

**GC**

International Atomic Energy Agency

GENERAL CONFERENCE

GC(XVI)/OR.153

6 April 1973*

GENERAL Distr.

ENGLISH

SIXTEENTH REGULAR SESSION: 26 SEPTEMBER—3 OCTOBER 1972

RECORD OF THE ONE HUNDRED AND FIFTY-THIRD PLENARY MEETING

Held in the conference centre of the Secretariat of External Relations,
Mexico City, on Wednesday, 27 September 1972, at 4.25 p.m.

President: Mr. FLORES DE LA PEÑA (Mexico)

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* A provisional version of this document was
issued on 25 October 1972.

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THE RECORD

GENERAL DEBATE AND REPORT FOR 1971-72
(GC(XVI)/480, 480/Corr.1 and 3, 488) (continued)

1. Sir John HILL (United Kingdom) wished to be associated with the words of appreciation addressed to the Mexican Government for its gracious and generous welcome. There had been great progress in the peaceful uses of atomic energy since the Agency's inception in 1957. The developing countries had consistently expanded their knowledge and increased their skills, and it was only reasonable, therefore, that the Agency should reflect the changing situation in the composition of its Board of Governors. With that in mind, the General Conference had in 1970 amended Article VI, A-D of its Statute, [1] in which the composition of the Board was laid down. That amendment, so far ratified by only two thirds of the required number of Member States, had not yet come into force and the United Kingdom urged Member States which had not already done so to ratify it without delay.

2. Public interest in the protection of the environment had sharpened as the effects of technology - designed to meet the demands of the world's growing population - made themselves felt. The United Nations Conference on the Human Environment held in Stockholm in June had considered a vast range of subjects, including the important question of pollution, and had recognized that nuclear power was a means of satisfying the world's demand for energy without detriment to environmental safety. The Stockholm Conference had accordingly taken a keen interest in nuclear power and had been very much aware of the Agency's role in connection with radiological protection and the management of radioactive wastes.

3. The Agency was studying the possibility of international storage of atomic waste and the collation of data on that subject. It was to be hoped that more and more countries would turn to the Agency for advice and help as it would be unfortunate not to use the Agency's expertise at a time when the new environmental protection organization recommended by the Stockholm Conference was being set up. The United Kingdom would be host to a conference in October designed to lead to a convention on the dumping of noxious waste at sea, and was glad the Agency would be sending an observer.

4. The United Kingdom had met its commitments in respect of both its assessed contribution and its voluntary contribution to the General Fund, for technical assistance. However, it felt that in times of inflation special care had to be exercised: it should not be assumed that cost increases were inevitable or that Member States would always accept a larger budget. It was essential that the Agency should regularly examine

the priorities assigned to its activities and try to maintain a balance between short-term and long-term projects. The United Kingdom would make its full contribution to the 1973 Operational Budget but would consider the amount of its 1974 voluntary contribution in the light of the performance of other Member States.

5. As in previous years, the Government of the United Kingdom was ready to accept Agency fellows, and the Central Electricity Generating Board would again make available places at its nuclear power stations.

6. It was cause for satisfaction that steady progress had been maintained in concluding safeguards agreements in connection with the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) [2] with non-nuclear-weapon States. The Agency had taken the sensible initiative of setting up an office during the General Conference for the purpose of carrying forward such negotiations. A further significant milestone was the conclusion of the agreement between the Agency and the European Atomic Energy Community (EURATOM), and it was to be hoped that the countries concerned would ratify NPT without delay.

7. It was in order to encourage States to ratify NPT that Her Majesty's Government had offered, at such time as safeguards were put into effect in non-nuclear-weapon States in implementation of the Treaty, to submit its nuclear activities to Agency safeguards, with the exception of those affecting national security.

8. The United Kingdom and EURATOM would consult in the course of the autumn on the system of control to be applied in the United Kingdom in the light of the provisions of the EURATOM Treaty. The United Kingdom would continue discussions with the Agency about its stated intention to accept Agency verification in the light of its voluntary offer. The timing of the decision to put such verification into force in the United Kingdom must inevitably take account of progress in ratification and implementation of NPT by major non-nuclear-weapon States. In accepting the application of safeguards to its nuclear activities, the United Kingdom was demonstrating its strong support for the safeguards system and its concern to see the Treaty fully applied.

9. The introduction of nuclear power in the United Kingdom had been motivated in part by a desire to reduce imports of hydrocarbon fuels. But the British nuclear power programme had always been directed towards economic generation of electricity. It was clear that the balance was swinging steadily in favour of nuclear power. In the United Kingdom, as in the rest of the world, there had been a constant increase in fossil fuel prices, and as the technical characteristics of nuclear stations were improved and their costs reduced, nuclear power would play an increasingly important role in meeting the United Kingdom's demand for energy.

[1] By Resolution GC(XIV)/RES/272, para. 1.

[2] Reproduced in document INFCIRC/140.

10. Nuclear technology was in constant evolution, and the United Kingdom had been led to consider how its nuclear power resources could best be used to meet the needs of the future. Accordingly, the British Government, in close consultation with the United Kingdom Atomic Energy Authority and the nuclear industry, had examined both the present industrial structure and the reactor development programmes.

11. The Government's review and the airing of opinion it had promoted had resulted in a clearer view of future aims, both on the national scene and internationally. The previous month, the British Government had officially expressed its confidence in the United Kingdom fast reactor system and had announced an expanded programme of engineering development. The experimental reactor at Dounreay had been operating most successfully since 1960; the 250-MW fast reactor, also at Dounreay, was in its final stages of construction and should be completed by the end of the year and operational towards the end of 1973. The first commercial fast reactor was at present being designed. It would have an output in excess of 1000 MW(e), and construction would get under way as soon as sufficient operating experience had been obtained with the prototype. By around 1980 fast reactors would account for the major part of domestic plant orders.

