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ONE HUNDRED AND TWENTY-FOURTH PLENARY MEETING

Held at the Neue Hofburg, Vienna
on Friday, 27 September 1968, at 3.20 p.m.

President: Mr. SANDOVAL VALLARTA (Mexico)

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* GC(XII)/390.

The composition of delegations attending the session is given in document GC(XII)/INF/103/Rev.2.

GENERAL DEBATE AND REPORT OF THE BOARD OF GOVERNORS FOR 1967-68 (GC(XII)/380, 389) (continued)

1. Mr. da COSTA RIBEIRO (Brazil), referring to the financial resources that would be available to the Agency in 1969, said that whereas the Regular Budget was increasing due to the expansion in a number of activities, especially safeguards activities, the Operational Budget — on which the technical assistance programme depended — showed an alarming tendency to remain stationary and even to decrease. Serious attention would have to be paid to that key problem in future, with a view to ensuring that the increase in funds allocated for direct technical assistance should be proportional to increases in other programmes, especially those relating to the Agency's control functions.

2. Brazil's position vis-à-vis the Agency's safeguards system had been consistent over the years: it approved the system in force and had concluded a trilateral agreement[1] which would come into force as soon as possible. Similarly, it had secured an improvement in the earlier, partial safeguards system through a series of amendments. In other international gatherings, Brazil had raised objections to a comprehensive system of safeguards. He would not repeat the argument which his country had put forward at Geneva and which had prevailed in the Treaty of Tlatelolco, namely, that the motives inspiring countries which wanted to use nuclear explosions for peaceful purposes were quite legitimate. It should be emphasized that the main reason for Brazil's attitude was the desire to eliminate obstacles of any kind to the development of the Brazilian programme for the peaceful applications of nuclear energy, as summarized in document GC(XII)/INF/101/Rev.1.

3. As one way of involving the Agency more closely in the development of power reactors, he recalled the suggestion that the Agency should get in touch with world banking organizations for the purpose of obtaining financing for projects submitted by developing countries[2]. It would be for the Director General to decide what means were most suitable for making such preliminary contacts, reporting in due course to the Board of Governors on his action.

4. Another suggestion was that advantage should be taken of the Agency's General Conference to encourage meetings on technical matters with the specialists who would be attending. If that idea met with the approval of the other delegations, it could be further elaborated after the fourth United Nations conference on the peaceful uses of atomic energy, which would probably be held in Geneva in 1971[3].

5. The Agency's Programme for 1969-74 (GC(XII)/385, paras 11-15 and 32-623), as prepared by the Secretariat, merited high praise, even though some slight revisions might be made in it. In particular, paragraphs 463-598, dealing with safeguards, should be more detailed, so as to provide fuller information for the countries concerned. As for the report of the Board of Governors for 1967-68 (GC(XII)/380 and 389) it provided Member States with a clear and succinct summary of the Agency's activities during the past financial year.

6. Lastly, he wished to reiterate his optimism with regard to the Agency's future. Despite the almost chronic difficulties which stood in the way of meeting the legitimate hopes of the developing countries, gradual progress towards fulfilling those aspirations could be perceived. Brazil sincerely hoped that that trend would be accelerated.

7. Mr. PRETSCH (Federal Republic of Germany) observed that the Conference gave the Member States a welcome opportunity to appraise the work of the Agency which was reviewed in the report of the Board for 1967-68. The delegation of the Federal Republic of Germany approved the annual report.

8. The draft programme for 1969-74 submitted to the General Conference was a valuable document. The large number of Agency symposia and scientific reports played an important part in furthering a world-wide exchange of information and knowledge. In certain fields co-operation between Member States could lead to the co-ordination of research efforts and to a dovetailing of legal rules and standards.

9. The Agency faced new tasks with regard to the International Nuclear Information System (INIS). The International Laboratory of Marine Radioactivity at Monaco, too, had an important part to play in co-ordinating scientific information. In a number of scientific and technological fields, the Agency maintained close contacts with other nuclear energy organizations. In this connection, he believed the exchange of information with the European Atomic Energy Community (EURATOM), for example, could be more extensive.

10. The fourth international conference on the peaceful uses of atomic energy, which would probably be held in Geneva in 1971, would give new impetus to world co-operation. The broad agenda prepared for that Conference by the United Nations Scientific Advisory Committee listed the low-cost and large-scale generation of nuclear energy as one of the

1) INFCIRC/110.

2) See document GC(XII)/COM.1/108.

3) See General Assembly Resolution 2309 (XXII).

main subjects for discussion, and to that might be added some consideration of reactor safety and selection of sites for nuclear power stations.

11. The Agency's second most important function was to render assistance in the use of atomic energy to the developing countries. The Agency could do great work in that direction by providing experts and fellowships. The International Centre for Theoretical Physics at Trieste, which had proved to be an excellent centre for the post-graduate training of physicists from developing countries, was very important in that connection. The funds provided for technical assistance should be increased so that laboratories in developing countries could be awarded new research contracts, giving extra stimulus to their research activity. The Agency's assistance to the developing countries must not, however, be impaired by growing demands in other fields, including that of safeguards.

12. The demands made on the Agency with regard to safeguards, its third most important function, had been increasing in recent years, and would continue to do so. The present safeguards systems had emerged at a time when relatively small quantities of fissionable material were used in reactors and other nuclear facilities of individual countries, mainly for scientific purposes. The Agency's safeguards had accordingly been applied chiefly to single nuclear facilities and to limited amounts of fissionable material which were supplied through the Agency or under safeguards agreements.

13. Now that nuclear energy had reached the commercial stage in several countries, the basic safeguards needs had changed considerably. In more and more countries, large power reactors, conversion plants, fuel-element fabrication plants and reprocessing plants were being constructed. In the more distant future, isotope separation plants might be added. It was not only the number and capacity of facilities which was growing, but also the quantity of fissionable material circulating between them. The fuel cycle was the point where economic considerations and technical safeguards requirements met. It was obvious that the classical safeguards methods would have to be improved in order to meet the new quantitative and qualitative requirements. What was needed was:

(a) Comprehensive safeguards covering the entire fuel cycle;

(b) Rationalized safeguards methods to keep the number of inspectors and costs within reasonable limits; and

(c) Objective safeguards to ensure that there would be no hindrance either to the scientific, technological and economic development of nuclear energy in Member States or to international co-operation, including the exchange of nuclear materia and equipment.

