieved, a grass-roots endeavour by Nigeria itself was what was called for. Experience had shown that although advice might be received from foreigners, there could never be any assurance that no other motives existed behind their suggestions, especially when nuclear energy was involved.

61. From that arose the need to establish the Nigerian Atomic Energy Commission as an autonomous body. The Commission was expected to play a key role in the establishment of Nigeria's economic independence. Nigeria had the resources and the population capable of utilizing them. The main objective of the Commission was to work towards the establishment of full ability in the peaceful uses of nuclear energy.

62. It was expected that the authority of the Nigerian Atomic Energy Commission would, like its counterparts in most other developing countries, be vested in the Presidency. Initially, it would function as an extra-ministerial department of the newly created Ministry of Petroleum and Energy so that the country would have an integrated energy programme.

63. It was customary in developing countries first to build a physically impressive establishment, assemble an endless array of the latest equipment, and then wonder what contributions the oppressive establishment was capable of making. In contrast, the advanced countries first found the individual or individuals with an innovative idea around whom to build a viable programme. The resounding success of that approach was epitomized by such monuments as the Max Planck Institutes in Germany, the Lawrence Berkeley Laboratory in California, and the Bhabha Atomic Centre in India. In fact, it was the policy of the authorities of the Max Planck Institutes "to first find an outstanding man, and then build an institute around him".

64. The Federal Military Government of Nigeria was aware that the customary approach in developing countries led to a blind alley. Accordingly,

the country's nuclear programme would benefit from the successful experiences of other countries.

65. The IAEA Advisory Group on Programmes for Nuclear Physics Research in Developing Countries which had been convened in Accra, Ghana, in June, provided useful information. It brought into sharp focus the fact that, if developing countries were to be able to partake genuinely in the benefits of nuclear energy, dedication and creativity on their part were necessary prerequisites.

66. One of the hitherto unresolved issues in nuclear physics was the nuclear energy of helium which was considered anomalous. It was a pleasure to be able to inform the Conference that Nigeria's work had resolved that issue. Nigeria hoped that that result would be harnessed for the benefit of all mankind.

67. Furthermore, a reformulation of quantum mechanics had been developed in Nigeria. The efficacy of that reformulation would, for one thing, enhance the country's studies of nuclear physics and the design of nuclear reactors. It would also enhance its remote sensing approach to mineral exploration.

68. In keeping with the grass-roots idea of the Nigerian nuclear programme, one of the spin-offs would be an increase in the protein intake of the country. It was currently planned to have a reactor moored at sea, protected against storms by concrete breakwaters. The slightly warmer water around the plant would attract fish and encourage commercial fishing and possibly fish farming in the surrounding area.

69. The Nigerian nuclear programme would not develop in a philosophical-social vacuum. The harnessing of technological achievements for social progress, the dynamics of social change due to technological advancement, the planning of the urban and rural regions of the community for optimal industrial and social development, the awareness that a lasting scientific endeavour must be a cultural activity, and above all, the dignity, economic emancipation and leadership role of the Black Man in the international arena were some of the long-term goals to which the work at the Nigerian Atomic Centre desired to contribute.

70. He remembered with pleasure the friendliness and co-operation between the Agency and the Centre for Advanced Studies at Ife, which was the mustard seed of the Nigerian nuclear programme. He had no doubt that the friendliness and co-operation would wax stronger for the advancement of the programmes of Nigeria and of the Agency.

71. Mr. BEESLEY (Canada) said that his delegation welcomed the admission of Qatar, the United Arab Emirates and the United Republic of Tanzania to membership of the Agency.

72. References had been made to the controversy concerning public acceptance of nuclear power. It

was perhaps significant in that respect that, parallel to the present General Conference, a meeting of the Organization of Petroleum Exporting Countries (OPEC) on oil pricing policy was also being held in Vienna, the results of which could have far-reaching implications. The increased cost of oil had given impetus to the basic activities of the Agency, but it was a widely-held view that there had to be a careful balance between development of nuclear power and controls to guard against diversion and ensure the safety and protection of the environment. The Agency had been able to make a major contribution to such development and control in three areas: the promotion of nuclear energy programmes of Member States by technical assistance, training and exchange of information; the development of nuclear safety and environmental protection programmes; and the improvement of international security through safeguards activities.

73. It was gratifying to note that a large proportion of the Agency's Regular Budget was assigned to programmes of direct interest to the developing countries, more especially projects concerned with the introduction of nuclear power. In that context the Agency's new training programme in power project planning would be of substantial benefit. At the same time, it could provide assistance at the pre-introduction stage by offering increased opportunity for study of the various alternatives. In that connection, the market survey had also made a valuable contribution in defining the place of nuclear power in the needs of developing countries. Once the basic decision had been taken, it was then possible for the Agency to advise on such matters as siting, equipment and organization.