12. The Central Electricity Generating Board was expected to place another order for a thermal reactor at the end of 1973. Meanwhile, work continued to optimize and further improve the advanced gas-cooled reactor (AGR). The steam-generating heavy-water reactor (SGHWR) was a strong contender for future orders, both before the introduction of fast reactors and subsequently, as a complementary system. Because of its flexibility of size, it could be expected to appeal to many countries. The British Government had therefore announced further support for the SGHWR project in view of the four years of successful operation of the 100-MW(e) prototype at Winfrith. Building upon experience of the growing interest in many countries in the high-temperature gas-cooled reactor (HTR), the United Kingdom hoped that future work on that system could be carried out as part of an international project. It would also keep a watching brief on light-water reactor developments.

13. Against the background of problems arising from the increasing complexity and size of nuclear power stations, the British nuclear industry was in the process of consolidation into a single nuclear company which would pool the resources of the two existing companies and would be closely associated with the United Kingdom Atomic Energy Authority and British Nuclear Fuels, Ltd.

14. The British Government was also about to set up a nuclear power board to bring together all parties with a major interest in nuclear power in order to provide the Government with concerted advice on all aspects of nuclear power policy. The nuclear industry had become increasingly

international and it was clear that the new company would be called upon to play its role in many international projects.

15. British participation in international ventures relating to the nuclear fuel cycle was already well advanced. As far as the United Kingdom was concerned, the transport and chemical reprocessing of irradiated fuel and the enrichment of uranium were already being carried out on a multinational basis. Development by the United Kingdom of the centrifuge process for enrichment of uranium, carried out in conjunction with the Netherlands and the Federal Republic of Germany, was already well known and continued to make good progress.

16. In short, the trends in the United Kingdom were the same as those observed in many countries. The changes which were being made were aimed at strengthening the nuclear industry to meet the increasing demands and to establish international links so that maximum benefit could be derived from progress in the new technology.

17. Mr. BOSWELL (Australia) wished to extend his warm congratulations to the President on his election and assured him that the Australian delegation would give him every support in discharging the duties of his office. Under his leadership the sixteenth session of the Conference was certain to be crowned with success. He also wished to congratulate the Vice-Presidents.

18. Although it was not the first time that the General Conference had been held outside Vienna, it was the first time that it was meeting in Mexico. Delegates owed a debt of gratitude to the President and the Government of Mexico for inviting the Conference to hold its session in that interesting and colourful city. The holding of a session at a place away from the Agency's Headquarters made considerable demands on both the Secretariat and the host country. His delegation was most grateful to all concerned for their help.

19. In the past year, many developments had taken place in the field of nuclear energy, both in Australia and abroad. In so far as Australia was concerned, he wished to comment on a few points. First of all, prospecting for uranium in Australia had continued with marked success. It was estimated that the resources of uranium recoverable at less than US \$10 per pound of U₃O₈ were about 92 000 tons. About 80% of those resources were located in the Alligator Rivers uranium field in the Northern Territory. Apart from that major field and other well-established ones in Queensland, the discovery of significant uranium mineralization over a large area in the northern part of Western Australia had been announced in the current year. Exploration was only in the preliminary stages, but the field appeared to be very promising. Other discoveries had been made near Lake Frome in South Australia. That deposit, which was sedimentary in nature, was currently being investigated.

Considering the size of the deposits already discovered and proved, together with other fields which had not yet been fully investigated, it appeared that Australia should become one of the major uranium producers in the world.

20. During the past year the Australian Government had decided to reconsider the nuclear power project proposed for Jervis Bay. Australia was not the only country to postpone nuclear power projects; it was in a position to do so because it possessed abundant high-grade coal reserves that were relatively cheap. Natural gas had also been discovered recently. The electricity companies had by no means lost interest in nuclear power and believed that it would come into its own in Australia within the coming 10 or 15 years.

21. As a producer of low-cost energy and uranium, his country naturally took a keen interest in initiatives aimed at meeting the world demand for enrichment services. It had been noted that several major enrichment plants would probably be built and put into operation outside the United States during the 1980s. His country had therefore been happy to have the opportunity of studying, during talks with the United States and French authorities, the technical and economic problems associated with setting up an enrichment plant in Australia. It was probable, however, that Australia would not need enriched uranium before 1990, so any large-scale facility in the country would be available to meet the needs of overseas markets. Enrichment plants required, of necessity, major investments and had to be operated at maximum capacity if they were to be profitable. The start-up of new plants would have to be co-ordinated with production requirements, so that they could meet the demands of the moment; at the same time it would be desirable to ensure that the unused capacity was never too great.

22. Another major event for Australia in the course of the past year had been the agreement for co-operation in nuclear energy signed with Japan. That agreement opened up the way for the closest co-operation between Australia and Japan, both at governmental and commercial level, in the peaceful use of atomic energy, and provided an official framework for future negotiations with a view to collaborating in specific areas of research and commerce. An agreement had also been concluded which would transfer to the Agency the application of safeguards under the bilateral arrangement. [3]

23. Turning to the Agency's programme, he said that the Agency had continued to carry out its functions in the efficient way expected of it.

24. The decision to broaden representation on the Board of Governors was commendable. The necessary amendment to Article VI, A-D of the Statute, which increased the size of the Board, had been ratified by a number of countries,

including Australia. It was to be hoped that other States would also take steps to ratify the amendment so that it could then be put into effect.