14. The concentration of safeguards on the flow of nuclear material at strategic points and the future use of instruments were essential to an effective safeguards system. Thorough research and development work would be required if safeguards were to continue to be effectively applied.

15. The operational systems analysis in the field of safeguards outlined in paragraph 570 of the Programme should be given priority by the Secretariat and should be performed in co-operation with experts from Member States. The relative importance of the different phases of the fuel cycle must be assessed by means of analysis, and a cost/benefit study would be necessary. That was the only way to establish the basis for effective and economic control within the available financial and manpower resources.

16. At the Karlsruhe Nuclear Research Centre research and development work was being done on safeguarding the flow of fissionable material, and that work would continue in co-operation with the Agency and interested Member States.

17. More than 50 delegates to the Conference of Non-Nuclear-Weapon States[4] had recently visited Karlsruhe, where the Federal Government had explained its ideas and showed several laboratories where experimental safeguards research was being pursued. His Government would be pleased to invite those delegations from States Members of the Agency who were interested in Karlsruhe's safeguards research and development work to visit the Centre.

18. The Agency's Budget for 1969[5] had been discussed in detail by the Board of Governors and provided for a 7.39% increase in expenditure over 1968, but since there was a cash surplus from the preceding year, Members' contributions would be raised by 5.2% only. His delegation agreed with the budget proposals, although the addition of 39 posts for 1969 seemed rather large. New staff requirements should be met to a greater extent by reorganization within the Secretariat.

19. He then turned to the Federal Republic of Germany's own nuclear programme, which for the years 1968 to 1972 provided for government expenditure totalling $1250 million. Emphasis in fundamental research was being placed on high-energy physics and on nuclear solid-state research, while in nuclear engineering the emphasis was on

4) Held at Geneva from 29 August to 28 September 1968.

5) GC(XII)/385, paras 16-31 and 645-685, and 385/Corr.1.

the development of fast-breeder reactors, gas-cooled high-temperature reactors and fuel cycle technology. As of 1 July 1968, nuclear power stations with a total output of 2200 MW(e) were under construction or in operation. The nuclear ship "Otto Hahn" was expected to sail on its maiden voyage on 11 October. German industry was able to offer nuclear power stations at home and abroad at competitive prices.

20. His Government again intended to make a voluntary contribution to the General Fund corresponding to its percentage share of the Agency's budget.

21. For the year 1969 the Federal Government would offer about ten fellowships, and would like to establish or continue co-operation on a partnership basis between laboratories in Germany and those in other Member States. The Nuclear Research Centres at Karlsruhe and Jülich were prepared to grant a number of additional fellowships, offering training opportunities in practically all fields of nuclear research and development. Research institutes were also willing to receive more fellows from the Agency. The Federal Government would be pleased to nominate more experts specializing in different fields to provide technical assistance to interested Member States on behalf of the Agency. He was happy to note that the Agency would be holding a Symposium on Advanced and High-Temperature Gas-Cooled Reactors at the Jülich Nuclear Research Centre from 21 to 25 October.

22. He hoped that the Agency would avail itself more of the experience of those Member States which in recent years had made considerable progress in nuclear research and technology and invite them to play a bigger part in its work and its decisions. Such countries should be permanently represented on the Agency's Board of Governors. Since 1962, when it had been decided to increase the number of seats on the Board by two, the membership of the Agency had risen from 76 to 98 and was expected to increase still further. For that reason, too, it would seem timely to expand the Board by an appropriate number of seats.

23. Mr. YOO (Republic of Korea) expressed his delegation's appreciation to the Director General and the Agency's staff for their achievements in and contributions to the peaceful uses of nuclear energy. It also wished to welcome the three new Member States: Liechtenstein, the Niger and Zambia.

24. He would not dwell on the importance of the Treaty on the Non-Proliferation of Nuclear Weapons[6] and its implications. He merely wished to point out that the Republic of Korea had been one of the first countries to sign the Treaty.

25. He proposed to describe some of the work done by Korean nuclear scientists and engineers during the past year. Most of it had been carried out in very close co-operation with experts of the Agency. As one of the fastest-developing countries, Korea had of late also made remarkable progress in the peaceful uses of nuclear energy.

26. As already known, Korea was using its small research reactor for a number of purposes and with a variety of benefits. Radioactive colloidal gold and iodine for medical applications were being produced under Government licence, together with some 30 types of radioisotopes for industrial and experimental purposes. Radioactive cobalt glass and zinc glass, irradiated in the reactor and ground to the size of the sand in the Korean harbours, were being used to determine the drift movements of sand on the sea bed.

27. Recently Korean engineers had made successful use of gamma radiography in the welding of the country's largest cement manufacturing kiln. In co-operation with the Argonne National Laboratory in the United States, Korean scientists had designed a small neutron chopper, which was to be installed at the end of 1968 and used in various thermal neutron experiments. Assistance in the training of neutron diffraction experimentalists had been obtained through the India-Philippines-Agency project[7].

28. All those activities had strengthened the conviction that a research reactor of higher power was required and it had therefore been decided to raise the existing reactor capacity from 100 kW to 250 kW. The design and computation work involved was being carried out by Korean specialists and was proceeding according to schedule. Criticality would be reached early in 1969. Another important development had been the decision to install a Triga Mark III reactor in Korea. That facility, which was to go critical in 1971, would have a capacity of 2 MW, with the possibility of being upgraded to 3 MW by means of a forced cooling system.

29. As regards nuclear power generation, the country's long-range electric power programme called for the installation of two 500 MW(e) power reactors, to be commissioned in 1974 and 1976 respectively. The relevant feasibility study was to be completed by the end of October 1968 and preliminary proposals were already being requested from the world's leading power reactor manufacturers. He wished to express sincere thanks to the Agency and to the

6) This Treaty, which is the subject of Resolution 2373 (XXII) adopted by the General Assembly of the United Nations on 12 June 1968, is subsequently referred to in this record as "the Treaty" or "the NPT".

7) INFCIRC/56 and Add.1.

delegates of Member States which had provided valuable assistance and co-operation in connection with that programme.

30. Developments in nuclear medicine included plans for the operation in rural areas, as from 1969, of six mobile units to provide cost-free diagnoses and subsequent radiation therapy for uterine-cancer and breast-cancer patients. The work would be extended later to persons of both sexes suffering from stomach and liver cancer. It should be mentioned in that connection that the latest mortality statistics showed that cancer was the third highest cause of death in Korea.