74. He welcomed the Agency's decision to study the economic feasibility of regional fuel cycle centres, which would promote the optimum use of scarce resources. Joint efforts by teams from different countries could provide a breakthrough in the broader introduction of nuclear power for development purposes. His delegation shared the views expressed by other delegations on the importance of the role of regional fuel cycle centres in reducing the risks of proliferation of nuclear explosive devices by limiting the number of facilities producing fissile material.

75. It also welcomed the revised recommendations on the physical protection of nuclear material<sup>[5]</sup>, and supported all further efforts to deal with a particularly important aspect of that problem, namely the international transfer of nuclear materials.

76. Furthermore, it was clear that the Agency was the organization best suited to assist in the definition of standards of safety and environmental protection. The continuing programme for the development of safety codes and guides was worthy of full support.

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[5] INFCIRC/225.

77. His country took an active part in the Agency's work in the field of radioactive waste management, which was a reflection of the Canadian policy of storing waste at land-based sites in retrievable form, rather than attempting to "dispose" of such materials, although an approach of that kind might not always be feasible in other countries. He strongly supported the efforts of the Agency to provide scientifically sound guidelines for the dumping of low-level radioactive wastes.

78. One of the most controversial issues facing the Agency was the considerable degree of ignorance and misunderstanding relating to the environmental impact of nuclear power. There, too, the Agency should continue its efforts, with characteristic scientific objectivity and responsibility, to ensure a comparative study of the environmental effect of various alternative energy sources. The Agency's co-operation with WHO and the International Institute for Applied Systems Analysis with a view to a quantitative evaluation of the effects of all available options for energy production was very encouraging.

79. Yet another important activity of the Agency was its role as a forum, which provided an opportunity for experts from all countries to keep abreast of the developments in the nuclear programmes in the form of seminars and other meetings; there had been record numbers of participants over the past year. In addition, the International Nuclear Information System was an invaluable means of communication, which his Government actively supported.

80. As had been stressed by many delegations, the Agency's role was both evolving and expanding, and its basic functions, as reflected in the Statute, were gaining ever greater importance in face of problems that could not have been foreseen at the time of the Agency's establishment. One such problem, for example, was the fact that the extra cost of oil imports in 1974 alone - estimated at \$10 billion - had more than cancelled out all the aid received by the developing countries over the previous year. The delegation of the Philippines, among others, had drawn attention to the implications of those and related developments for the Agency's technical assistance work. [6]

81. Although the Canadian policy on development aid continued to be based on preference for some form of central funding of United Nations activities, his Government had pledged the full assessed share for voluntary contributions to the Agency's General Fund for technical assistance in 1976. The increase from the previous year seemed quite justified by the growing needs of the developing countries for Agency support and the erosion of the available resources due to inflation.

82. In a statement at the NPT Review Conference, the Canadian representative had declared that

Canada would continue to play its full part in contributing to the Agency's technical assistance funds and also to the United Nations Development Programme and that increased amounts would be made available for assistance in the nuclear field to developing countries party to NPT.

83. His delegation wished to commend the Agency on its very useful work in the field of PNE. His Government fully supported the Final Declaration of the NPT Review Conference, which stated that the Agency was the proper international body through which benefits from peaceful applications of nuclear explosions should be made available to non-nuclear-weapon States, and urged the Agency to expedite the study of the legal implications of the agreements envisaged under Article V of NPT. Hence the establishment of an advisory group on PNE was to be welcomed and he would closely follow its work.

84. In conclusion, his delegation regarded the Agency's safeguards activities as of crucial importance and inseparably bound up with its technical assistance programmes. Effective safeguards were an essential basis for international co-operation in the transfer of nuclear materials, equipment and technology. In view of the constant state of flux in relations between States, it was vital, when introducing technologies with a potentially strategic significance, such as nuclear energy, to ensure that new risks were not thereby created for the international community.

85. International co-operation required an impartial system of international safeguards. The Canadian Government looked to the Agency as the international community's main instrument for providing such guarantees.

86. The PRESIDENT said that before adjourning the meeting he would ask the Conference to interrupt the general debate to devote a few moments to another agenda item.

#### CLOSING DATE OF THE SESSION

87. The PRESIDENT recalled that, under Rule 8 of the Rules of Procedure, the Conference had to fix the closing date of the session, on the recommendation of the General Committee.

88. The General Committee had considered the matter and had authorized him to recommend on its behalf that 26 September be fixed as the closing date.

● 89. The Committee's recommendation was accepted.

● The meeting rose at 1 p. m.

[6] See document GC(XIX)/OR. 178, paras 93 and 94.