25. It was generally recognized that the Agency was one of the most efficient organizations, if not the most efficient, in the United Nations family. That fact was a credit to the Director General and the Secretariat, and, at the same time, it brought out the need to ensure that the Agency's programme remained geared to the real problems of the atomic energy world. It seemed appropriate, on the occasion of the Conference's sixteenth session, to make a detailed study of the Agency's objectives and to establish new priorities in the light of the events of recent years. Indeed, it would not be realistic to expect the programmes and activities embarked on a few years earlier to be consonant with the problems of the present day. It was therefore heartening to note the Director General's comments stressing the need to seek new horizons relevant to the needs of the day. [4] Such an approach was to be welcomed.

26. As behove it, the Agency had sought to fulfil its commitments under NPT and would henceforth be called upon to devote an increasing share of its resources to activities of that kind.

27. Nuclear power production had become an established branch of industry and under those circumstances the Agency's role might easily become limited, through financial pressures, to safeguards activities and technical assistance. He agreed with the Director General that if Member States allowed that to happen they would be forfeiting the ways and means at the Agency's disposal to speed up and enhance the contribution of nuclear energy to peace, health and prosperity throughout the world. His delegation considered, in particular, that the Agency had an important part to play in ensuring that nuclear energy would not only not degrade the environment but would actually improve it by replacing less acceptable forms of power production. It was well qualified to deal with the fundamental aspects of environmental problems and, inasmuch as it was concerned with safety, was also in a position to offer appropriate solutions.

28. The problem of the degradation of the environment transcended national barriers, hence there would have to be an effort directed towards international co-operation to promote the safety of nuclear reactors and to protect the environment; more particularly it was essential to ensure that radioactive waste was disposed of in ways protecting the interests of all. By concentrating its efforts on such problems the Agency could live up to its reputation as an organization that was contributing practically and constructively to the development of a responsible nuclear industry.

29. His delegation believed that conditions might be favourable at the present time for a more effective utilization of technical assistance funds

[3] Reproduced in document INFCIRC/170.

[4] See document GC(XVI)/OR.152, paras 3-40.

which would allow the developing countries to benefit from the experience gained by other countries that had already embarked upon nuclear power programmes. The Director General's comments on that very important question were commendable. From personal experience he (Mr. Boswell) knew how useful a report on the various contractual arrangements available for constructing a nuclear power plant and on different ways of inviting tenders for reactors and assessing bids could be.

30. One of the problems that certain countries had to tackle was to decide the best way in which to acquire the experience in nuclear matters necessary to enable them to make wise decisions when the time came to plan the installation of nuclear power plants. Australia had recently assisted the Government of Singapore, under the Colombo Plan, by acting in an advisory capacity in matters of that kind. There were numerous other ways of gearing technical assistance to activities that would be useful to several developing countries at the same time.

31. During the Conference's session in 1971, his delegation had stated that action was needed to ensure that proven small- and medium-size power reactors were available to countries that needed them. [5] The major reactor manufacturers were now tending to design very large reactors suited to the needs of the most technologically advanced countries. For a long time to come, however, many States would still have grid systems that could only accommodate 100-500 MW reactors; hence it was important that reactors of that size should be readily available. In that context it was reassuring to note the action taken by the Director General, in conjunction with the International Bank for Reconstruction and Development and other financial institutions, and with Member States, for a world market survey of the demand for that type of reactor. [6] He looked forward to receiving the results of the study in due course.

32. In conclusion he wished to state, on behalf of his delegation, how much he had appreciated the opportunity of serving on the Board of Governors under the chairmanship of Baron van Boetzelaer, whose skill and tolerance had promoted the success of the Board's work during the past year. He had also enjoyed serving as Vice-President of the Conference under Professor Otero Navascues, President of the fifteenth regular session.

33. Mr. MOROKHOV (Union of Soviet Socialist Republics) said he would first like to congratulate the President on his election and to express his appreciation to the Mexican Government for the hospitality he had been accorded. For the first time in the Agency's history the General Conference was meeting in Latin America, in a country that took an active part in its deliberations

and contributed extensively to the reinforcement of international security. That fact was a reflection of the unflagging attention given by the Agency to the problems involved in the utilization of nuclear energy in the countries of Africa, Asia and Latin America.

34. More than 15 years had passed since the Agency had been established. During that time the Agency's international authority, the part it played in organizing international co-operation in the peaceful uses of atomic energy, and the scope of its efforts to that end, had been considerably enhanced. At the same time, the number of Member States had been greatly increased, first and foremost through the membership of new developing countries.

35. The present session of the General Conference was characterized by a distinct reduction in international tension and by greater mutual trust. That development indicated that the principle of peaceful coexistence between countries with different social systems was becoming more and more widely accepted. A major contribution towards improving the international political climate had been made by the agreements recently concluded between the Soviet Union and the United States of America, namely the agreement on the limitation of anti-missile defence systems and the provisional agreement on various measures aimed at limiting offensive strategic weapons. Those agreements played a major part in banishing the threat of nuclear war, slowing down the arms race, and opening up new prospects for general and complete disarmament. Their conclusion was clear evidence of the fact that the Soviet Union intended to fulfil the obligations devolving upon it under Article VI of NPT.

36. The desire of States to work together to settle international disputes by peaceful means created favourable conditions for the application of additional measures to strengthen world peace, consolidate international security, and eliminate sources of tension. All that could not fail to stimulate the fruitful activities of the Agency, which was called upon to place the achievements of nuclear science and technology at the service of peace, health and prosperity throughout the world.