31. In radiation breeding research, Korean agricultural engineers had developed two new breeds, a soya bean plant and a rice plant which had stronger stems and matured earlier, thereby satisfying a long-felt need in Korean agriculture. The new breeds were now being intensively tested.

32. In the coming year, a number of projects now under way were to be continued. Requests for some new projects had already been submitted to the Agency and it was hoped that they would be supported. The Government of the Republic of Korea also wished to have the pleasure of acting as host to an Agency conference.

33. Mr. HOCHSTRASSER (Switzerland) noted the smooth manner in which the Agency seemed to be functioning. The outstanding event of recent months had been the approval of the NPT by the General Assembly of the United Nations, a step based on the general recognition that the spread of nuclear weapons could be disastrous to the world. Unfortunately the NPT created a number of serious problems, which had been the reason for convening the Conference of Non-Nuclear-Weapon States. Since that Conference would end only on 28 September, it was too early to assess all its implications for the Agency. Members ought to have a chance, at the next General Conference of the Agency, to examine carefully its recommendations and implications.

34. The problems of special concern to the non-nuclear-weapon-Powers had already been touched upon several times during the debate. In the first place, he wanted to mention the safeguards system. His delegation was convinced that the Agency was — due to its experience and the competence of its staff — best suited to assume the safeguards responsibilities, resulting from the entry into force of the NPT. In view of the rapid spread of the peaceful applications of atomic energy and of the economic importance of that new source of energy, it was important for safeguards procedures to be simple, without losing their effectiveness. The Agency's present system was a useful start in that direction, but it would require adaptation in order to cope with the new situation and to make the fullest use of instrumentation for controlling special fissionable materials.

35. Particular attention would have to be devoted to the building up of an efficient corps of inspectors who would know only one allegiance — allegiance to their task. In order to achieve that, it would be necessary to offer long-term appointments and career opportunities in such a corps. Furthermore, competence and loyalty to the Agency, and not geographical distribution, should be the only criteria for selecting the staff for that particular activity.

36. A further problem in connection with safeguards existed with regard to the financing of controls. If all the nuclear activities of the non-nuclear-weapon Powers were subject to controls, it was obvious that the latter could not be considered simply as an insurance taken out by the buyers of nuclear reactors or other installations. The safeguards system had to be considered as a public service similar in character to the police, whose cost was supported by everybody.

37. His delegation was aware of the dangerous repercussions which the rapidly increasing cost of the safeguards system might have on the Agency's aid to developing countries, but he thought that a means would have to be found to cope with that situation which would not discriminate against nuclear power stations by burdening them with the cost of inspections. He hoped that the problems of safeguarding (of which he had mentioned only a few) might be resolved satisfactorily within the framework of the Agency.

38. Among the other tasks which might arise as a consequence of the NPT, the exchange of information was a further activity in which the Agency could play a useful role. The non-nuclear-weapon countries hoped that the Treaty would help to open up new sources of knowledge of importance in the peaceful uses of atomic energy. In view of that, it was particularly useful that the Agency was developing in INIS a computerized information system. The problem of keeping track of a vast amount of documentation and of putting it at the disposal of scientists and engineers efficiently was not one which related exclusively to nuclear energy activities. In medicine and in other sciences, documentation systems were either already in use or were being prepared. Since they would all require computers, he reminded those working on INIS that it was highly desirable that the specifications for the machines should be mutually compatible.

39. In the discussions on the NPT, the use of nuclear explosions for peaceful purposes had received great attention, although it would still take some time before the technology necessary for their widespread application became available. It would therefore seem to be wasteful to create a special new organization to deal with such explosions with responsibility solely in that field. The present staff of the Agency contained a number of scientists and engineers who could play a useful role when problems of nuclear explosions had to be dealt with. He therefore supported proposals to entrust the Agency with the tasks arising under Article V of the NPT, which provided that the potential benefits of nuclear explosions for peaceful purposes should be made available to non-nuclear-weapon States. It might be necessary, however, to adapt the organization of the Agency to cope with the new task. Such reorganization might possibly lead to the creation of a new Division with a special status reflecting its particular connection with the NPT.

40. In view of the sizable increases in the Agency's activities which might result from the NPT, budgetary problems would become even more acute. Expenditure had so far grown steadily in spite of the commendable efforts to streamline the administration and to avoid a too rapid expansion. Although rising deficits had created a budget squeeze in Switzerland, his country still approved the proposed budget and agreed also in principle with the programme for 1969-1974. Furthermore, the Swiss Federal Council had again decided to make a voluntary contribution in accordance with the recommendation of the 1961 session of the General Conference[8]. In addition, fellowships had been given for advanced training in Switzerland on a case-by-case basis and would continue to be so granted in the future.

41. The Secretariat ought to continue to do its best to keep the expansion of the budget under control. It might be necessary to introduce priorities to a larger extent than in the past and to reassign staff accordingly. But he also urged Members to ensure that their voluntary contributions should be in proportion to their assessed contributions to the Regular Budget and regretted that so many requests for assistance could not be met. The situation could only be changed if every country fully accepted its financial responsibilities with regard to the Agency's assistance programme.

42. He was happy that the United Nations planned to hold a fourth international conference on the peaceful uses of atomic energy, and hoped that that major event would take place in Geneva. The staff of the Agency would undoubtedly be entrusted with the preparation of the meeting.

8) GC(V)/RES/100.

43. Mr. ANDRZEJEWSKI (Poland) said that the year which had passed since the eleventh regular session of the General Conference had been characterized by increasing international co-operation within the Agency, with regard to the peaceful uses of nuclear energy, the provision of assistance to developing countries, the exchange of scientific and technical information and training in nuclear energy activities. He attached particular significance to the General Assembly's approval of the NPT and to its signature. The Council of State of the Polish People's Republic intended to give consideration in the near future to the ratification of the NPT, which would be the first world-wide agreement in the field of disarmament to comprise an effective international control system.

44. In his opinion, the most important aspect of the NPT was the fact that its non-proliferation formula effectively prevented the acquisition of nuclear weapons, for certain States persisted in their endeavours to obtain, directly or indirectly, de jure or de facto, access to nuclear weapons and to nuclear status.

45. He then proceeded to consider certain other aspects of the NPT which more directly concerned the Agency, particularly its provisions concerning the peaceful uses of nuclear energy.

46. The question of peaceful uses of nuclear explosives had given rise to considerable difficulties in the Eighteen-Nation Committee on Disarmament, the United Nations Political Committee and, recently, the Conference of Non-Nuclear-Weapon States. All nuclear explosives, without distinction, were covered by the NPT, which provided furthermore that all possible benefits from the peaceful use of nuclear explosives should be made available to all States parties to the NPT, without discrimination, through the appropriate international procedures. He believed that international co-operation as practised within the Agency constituted not only the sole possible solution, but also the only means of enabling countries lacking the necessary economic, technical and scientific resources to share the benefits of the peaceful applications of nuclear explosives. The attitude of the nuclear Powers in that connection was encouraging.

47. One of the cardinal points in the relevant resolution adopted by the General Assembly was that the NPT must be effective. Appropriate measures would have to be taken for that purpose, and the development of the necessary controls would be facilitated by the fact that international machinery already existed in the form of the Agency's safeguards system. The Polish Government was convinced that the Agency could fulfil with integrity and impartiality the important task entrusted to it under the NPT.

48. As far as inspections were concerned, the Polish Government was in favour of an Agency monopoly in that field, in accordance with the resolution adopted by the General Assembly. As the annual report of the Board of Governors to the Conference had rightly stressed, the safeguards system should encompass not only inspections of individual reactors, but also inspections of plants fabricating or reprocessing nuclear fuel. At the same time, new measuring techniques would have to be evolved, and fundamental and applied research relating to measuring instruments further expanded. A uniform system of administration, inspection, reports, measurements and other related matters would also have to be established.

49. He wished to congratulate the Director General and the Secretariat on the excellent work they had done in preparing the budget for 1969 and the programme for 1969-74; he noted with satisfaction that, in accordance with proposals made on previous occasions, a programme covering a period of several years had been worked out. It constituted an extremely valuable document which would facilitate the forward planning of certain of the Agency's activities and which could be revised as the need arose. As paragraph 14 of the programme rightly stressed, the conclusion of the NPT would mean a considerable growth of the Agency's safeguards responsibilities within the next few years; but the nature of those responsibilities was not precisely specified.

50. The installed power of nuclear plants had increased so enormously that the volume of fissile materials produced would soon be very great. As a result, its obligations with regard to inspection and safeguards would set the Agency considerable financial problems, as well as problems arising from the recruitment of experts. Those problems would call for a careful analysis and wise decisions both by the Secretariat and by the Board of Governors, as well as for additional efforts on the part of Member States. The extent of the requirements was gigantic and would necessitate fresh organizational and financial procedures.

51. As far as the annual report of the Board of Governors was concerned, he noted that technical assistance had been further expanded and that the expenditure shown under that heading had increased by 11.4% during the year under review. Such aid constituted one of the basic functions of the Agency, and he therefore hoped that that fruitful activity would be further developed in the future.

52. The Agency had also organized during the year about a dozen scientific symposia which had, as usual, been attended by numerous participants; two of the symposia had been held in Poland.

53. He was gratified to note the formation during the past year of the International Nuclear Data Committee, which had held its first meeting in Vienna and with which Polish scientists were actively collaborating. While the Polish delegation did not propose to express any reservations concerning the programme and budget for the following year, it wished to point out that the scope of certain activities would have to be revised in future. As the development of nuclear power progressed, closer attention and greater funds would have to be devoted to activities concerned with that form of power and to related matters. On the other hand, UNESCO, FAO and WHO should assume a greater role in financing activities relating to biology, the exact sciences, theoretical physics, nuclear medicine and radiobiology, and the Agency's budget should be correspondingly reduced. The Agency ought to adopt the principle of allocating larger sums to its main activities, while reducing the amounts to be spent on projects already well under way or which could be implemented or undertaken by other United Nations bodies. Poland was in favour of the establishment of INIS and wished that venture, which was of great international importance and extremely useful to Member States, every success.

54. The effect on the demand for foodstuffs of the continuous growth in the world's population — especially in the developing countries — might necessitate certain modifications of the Agency's programme, particularly the elimination of certain activities of marginal importance and the intensification of activities connected with the peaceful applications of ionizing radiations in agriculture and stockbreeding, the preservation and sterilization of foodstuffs, the increase of cereals production, etc. Another urgent matter was prospecting for water resources for drinking or agricultural purposes; no less important was the desalination of sea water and the purification of water and sewage, which was becoming an increasingly serious problem, especially in highly industrialized and densely populated countries.

55. In conclusion, he wished to pay tribute to the number and quality of the Agency's publications and to draw attention to the promptness with which the proceedings of symposia appeared.

56. If the Agency was to fulfil its obligations, it was imperative that all countries willing and able to contribute effectively to its activities should be allowed to participate in them: it was for that reason that Poland was in favour of the admission of the German Democratic Republic, which was the tenth industrial power in the world and one of the first signatories of the NPT.

57. The discussions in the General Conference showed that the course of socio-historical development presented States with major problems whose solution would have a considerable effect on the future of mankind. The NPT helped to solve those problems.

58. It was therefore the duty of all States, and also of the General Conference, to do everything in their power to ensure that the NPT was signed by as many States as possible, and ratified and implemented with the least possible delay.

59. Mr. N'GUEMA N'DONG (Gabon) said that his delegation had noted with great satisfaction the results achieved by the Agency during the past year — a historic one, since it had seen the acceptance by the General Assembly of the NPT, which had already been signed by more than 80 States. It appeared both necessary and desirable that the Agency should, within the framework of the NPT, agree to an extension of its responsibilities, a step which was in perfect accord with its own objectives. Its present resources and the support on which it could count should enable the Agency to meet those new obligations.

60. His delegation had listened with the greatest interest to the excellent statement by the Director General[9] and the statement by the representative of the Secretary-General of the United Nations[10]. It had observed that the Agency was becoming increasingly aware that the successful development of the peaceful uses of nuclear energy — which, it was hoped, would provide fresh opportunities for progress by the economically weak countries — might have the effect of widening the gap which separated the latter from the countries which were at present more advanced.

61. Gabon possessed considerable reserves of uranium ores, its liberal financial and mining legislation was designed to facilitate prospecting, and it was already making an important contribution to world supplies of the raw materials required for the generation of nuclear power. There were good grounds for hoping that that contribution would increase still further in future years.