37. A few days before, the Government of the Soviet Union had undertaken a new initiative within the United Nations by proposing an urgent study of the problem of the use of force in international relations, and the permanent banning of nuclear weapons. If that problem was to be solved, all countries would have to renounce categorically the use of force, particularly nuclear weapons. There was no doubt that the Agency could and should contribute to the attainment of such an aim.

38. The Soviet Union attached great importance to NPT, the conclusion of which would help to create favourable conditions for solving other disarmament problems. NPT would also enable

[5] See document GC(XV)/OR.146, para. 19.

[6] See document GC(XVI)/OR.152, para. 18.

non-nuclear States party to it to benefit broadly from the advantages offered by the peaceful uses of nuclear energy. It was for that reason that NPT had been so widely accepted. At the present time, almost 100 States had signed it and another 71 had already ratified it, a fact that was evidence of the vitality and validity of that important international instrument. The States which had not yet adhered to NPT should not delay in doing so. An increased number of States party to NPT would further the interests of international peace and security.

39. The Soviet delegation had had frequent occasion to stress that the conclusion of NPT and the assignment to the Agency of the safeguards activities envisaged in it had increased the Agency's authority and responsibility on the international scene. At the present time 33 non-nuclear-weapon States had completed their negotiations with the Agency and almost as many were actively engaged in such negotiations. He was gratified to see that all the socialist States party to NPT had already concluded the negotiation of safeguards agreements and that the latter had been approved by the Board of Governors.

40. It was a very important fact that, on the eve of the opening of the current session of the General Conference, the Board had approved a safeguards agreement with the five non-nuclear-weapon States that were members of EURATOM, namely Belgium, the Federal Republic of Germany, Italy, Luxembourg and the Netherlands. It was to be hoped that those States would soon ratify NPT, and that Japan and other States would follow suit. It was also heartening that the Board had approved the safeguards agreement between the Agency and Mexico, a country which had always attached great importance to the application of nuclear energy solely for peaceful purposes. Other countries, not only in Latin America but also in other parts of the globe, would do well to follow that example.

41. The Secretariat and the Director General had played an active part in the conclusion of the safeguards agreements in connection with NPT, and were constantly striving to improve upon safeguards techniques. His Government supported the suggestion that, whenever necessary, the Secretariat should send representatives to the countries concerned to negotiate safeguards agreements on the spot. The Agency could discharge its functions much more efficiently if the principle of universality, one of the most important tenets in the activities of any international organization, were systematically applied. Under the terms of the Statute, all States subscribing to the objectives of the Agency and willing to fulfil their obligations should enjoy an opportunity of taking part in its work.

42. He was happy to see that the General Conference had approved the new Republic of Bangladesh for membership of the Agency, [7] since that decision would help to strengthen

international co-operation in the peaceful use of atomic energy and to cement the Agency's ties with all the countries of the world. The Agency's task would also be facilitated if the German Democratic Republic could take part in its activities. The German Democratic Republic, which counted as one of the most highly developed countries of the world and had to its credit major achievements in the peaceful use of atomic energy, was eminently suited for membership of the Agency with all the rights accruing therefrom. As one of the first countries to conclude a safeguards agreement in connection with NPT, it was actively assisting in implementing that Treaty. The matter of membership should be settled without delay.

43. His delegation endorsed the favourable response that had been evoked by the Agency's programme for 1973-78 [8]. It provided for activities in almost all aspects of the peaceful use of nuclear energy of interest to both advanced and developing countries. Taken all round, it appeared to be adequately balanced and in keeping with the interests of States Members of the Agency. Finally, it took into consideration such pressing problems as protection of the environment, nuclear power development, including the technology of reactors and nuclear power stations, thermonuclear reactor design, and improvement in safeguards techniques. It provided for a further extension and improvement of the International Nuclear Information System (INIS), which had been operating satisfactorily for several years and had promoted international collaboration in the exchange of scientific information.

44. It was important for the Agency to take a more active part in dealing with the problems connected with protecting man and his environment against the harmful effects of nuclear radiation and the various pollutants discharged by industry. In the Soviet Union a great deal of importance was attached to that matter. At a recent session, the Supreme Soviet had taken steps to improve the protection of nature and to utilize natural resources more rationally. The world's biosphere was an indivisible whole, and international co-operation was therefore of particular importance. As Mr. L. I. Brezhnev had pointed out at the XXIV Congress of the Soviet Communist Party the Soviet Union was willing to take part in joint international action for the protection of nature and more rational exploitation of natural resources.

45. As a multinational country, the Soviet Union was following with interest the progress made by the countries of Africa, Asia and Latin America in the social and economic spheres. During the 50 years of its existence, the Soviet Union had afforded each of its constituent Republics an opportunity to develop industrially and agriculturally and to attain a high cultural level. Evidence of their economic advance was the fact that they employed the latest achievements of science and technology, particularly in the field

[7] By Resolution GC(XVI)/RES/287.

[8] GC(XVI)/485.

of nuclear energy. They almost all possessed their own large nuclear study centres, equipped with such up-to-date facilities as research reactors, accelerators, powerful radioisotope irradiators, and modern nuclear physics equipment.

46. New scientific institutes had been set up with locally trained staffs. In activation analysis, for example, a leading part was played by scientists from Georgia, Lithuania, Kazakhstan and Uzbekistan. The Uzbek radiochemistry school was well known both in the Soviet Union and abroad. Reactor technology had exhibited a new trend in Byelorussia, and the Nuclear Energy Institute there had begun studies on dissociating gas reactors. Active research was being conducted at Ukrainian nuclear centres in the fields of plasma physics and controlled nuclear fusion, high-energy physics, solid-state physics and reactor materials. The work of Moldavian specialists in the application of radioisotopes in agricultural studies was well known.