62. However, Gabon benefited only to a minute extent from the possibilities offered by the atom, and the same applied to many new African States which did not even possess the necessary personnel or the economic resources to draw up a simple list of their requirements and their potentialities. It ought therefore to be a major aspect of the Agency's function to study the problems peculiar to the developing countries. In view of the extreme diversity of those problems there was a need for continuous assessment — which could be provided only by experts on the spot — if the Agency was to fulfil its task of co-ordination and assistance and the Governments concerned were to be enabled to draw up their own programmes for personnel training and technological development.

63. The delegation of Gabon approved the Agency's budget and noted that, in accordance with suggestions put forward by certain delegations, an ever-increasing number of fellowships would be made available, especially to developing countries. Finally, it was gratified to know that three new States, of which two were African, would in future participate in the Agency's activities.

64. Mr. QUARTEY (Ghana), after sincerely welcoming Liechtenstein, the Niger and Zambia to membership of the Agency, said his delegation noted from the Director General's statement the preparedness of the Agency for the role it might be called upon to play within the framework of the NPT. It believed that role to be an important contribution which the Agency could make towards the fulfilment of one of its chief aims, that of assisting Member States to reap the fullest benefits from the peaceful application of atomic energy and bringing stability to a world in which moral responsibility was in danger of losing a needless race with scientific potential.

65. Since the establishment of the Agency certain important changes had occurred in the general scientific awareness and technological standing of Member States, membership of the Agency had greatly increased and the political status and responsibility of a number of countries had altered. The time had come, as his delegation had already indicated at the previous session[11], to review certain portions of its Statute, particularly the composition of its Board of Governors, in order to make the Board more representative of Member States and conform more closely to the scientific and political criteria laid down. Such a review could best be initiated within the framework of the Agency itself, and the earlier it was carried out, the better it would be.

66. The delegation of Ghana welcomed the start which the Agency had made towards long-term programming and budgeting. In its view, the programme objectives set out for the six-year period were desirable goals. However, whereas the budget over the projected period showed a steady increase, the proportion of expenditure on technical assistance decreased progressively. Neither the developing

9) GC(XII)/OR.119, paras 29-53.

10) Ibid., paras 54-67.

11) GC(XI)/OR.117, para.18.

countries, nor, for that matter, the Agency itself, could possibly view that as a happy state of affairs. Undoubtedly, the atomic energy programmes of many developing countries depended on the technical assistance provided by the Agency. As far as his Government could see, its own programme in Ghana would continue to depend on that assistance for some time to come.

67. His Government was grateful for the inclusion of one of its officers in a team of specialists from developing countries which the Agency had taken on a tour of radiation protection work in three East European countries in April 1968. In its view, such arrangements were of great practical value, and he would welcome any intention by the Agency to organize similar tours to provide experience in other areas of training.

68. Ghana welcomed the increasing acceptance of the need for flexibility in the application of the "guiding principles" of the technical assistance programme in order to permit, in appropriate cases, the provision of equipment without the services of an expert.

69. On the other hand, it deplored the continuing inadequacy of technical assistance funds, largely owing to the failure of some Member States to contribute in proportion to their assessed contributions. For 1969 Ghana was for the first time able to pledge a voluntary contribution in excess of its regular assessment.

70. At the last session of the General Conference he had reported that Ghana was currently reappraising its atomic energy programme, in order to achieve the optimum balance between it and other important areas of national development[12]. Pursuant to that reappraisal, his Government had informed the Agency that in the present situation the establishment of a research reactor had been indefinitely postponed. That decision, however, did not mean a cessation of all other activities in the peaceful applications of atomic energy. Indeed, Ghana was in the process of establishing a National Radioisotope Applications Centre. The main activity of the Centre would be to provide the necessary supporting services for institutions engaged in work involving the use of isotopes in agriculture, medicine, industry and other fields. However, the Centre should also be able to carry out a specific piece of research which might become necessary in the work of any particular institute.

71. Ghana's technical assistance requests under its new programme had been addressed to the Agency under the 1969 Regular Programme. Of course, it appreciated that the Agency's funds were limited. He must, however, again stress the great extent to which Ghana's programme depended on the Agency's technical assistance. Ruthless application of routine procedure could well bring down the axe on some of Ghana's requests. But in special cases where a new programme was being started, the Agency had been known to consider favourably the programme as a whole, rather than as made up of so many single experts or so many single bits of equipment. It was in that knowledge, and mindful of the devoted service of the Director General and his staff, that he looked forward with confidence to a positive response from the Agency.

72. Mr. USMANI (Pakistan) recalled that less than three years after the construction of Enrico Fermi's first nuclear pile the world had witnessed the emergence of the first nuclear-weapon State. Five years after that, a second State had acquired nuclear weapons, and there had been three further additions to the so-called "nuclear club" in the intervening period. With the present rate of development of nuclear technology, the question that loomed large on the horizon was whether the trend to proliferation would be accelerated during the next decade or so or whether effective joint action would be taken to arrest that dangerous trend. Public opinion throughout the world had welcomed, as first steps towards sanity, conclusion of the partial test ban treaty during 1963, and also the submission to the General Assembly of the United Nations of an agreed draft text of the NPT.

73. Pakistan had voted in favour of the General Assembly Resolution commending the text of the NPT. It had also consistently urged in the General Conference that States Members of the Agency should volunteer to accept Agency safeguards in respect of all their peaceful principal nuclear facilities, whether established with or without Agency assistance — though so far to no avail. Some Members were unwilling to submit their principal nuclear facilities to Agency safeguards unless all Members, whether nuclear-weapon States or non-nuclear-weapon States, did the same. To them the principle of non-discrimination was more important than the principle of non-proliferation. There were others, like Members of EURATOM, who thought the safeguards system which they had evolved as parties to the EURATOM Treaty was sacrosanct and that they were therefore under no obligation to negotiate any agreement on safeguards with the Agency. Finally there were those whose industrial infrastructure was so far advanced that they could establish principal nuclear facilities on their own territories without Agency assistance, with the result that unless they voluntarily placed such facilities under Agency safeguards, they could continue to breed, separate and accumulate plutonium which they could then divert, whenever they so chose, for the production of

12) Ibid., para.19.

nuclear weapons. And they wished to retain that "nuclear option". It was accordingly with great satisfaction that Pakistan noted that where the Agency's Statute failed, the NPT succeeded in that Article III made it obligatory for the non-nuclear-weapon States parties to the Treaty to accept safeguards, as set forth in an agreement to be negotiated and concluded with the Agency in conformity with the Agency's Statute and its safeguards system. It was to be hoped that Member States which were advanced in nuclear technology, the so-called "near-nuclear States", would sign the NPT and so give a lead to all other non-nuclear-weapon States, many of which were sitting on the fence to see how the wind blew. And only if the response of the non-nuclear-weapon States was definite and positive would it be possible to bring the pressure of world opinion to bear on the nuclear-weapon States to stop vertical proliferation and move gradually towards nuclear disarmament.