47. In addition to the development of nuclear power within the Russian Soviet Federated Socialist Republic, nuclear power stations had been set up in Armenia, Kazakhstan and the Ukraine. The various Republics would henceforth possess a solid industrial basis for producing equipment, instruments and nuclear facilities.

48. Mention should also be made of several particularly important achievements in nuclear physics. With the aid of the accelerator at Serpukhov it had been possible to establish new laws governing the interaction of nucleons and mesons. A joint project implemented by the High-Energy Physics Institute and the European Organization for Nuclear Research (CERN) had made it possible to determine, with great accuracy, an effect involving the formation of boson resonances that was of importance for the formulation of the elementary particle theory. In the convergent beam facilities at Novosibirsk the formation had been observed of two electron-positron pairs during collision between an electron and a positron. The electron accelerator at Erevan had been used for research in which it had proved possible to elucidate the nature of the charge distribution in the proton and to determine its dimensions more exactly.

49. The experimental base for nuclear physics had continued to expand. The Serpukhov cyclotron had made it possible to double the mean intensity of the proton beam. The accelerator had been used to produce an electron beam (through disintegration of π -mesons) with an intensity of the order of 10^5 electrons per cycle; as a result one could study several electro-magnetic effects for energies considerably higher than those attainable in the most powerful electron accelerators in the world.

50. Interesting results had been obtained in the field of high-temperature plasma physics. Soviet experts had continued to play a leading part in studies on prolonged plasma containment

in Tokamak devices. During the past year, they had not only improved the plasma parameters in the most powerful device of that type at the Kurchatov Atomic Energy Institute, but had also engaged in studies aimed at designing new models of Tokamak installations and developing new techniques for heating the plasma. According to preliminary calculations, a change of an original nature in the magnetic field might make it possible to increase the present parameters of the plasma several times over, and to take a new step towards solving the problem of nuclear fusion.

51. Nuclear power had continued to develop in the Soviet Union, just as in a number of other socialist countries. The fourth unit of the Novovoronezh power station, with a capacity of 440 MW(e), would be started up in 1972, thereby raising the total capacity of the power station to 1.5 million kilowatts. In addition to the facilities already mentioned the Leningrad power station, which was to be equipped with two channel-type reactors and have an overall electrical capacity of 2 million kilowatts, would be put into commission within the next few years. Several other nuclear power stations, for example those at Kola, Kursk and Smolensk, were in process of construction.

52. Action had been taken to step up co-operation and integration among socialist countries in the field of science and technology. The Soviet Union was providing technical assistance for the construction of nuclear power stations in member countries of the Council for Mutual Economic Assistance (COMECON). Under its overall programme, COMECON had set up an autonomous international scientific company called "Interatominstrument", responsible for meeting the needs of participating countries in nuclear instruments and devices. Another step towards implementation of the overall COMECON programme had been the establishment of an international scientific group to take charge of research in the physics of power reactors. Faithfully pursuing a policy of assistance to the countries of Africa, Asia and Latin America, the Soviet Union was providing aid to several countries on a bilateral basis as well as through the intermediary of international organizations, including the Agency.

53. In conformity with its commitments under NPT, the Soviet Union contributed regularly to the financing of the Agency's technical assistance programme. Its voluntary contribution for 1972, which had been increased to 250 000 roubles, was being sensibly spent on the provision of equipment, instrumentation and materials for developing countries and on study tours in the Soviet Union for the benefit of the nationals of such countries. In 1972, two study tours had been arranged, with the participation of over 60 specialists from developing countries.

54. His delegation was authorized to announce that the Soviet Government had decided to raise its voluntary contribution to the Agency's General Fund to 350 000 roubles in national currency.

The money could be used to provide equipment, instruments and materials of Soviet manufacture and for organizing scientific meetings in the Soviet Union.

55. In conclusion, he wished to stress once again that the Soviet Union continued to advocate the intensive development of international co-operation in the use of nuclear energy for peaceful purposes, in conformity with the purposes and principles of the Charter of the United Nations, the Agency's Statute and NPT. The Agency's work in that sphere was of great importance for the preservation of international peace and security. It was to be hoped that the current session of the General Conference would represent a positive contribution to international co-operation in the peaceful use of atomic energy.

56. Mr. KATO (Japan) congratulated the President and expressed his gratitude to the Government of Mexico which had welcomed the sixteenth session of the General Conference with such generosity and cordiality. He wished especially to stress the excellent relations his country enjoyed with Mexico and all the other Latin American countries.

57. With the expansion of the world economy, the importance of atomic energy in the earth's total energy resources had also increased. That trend was particularly noticeable in Japan, which possessed scarce natural resources and was obliged to use atomic energy to support its industry. Thus, last June the Japanese Atomic Energy Commission had announced a long-term programme for the development and utilization of atomic energy. Under that programme a nuclear power capacity of about 60 000 MW would be attained by 1985 and about 100 000 MW by 1990, as compared with the present capacity of about 2000 MW. That goal could be reached by the development of advanced thermal reactors and fast breeder reactors.

58. Regarding nuclear materials requirements, Japan had to prospect for and work uranium deposits abroad in close co-operation with supplying countries. The Government had conducted feasibility studies on the joint construction of uranium enrichment plants and, in view of the supply of and demand for enriched uranium and the time when the facilities would be needed, it was expected that the Japanese Government would decide on such joint ventures in 1973 at the latest. The first nuclear ship to come from a Japanese shipyard had been completed in August 1972 and trials were in progress with a view to the vessel sailing on its maiden voyage in April 1973.

59. Japan was co-operating closely with the Agency in the promotion of the peaceful uses of atomic energy and had concluded agreements with five countries involving the application of Agency safeguards, with the result that practically all nuclear materials in Japan were subject to those safeguards. Japan had established its own control and accounting system

for nuclear materials and had thus facilitated the Agency's work.

60. The rapid progress in science and technology and in economic development posed a problem of unprecedented gravity: how to protect the environment from industrial and other forms of pollution. In order to achieve maximum utilization of atomic energy without threatening the environment, it was essential first to solve such vital questions as safety in all nuclear facilities and the handling and disposal of radioactive wastes. In that respect the Agency deserved praise for its important contribution to the solution of those problems; it could likewise provide assistance in solving the question of disposal of radioactive wastes into the sea.

61. The days had passed when atomic energy had been of interest to only a limited number of countries. The Agency's technical assistance to developing countries had fortunately become more important. In that regard, the Government of Japan, subject to the approval of the Diet, would make a voluntary contribution for 1973 consisting of an amount proportional to its assessed contribution, which had ranked fifth in size since 1969. Japan had also hosted a training course on radioactive waste management and another course for Asian countries on nuclear power generation, and had accepted Agency fellows. It also intended to participate in the Agency's market survey for nuclear power plants in developing countries.

62. An event of great importance had been the Board's approval, the preceding week, of the NPT safeguards agreement between the Agency, the non-nuclear-weapon States Members of EURATOM, and EURATOM. It would be the first time that those States accepted the Agency's independent safeguards, thus contributing greatly to the evolution of the international safeguards system. Nevertheless, the Japanese delegation had pointed out during a Board meeting that its Government thought that certain provisions of that agreement needed careful study; it continued to believe that a technical committee should be established by the Agency to ensure "general, objective and uniform" interpretation and implementation of NPT safeguards agreements concluded between the Agency and individual States or between the Agency and a group of States.

63. The Japanese Government was firmly convinced - assuming the EURATOM agreement to have been drafted on the basis of the model agreement - that the content and substance of the EURATOM agreement should also be applicable to any NPT safeguards agreement to be concluded between the Agency and an individual State or a group of States. Japan had therefore made a general reservation in that respect in view of the significant bearing which the EURATOM agreement would have on the preparatory talks initiated last June between the Agency and Japan in connection with an NPT safeguards agreement.

64. EURATOM was at present composed of five non-nuclear-weapon States and one nuclear-

weapon State which was distinguished from the others in terms of the rights and obligations under NPT. The Japanese Government was interested in knowing what new implications would emerge, for the whole system of the Agency's safeguards in connection with NPT, when those safeguards were applied to an entity such as EURATOM. It also wished to know what practical implications in the context of NPT would ensue from the voluntary offers made by nuclear-weapon States to submit their peaceful nuclear activities to Agency safeguards.

65. The Agency could also contribute to disarmament if enriched uranium intended for military purposes could be made available for peaceful uses through the medium of the Agency. According to a paper presented at the Fourth International Conference on the Peaceful Uses of Atomic Energy held in Geneva in September 1971, there would be a world-wide shortage of enriched uranium and a slowing down in the peaceful uses of atomic energy unless new enrichment plants were established before 1982. The release for peaceful uses of enriched uranium stockpiled for military uses would not only ease international tension but would also partly alleviate the shortage of enriched uranium.

66. The Agency's role had become increasingly onerous and its activities more diversified. Therefore, it would do well to modify its structure to ensure adequate freedom of action. The Japanese delegation hoped that the amendment to Article VI.A-D of the Statute would obtain a sufficient number of ratifications for it to come into force at the earliest possible date.

67. Mr. HAUNSCHILD (Federal Republic of Germany) was gratified at the choice of Mexico City as the venue of the General Conference session, and on behalf of his delegation thanked the Mexican Government for its generous invitation.

68. Safeguards, in view of their political significance, were of particular importance to the Federal Republic of Germany. Since the last session of the General Conference his Government had participated actively in the negotiations for a verification agreement in connection with NPT between EURATOM, Belgium, the Federal Republic of Germany, Italy, Luxembourg, the Netherlands and the Agency. He recalled that the Federal Republic of Germany and the other participating States Members of EURATOM had undertaken not to ratify NPT before the conclusion of such an agreement. Its approval by the Board of Governors and by the Council of Ministers of the European Communities would enable the Government of the Federal Republic of Germany to sign the agreement and to submit it, together with NPT, to Parliament for approval. The new agreement was all the more important by virtue of the fact that there were 19 nuclear power plants and many other nuclear installations in operation in the five EURATOM countries, whereas thus far there had been only seven nuclear power stations subject to NPT safeguards in the entire world.

The agreement would thus establish close co-operation in the field of safeguards between the Agency and EURATOM, as a result of which the purposes of NPT could be fulfilled without impairing the interests of the European Communities and with the avoidance of duplication of safeguards and of waste of the Agency's resources.

69. The Government of the Federal Republic of Germany was confident that the countries which had waited to see the outcome of the negotiations between the Agency and EURATOM would also become party to a safeguards agreement. Moreover, it hoped for the early conclusion of the negotiations between the Agency and the nuclear-weapon States which had voluntarily agreed to apply Agency safeguards to the use of atomic energy in their industrial activities, as that would play an important role when the Parliament considered the agreement and NPT.