74. The NPT had thrown a very heavy responsibility on the Agency's shoulders in regard to safeguards, and the Agency should immediately equip itself to do some effective and persuasive "salesmanship", so that its safeguards system might be accepted by a large number of non-nuclear-weapon States without fear of industrial espionage. The present system was based on a very complex document and suffered from the defect that even conventional equipment came within its scope. It was that exaggerated suspicion on the part of those who had drawn up the system that prevented many Member States from seeking the Agency's assistance. He urged the Inspector General to study the report on the first inspection of the Tokai Mura power reactor published by the Atomic Industrial Forum of Japan so as to find means of countering the pertinent arguments adduced therein concerning the waste involved in the Agency's inspection system. Unless the Agency's safeguards were simplified without sacrificing their effectiveness, the Agency would not be able to negotiate a workable system with advanced or less advanced countries. In particular, they should be brought into line with the NPT, Article III.2 of which, by referring to "specially designed" equipment or material, explicitly exempted conventional items from safeguards. The Agency should also seriously examine the need for giving inspectors intensive and extensive training in various legal, technical and administrative aspects of their work.

75. While it was perhaps inevitable that the Agency's increased safeguards responsibilities should give rise to increased costs, there seemed no reason why Member States which had virtually no nuclear programmes or facilities of their own should contribute to the additional cost on the basis of the present United Nations formula. His delegation urged the Director General and the Board to examine the question carefully with a view to proposing an acceptable formula whereby the extra funds would be raised from Members on the basis of the respective size of their nuclear power programmes.

76. Finally, it was the general consensus of the non-nuclear-weapon States that the executive organ of the Agency responsible for administering safeguards under the NPT must have a more representative character than it had been possible to conceive for it 15 years previously. Of the 25 Members of the Board, 13 were permanent or semi-permanent, and there were various well-known anomalies and anachronisms in the provisions governing election of the remaining 12 by the General Conference. While the Board, as constituted at present, had functioned efficiently and impartially, Pakistan feared that with a large number of nuclear facilities in different parts of the world subject to Agency safeguards, political implications and overtones which called for a broader base and a more democratic system of election might become apparent in its work. He therefore urged that the Board itself should undertake a fresh study with a view to making itself more representative of the membership as a whole.

77. Though he was sure neither the General Conference nor the Board would allow the increased emphasis on safeguards to affect the Agency's technical assistance and other programmes, there was already an alarming trend towards reducing the voluntary contributions from which technical assistance was financed. In 1967 barely one third of the requests for technical assistance had been met. Moreover, in order to handle no more than $2 million worth of technical assistance, some $500 000 had been needed to pay the staff concerned. Yet the same number of staff could probably handle funds worth at least $10 million. The Director General should therefore make a wholehearted attempt to bring the level of voluntary contributions up to that required to attain the target fixed by the General Conference.

78. He hoped he would be forgiven if he did some plain speaking about the importance of atomic energy to the economic development programmes of the developing countries of the world. Among such countries there was a general feeling, largely fostered by their own atomic energy authorities and, at the international level, by the Agency, that atomic energy, apart from giving them enhanced status and prestige, was the panacea for all their ills, whether in agriculture, industry, power generation, health or education. In fact, any country's nuclear programme was twofold in nature. On the one hand it dealt with the harnessing of the fission energy of uranium or plutonium atoms for the production

of heat, electricity or explosions, on the other with the application of radiation from the resulting radioactive materials to solve problems in agriculture, medicine, hydrology, entomology, industry and so on. It was important to be under no illusions: the second type of activity, though very important, could only be an aid or a means to an end, and not an end in itself. In agriculture, for example, there had so far been no major break-through as a result of the use of radioisotopes and radiation sources. In Pakistan, the production of wheat and rice had been tripled by using improved varieties developed by conventional means. Similarly, there had so far been no success in using radiation techniques to discover new sources of underground water or oil in arid areas, nor had any major pest been eliminated by the sterile male technique, with the sole exception of the screw-worm fly on an island off the United States coast. The same was true of medicine and other fields. In short, the isotopic technique helped, but did not solve the problems.

79. There remained the generation of cheap electricity. The developing countries incontestably needed electric power for lighting homes in rural areas, for working simple machines and pumps to lift water from underground sources in order to augment the irrigation facilities, and for running small and medium-scale cottage industries. Thousands of acres of fertile land lay fallow for want of water and millions crowded onto the land for want of employment in industries which could grow with the availability of a cheap and abundant electricity supply. Electric power, therefore, was something fundamental to economic growth, yet even in that area it was only where power was needed at *any* cost, namely in the fuel-starved regions of the developing countries, that nuclear power generation could be justified. It was in that respect that the developing countries needed financial and technical assistance, and it was precisely in that respect too that the record of the Agency and the international financial institutions had been most disappointing. Even where the Agency had made pre-investment studies costing more than $1 million, as it had in the case of the Philippines and Pakistan, the relevant projects had stagnated for lack of funds. Despite the provisions of Article XI.B of its Statute, hardly any requests for financial assistance for nuclear projects had been made to, or if made to, granted by, the Agency or any of the competent financing organizations. His delegation was therefore submitting a draft resolution proposing that the Agency study ways and means of securing outside assistance in the form of either grants or low-interest-bearing loans for the creation of a Special Nuclear Fund for the purpose of financing nuclear projects found by the Agency to be technically feasible and economically viable in developing areas of the world. It was significant that the proposal had received enthusiastic support from all the non-nuclear-weapon States at present meeting in Geneva.

80. If the Agency's valuable scientific meetings were to continue to be held mainly in Europe, scientists from distant lands must be helped with their travel and subsistence costs in order that those countries could participate without discrimination. Among the meetings held in 1968 one of the most daring in concept and best attended had been the Seminar on Contemporary Physics held in June at the International Centre for Theoretical Physics at Trieste. The Government of Italy, the Trieste authorities, the Director General and the Director of the Centre all deserved congratulations on the success of the seminar, which he was sure would have early and beneficial effects in various branches of physics.