70. With the growth of nuclear commerce and industry, the safeguards provisions regarding export operations were gaining increasing significance. However, they should not be allowed to distort international trade through the application of practices that were at variance with one another. The Government of the Federal Republic of Germany hoped that a consensus could be reached on the scope and modalities of application of safeguards in such cases.

71. Referring to safeguards techniques proper, he recalled that the Federal Republic of Germany had for many years sought to perfect the procedures for their application. The results obtained to date had already contributed decisively to the effectiveness of safeguards and to a reduction in their cost. With the rapid extension of safeguards it would be important to continue work in that direction.

72. Turning to the activities of the Federal Republic of Germany within the Agency's field of interest, he said that his country was about to begin its fourth atomic energy programme, for the years 1973-1976. The production of nuclear power was about to become a profitable sector of the national economy: 22 nuclear power plants with a total output of 11 000 MW(e) were operating, under construction or on order. According to forecasts, the total power output by 1980 should be 25 000 MW(e), which would be equivalent to one third of the total production of electricity in the country. Almost all the plants used light-water reactors which were able to compete with conventional power plants. Several orders for plants had already been received from abroad.

73. Research would be continued on advanced reactors, i.e. the high-temperature reactor and the sodium-cooled fast breeder. Particular emphasis would be placed on uranium enrichment and the treatment and disposal of radioactive waste. In the light of progress to date, there was no doubt that private industry in the Federal Republic of Germany would be able to carry out an increasing share of the future development.

74. Furthermore, the Federal Republic of Germany intended to promote international co-operation by Governments and private industry, and particularly to co-operate more closely with its European neighbours, taking into account that all large Government-supported projects were already carried out jointly with foreign partners. Research on safety would also be intensified, since the responsibility for safety was devolving to an increasing extent on the Governments of industrial countries, in addition to their promoting role.

75. With regard to the Agency's programme for 1973-78, he considered the list of priorities to have been satisfactorily established. The programme appeared to be well balanced and deserved approval.

76. The draft budget for 1973 provided for stabilization of the number of staff posts and an increase in expenditure of 8.8%. That seemed to be a reasonable increase in view of the general rise of prices; thus, the delegation of the Federal Republic of Germany was prepared to accept the budget. Nevertheless, it wished to make a few remarks on the subject. Seventy-five per cent of the Agency's funds were applied to staff and administration, leaving only a limited margin for operational activities. Special priorities had to be established even for areas of recognized importance and the Secretariat should continue its efforts to co-ordinate the Agency's activities with those of other international institutions in order to make optimum use of the limited resources available. The Agency's draft programme indicated that contacts existed or would be established with EURATOM not only in the field of safeguards but also in many other sectors. In view of the importance of EURATOM's activities, the time had come to conclude a relationship agreement with that organization.

77. Radiological protection had not been one of the principal subjects discussed at the Stockholm Conference but the Agency rightly considered it an important question and the budget accordingly provided for a 20% increase in expenditure for nuclear safety and environmental protection.

78. The development of nuclear energy depended closely on the training of scientists and technicians. Priority should therefore be given to encouraging experts in developing countries to carry out work which had a practical application. It would be in the interest of such countries to use those nuclear techniques which could directly contribute to the improvement of living conditions. Isotopes and radiation techniques were already being applied in many practical ways at relatively low cost. Nuclear plants could also provide great advantages for developing countries once certain questions, relating mainly to the size of the facilities and the investment required, had been solved. Thus, industrial countries should promote the development of new techniques which were needed specifically by developing countries.

79. The Federal Republic considered that technical assistance should continue to be one of the main tasks of the Agency, and was prepared to contribute about \$200 000 to the General Fund for 1973, a proportion of the target corresponding to its share of the assessed budget. It was to be observed, however, that such payments gave only an incomplete picture of the voluntary contributions of certain Member States. The Federal Republic had, for example, provided training cost-free for 50 Agency fellows in 1971. In the same year it had sent 32 experts to other Member States, three times more than in preceding years, and intended to continue along those lines. The Federal Republic had donated a training reactor to the National University of Mexico and would supply a gamma irradiation plant to Peru to control harmful insects. The IAEA/FAO/Federal Republic of Germany Joint Programme to improve the protein content of certain plants had been initiated in 1971 and the Federal Republic would contribute approximately \$1 million for it over a period of five years. It had also provided experts and financial aid for the Agency's market survey study relating to nuclear power stations in developing countries. Altogether the Federal Republic had contributed approximately \$500 000, more than 14% of the total volume of voluntary contributions in cash and in kind, which gave it second place among contributing countries.

80. The amendment to Article VI of the Statute would enable developing Member States to be more broadly represented on the Board and would allow several industrial countries that were actively collaborating with the Agency to serve on the Board. The Federal Republic was among them, and wished to have an appropriate voice in the Agency's governing bodies. It therefore urged Member States which had not yet done so to accept that amendment at the earliest date, in order to adapt the Agency's structure to present-day requirements and ensure that its successful work would continue.

81. Mr. OGULANA (Nigeria) joined with other delegates in expressing his appreciation of the hospitality offered by the Mexican Government and people to the participants in the sixteenth regular session of the General Conference. The choice of Mexico City showed that the Agency was increasingly directing its attention to the advantages the Third World could derive from nuclear technology.

82. The Agency was judiciously planning its future activities and had taken a wise initiative in conducting the market survey relating to power reactors for selected developing countries with the aim of determining the potential role of nuclear power in those countries.

83. However, his delegation noted with concern that the Agency's overall programme was diminishing; the situation with regard to technical assistance was particularly serious since the present target of \$3 million, if met, would have a purchasing power in 1972 equal to \$2 million in 1962 (the target set for that year). Also of great

concern was the decline in expenditure under the Regular Budget on promotional activities such as food and agriculture, life sciences and physical sciences.