81. Mr. ORLANDO RODRIGUEZ (Cuba) said that his country's work on the peaceful applications of nuclear energy was still at the initial stage. Cuba had been a Member of the Agency since its foundation in 1957, and had co-operated unreservedly in the Agency's work, especially since 1962, through the Nuclear Energy Working Group organized by the Cuban Academy of Sciences, the National Commission on Radiological Protection and the National Centre for Scientific Research, all of which dealt with the peaceful uses of nuclear energy. During those years, the Agency and its Director General, as well as responsible officials in the several sections and Departments, had given all possible co-operation in connection with Cuba's requests for technical assistance and scientific advice.

82. Now, with the Agency's assistance, and with the help and co-operation of the Soviet Union, Cuba was entering upon a planned programme of activities in nuclear energy. Radioisotopes had already been in use for several years, principally in medicine but also in hydrology and mining.

83. To provide training in those disciplines, a sub-critical uranium/water reactor and a radiochemistry laboratory were being set up — two units which represented the first firm step in the country's development of nuclear energy for peaceful purposes.

84. Cuba's ultimate objective was to use nuclear energy for power production, for desalting sea water, for producing radioisotopes to be used in medicine, agriculture, industry and food preservation, and for all other peaceful applications.

85. With regard to the NPT — which seemed to have become the principal theme of all statements before the Conference — Cuba's position had been made quite clear at the twenty-second session of the General Assembly of the United Nations: the

Cuban Minister of Foreign Affairs had said there that his Government did not share the opinion of those who believed that the NPT was a positive step on the road to general and complete disarmament.

86. The Treaty divided nations into two categories, those that possessed and those that did not possess nuclear weapons, thereby maintaining the distance between powerful nations and small, weak nations, between developed and underdeveloped countries.

87. The Treaty placed the smaller countries that had no nuclear weapons in a position of impotence, and inaugurated a complete control over the peaceful nuclear activities carried on by countries without nuclear weapons, whether they were signatories or not.

88. Cuba would never sign a treaty which conferred upon one country unilateral rights of inspection and control over others, and would accordingly vote against any proposal designed to secure ratification or endorsement of the NPT.

89. His delegation advocated increased technical assistance, principally to the developing countries. Apart from its objection to the NPT, Cuba was resolved to afford the Agency all possible co-operation.

90. Mrs. de CASTILLO LEDON (Mexico) wished to mention the particular importance that the Government of Mexico attached to the Treaty for the Prohibition of Nuclear Weapons in Latin America (Tlatelolco Treaty), and also to the NPT which her country had signed simultaneously in London, Moscow and Washington, the capitals of the Depositary States, on 26 July 1968.

91. Mexico had endeavoured to fulfil its international obligations, and in the case of the first of the above-mentioned treaties, the Government of Mexico had sent the Director General of the Agency a communication on 25 September 1967, informing him that on 20 September it had deposited the instrument of ratification relating to the Tlatelolco Treaty, having waived the requirements listed in Article 28 thereof, and that the Treaty was thenceforth in full effect in Mexico, thus making that country the first signatory State to acquire the status of Party to the Treaty. At the proper time the Mexican Government had expressed its desire to enter into negotiations with the Agency with a view to concluding an agreement that envisaged full application of the Agency's safeguards system to nuclear activities in progress on Mexican territory, in compliance with Article 13 of the Treaty.

92. Negotiations had started immediately, and had resulted in the formulation of a text in May 1968, with which both Contracting Parties had declared themselves in agreement [13]). Referring to that text, which the Board of Governors had approved, the Governor from Mexico had stressed that it constituted a bilateral agreement between his country and the Agency and, as far as Mexico was concerned, was not intended to act in any way as a forerunner to or a basis for any other similar agreement; the Board had endorsed that statement and also stressed its importance.

93. Since the Agreement exempted nuclear materials in the form of ore from the application of the safeguards system, when giving its approval the Board had added a statement that such exemption did not constitute an interpretation of Article XX of the Agency's Statute. The Agreement, the first of its kind to be concluded with the Agency, had been signed on 6 September 1968.

94. The Mexican delegation deemed it fitting to inform the General Conference that instruments of ratification had been received from Brazil, the Dominican Republic, El Salvador, Honduras and Uruguay. The striking fact should also be pointed out that at the request of the Government of Barbados, the Mexican Ministry of Foreign Affairs was making the necessary arrangements for that country to sign the Tlatelolco Treaty.

95. Over the past ten years an area of Mexico covering 53 000 km^2 had been prospected for uranium, and as a result an estimated 3 729 000 tons of uranium ore had been discovered, containing approximately 3000 tons of uranium oxide. Uranium mines were in the initial stages of working in the states of Chihuahua, Sonora and Durango. In addition, an ore-processing plant was under construction at Villa Aldama (Chihuahua), capable of handling 60 tons of ore per day.

96. The Mexican Nuclear Centre, which was equipped with a Triga Mark III reactor that would probably achieve criticality in November 1968, was now nearing completion. A Mössbauer spectrograph had been installed for radiation chemistry studies. A nuclear chemistry group had been formed in association with the reactor, and an appropriate research programme drawn up. A technetium-99 generator had been developed, and tellurium had been separated by solvent extraction and by electrophoresis. The installation, at the Nuclear Centre itself, of a 12-MeV tandem Van de Graaff accelerator and of the hydraulic, electric and high-pressure gas systems had been completed. The central workshops of the Centre had built a nuclear spectrograph of the Mattauch-Elbeck type, as well as a dispersion chamber.

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13) See document INFCIRC/118.

97. A Study Group composed of experts from Mexico, the United States of America and the Agency itself had decided at its last meeting, held recently in New York, that the Northwest Project for the construction of a water-desalination and electricity-generating plant in the extreme north of the Gulf of California was technically feasible. That plant would be of benefit to the states of Lower California and Sonora in Mexico, and to those of California and Arizona in the United States of America. The report compiled by the Study Group would be made available in due course.

98. Mr. OMAR (Kuwait) said that since Kuwait had joined the Agency in 1964 it had taken an increasing interest in its activities.

99. It welcomed the Agency's safeguards programme and considered that it had helped the Eighteen-Nation Committee on Disarmament in Geneva to reach agreement on the NPT, which Kuwait had already signed. The NPT represented a step forward towards total disarmament and he regretted that it had not been signed by all the States in his geographical area, particularly since the development of nuclear weapons in the Middle East would have a very serious effect on the critical situation which obtained there.