84. The Nigerian delegation hoped the more advanced countries would augment their voluntary contributions to the General Fund so as to assist the Agency in providing appropriate technical assistance to developing countries, an obligation which constituted one *raison d'être* of the Agency.

85. The process of industrialization was complex and the development of nuclear industry was the most difficult aspect of it; however, no country could afford to ignore that process. The solution lay not in transferring technology but rather in establishing at the local level the competence necessary for the application of nuclear technology. In order to accomplish that it would be necessary to implement a research and development programme and make periodic technological forecasts. Although in the first stages technological knowledge would have to be imported and adopted, the research programme should always aim at replacing importation and establishing a creative scientific infrastructure. Such a method of technological development would also enable the country concerned to identify its needs and better absorb external aid.

86. With regard to technical assistance provided by the Agency in the field of nuclear power, it would be preferable for the receiving country to determine its own needs, satisfy a portion of them itself and approach the Agency for the rest. Only through that approach would mankind avoid the situation described by the President of Mexico at the opening of the session in the following terms: "The exclusive enjoyment of the fruits of scientific progress by those countries which have attained the highest level of industrial development would be at variance with the universality of human culture." [9]

87. Mr. MALU wa KALENGA (Zaire) congratulated the President on his election and was pleased to note that Mexico had done its utmost to provide all the participants with the facilities necessary for the proper performance of their work. On behalf of his delegation he thanked the Mexican Government for its warm and friendly hospitality.

88. At the present session the General Conference had before it a particularly important document - GC(XVI)/485 - which presented the Agency's programme for 1973-78 and budget for 1973. It was a carefully prepared document and was certainly most welcome inasmuch as it gave Governments interested in the Agency's activities an accurate idea of the general lines of work which the Agency proposed to undertake in order to promote the peaceful uses of atomic energy.

89. Although the Secretariat deserved much praise for the work it had produced, the

document nevertheless reflected certain management policies which could not be endorsed by his delegation.

90. He would mention only the example of technical assistance. Under the programme established by the Secretariat the cost of technical assistance would continue to be covered almost exclusively from the voluntary contributions of Member States (Operating Fund II). [10] However, the Agency had rarely achieved the targets it had set for voluntary contributions to the General Fund.

91. As a matter of fact, the Agency itself estimated that the present target of \$3 million would be met only to the extent of 80%. That situation, coupled with monetary devaluation, meant that only 40% of the demand for experts and material could be satisfied.

92. The situation was most likely to worsen. Indeed, several countries had informed the Agency that they did not intend to increase their contributions in the future, and some countries had even announced appreciable reductions in the payment of their shares.

93. The technical assistance provided by the Agency would thus continue to diminish year by year, unless it was decided to augment significantly the proportion paid for from the Regular Budget.

94. Between 1958 and the end of 1971 the Agency had provided technical assistance, financed from its own and other resources, whose value was estimated at more than \$39 million. Of that amount \$29 million had been devoted to experts' services and fellowships, and \$10 million - a quarter of the total - to the provision of technical equipment.

95. Now that nuclear power was coming of age in most developing countries, his delegation felt that the proportion of assistance in the form of equipment should be increased and assume preponderance. The Agency should, first and foremost, provide equipment designed to enable the research workers who had been trained during the past decade to get on with their work. Moreover, the budgetary distinction between "experts" and "equipment" should be eliminated. Every country should be able, if it so desired, to switch from the provision of an expert to the supply of equipment.

96. With regard to other Agency programmes, his delegation would like to see the Agency encourage, a bit more than in the past, the preparation of summaries of the results obtained from the use of isotopes and radiations in various scientific and technological areas.

97. In the period from 1958 to 1971 the Agency had concerned itself only marginally with research of special interest to Africa; it had not, for

[9] GC(XVI)/OR.151, para. 23.

[10] GC(XVI)/485, Table V.3.1.

example, organized a single symposium in Africa on matters of particular concern to African countries. It was time for that gap to be filled. In food and agriculture, for instance, the Agency could play a decisive role in the economies of African States if it decided to encourage research on African varieties of plants, insects and food products.

98. With regard to other items of interest to the General Conference, his delegation was pleased to note that negotiations for safeguards agreements with Member States in connection with NPT were progressing satisfactorily.

99. A less satisfactory matter was the ratification of the amendment to Article VI, A-D of the Statute, approved by the General Conference two years ago. The Members that had accepted that amendment were still relatively few, and the Agency would do well to undertake a campaign designed to obtain the number of acceptances necessary so that the new version of Article VI could be brought into force in September 1973.

100. In 1972 Zaire had completed the construction of a TRIGA Mark II reactor with a nominal power of 1 MW, capable of pulses up to about 1600 MW. Several friendly countries had contributed financially to that project, especially the United States and Belgium, and he wished to express his gratitude to them.

101. In conclusion, he drew the attention of the Conference to the problem of civil liability and other questions of responsibility in the event of nuclear accidents. So far the Vienna Convention on Civil Liability for Nuclear Damage [11] had not yet come into force for lack of a sufficient number of ratifications. The Agency should undertake large-scale action in that area in order not to compromise seriously the progress of nuclear energy in developing countries. The Organisation for Economic Co-operation and Development could perhaps permit non-member States to adhere to the Paris Convention on Third-Party Liability in the Field of Nuclear Energy, which had the advantage of being applied in a particularly dynamic manner.

● The meeting rose at 6.25 p.m.

[11] Reproduced in Legal Series No. 2 (STI/PUB/54).