100. He sincerely hoped that the NPT would be ratified by all countries as soon as possible. As already reflected in the budget proposed for 1969 and the draft programme for 1969-74, its ratification and the application of safeguards would lead to an increase in the Agency's expenditure. The provision of technical assistance and the dissemination of information were however of great importance to developing countries and he hoped those activities would be expanded to a greater extent than had been proposed. Since however that might be impossible with the funds available, he agreed with those delegates who had proposed that safeguards activities should be financed mainly from funds provided specifically for that purpose rather than from the regular budget.

101. His country was keenly interested in nuclear power and desalination plants, and a preliminary study had been undertaken with the help of the Agency. From 1963 to 1968 the capacity of power plants had increased from 30 MW(e) to 560 MW(e) and the volume of water obtained from desalination plants from 2 million gallons to 23 million gallons per day. A power plant with a capacity of 535 MW(e) was to go into operation in 1970. It was estimated that Kuwait would need to double its power and water supply every three years and, consequently, early consideration would have to be given to the possibility of developing a combined nuclear power and desalting plant. Kuwait was also doing its utmost to increase its underground water resources, which now yielded 22 million gallons per day, of which 18 million gallons consisted of brackish water.

102. A research project had been started in co-operation with the Middle Eastern Regional Radioisotope Centre for the Arab Countries and a preliminary report had been published. Considerable progress had been made in the medical applications of radioisotopes, and in January 1969 a new centre would be completed which would carry out work on radiotherapy, together with research on the use of radioisotopes. The equipment used would be of a highly advanced nature, and not only Kuwait but also the neighbouring countries would benefit from the centre's work. It was also hoped that the centre would provide training in medicine and physics.

103. An extensive radiological protection service had been established in 1967 covering all personnel working with ionizing radiations in medicine and industry. A national radiological protection committee had been set up, and one of its aims was to formulate legislation on radiological protection based on the recommendations of the International Commission for Radiological Protection and the Agency.

104. In conclusion he expressed his delegation's support for the draft resolution on the review of the Agency's Statute which had been co-sponsored by the United Arab Republic [14].

105. Mr. KRASIN (Byelorussian Soviet Socialist Republic) said that the problems of the peaceful use of atomic energy discussed at the present session of the General Conference were every year playing a more important part in the lives of all the peoples in the world.

106. Mankind lived in a world of rapid technical progress, and in the light of that fact the Agency's activities were of particular significance. Many countries were setting striking examples in the rapid mastery of the latest technical achievements. One such country was the Byelorussian Soviet Socialist Republic.

107. In the present year the Byelorussian SSR was celebrating fifty years of independent existence. Over the half-century of the Soviet regime Byelorussia had seen tremendous changes in industry, agriculture, science and culture. In 1967 the volume of industrial production had been 72 times greater than in 1913; the output of industrial products per head of the population had been 57 times greater. At the present time enterprises in the Byelorussian SSR were turning out the same gross output in

14) See document GC(XII)/397.

five days as had taken a whole year before the Revolution. The Byelorussian SSR was now producing every fifth Soviet tractor, every eighth metal-cutting lathe, every fifth motor cycle, and so on.

108. The Byelorussian SSR had become the home of a great chemical industry. Over the last few years two potassium combines, one nitrogen fertilizer plant, one superphosphate plant and a plant producing synthetic fibres and plastics had gone into operation. Construction was at present in progress on another potassium combine, the largest synthetic fibre combine in Europe, and a complex for the production of caprolactam.

109. In 1965 the Republic had begun producing oil. The output in 1967 had been 1 million tons.

110. During the Soviet regime the Republic's agriculture had attained a high degree of productivity and mechanization. In 1967 there were 66 100 tractors, 17 500 combine harvesters and 48 100 motor vehicles in use on the collective and state farms of the Republic.

111. Prior to the Great October Socialist Revolution, Byelorussia had not had a single higher educational establishment or scientific research institute. Fewer than 15% of children between the ages of 8 and 15 had attended school. During the years of Soviet regime in Byelorussia, illiteracy had been stamped out. In the 1967/68 academic year the 28 higher and 126 secondary specialized schools of the Byelorussian SSR had given instruction to some 263 000 students, i.e. one-and-a-half times as many as in the whole of Tsarist Russia in 1914/15. In 1967 the Republic had employed more than 430 000 specialists with secondary and higher education, or more than double the figure for the whole of Tsarist Russia. At the present time the Byelorussian SSR possessed 168 scientific research establishments, with the Byelorussian SSR Academy of Sciences at their head; 21 were entirely concerned with agriculture.

112. In 1967, Byelorussia had generated 10 600 million kWh of electric power. The capacity of the system was 2 246 000 kW, which was 2500 times more than had been the case in pre-revolutionary Byelorussia. Every five years the capacity of Byelorussian power stations was virtually doubled. By 1 January 1968 the power grids of all voltages covered a region of about 145 000 km^2, whereas prior to the October Revolution there had been no transmission lines on Byelorussian territory at all, except in the towns.

113. In the next few years the generation of power in the Byelorussian SSR was scheduled to reach 54 000 million kWh, representing an increase by a factor of almost five. Some of that power would be provided by stations operating on conventional fuel, but as demonstrated by an analysis of fuel transport systems, an increase in the capacity of the country's power stations above 6 million kW could best be attained by resorting solely to nuclear power generation. Thus, in the near future, nuclear power engineering would become in the main branch of the power industry in the Byelorussian SSR.

114. Radioisotopes were being employed in the Republic for a variety of purposes. In particular, they were being used to study ways of determining the fields of moisture in capillaro-porous bodies, to investigate the mechanisms of internal heat and mass exchange, and to study the kinetics of the drying of granulated and pulverulent materials in the fluidized bed.

115. For the inspection of production processes extensive use was being made of radioisotope instruments. Nuclear equipment was being used for research on solid-state physics, medicine, physiology, and many other branches of knowledge.

116. Peaceful atomic energy applications were taking their place in his country among the foremost industrial methods and techniques. The centre of that work was the Byelorussian Academy of Sciences' Institute of Nuclear Power Engineering. During the past year the Institute had obtained a quantity of new data in connection with novel coolants for atomic power stations and with radiation-chemical processes. His delegation wished to draw the attention of the Conference to the fact that the results being obtained in radiation chemistry gave grounds for hoping that they could be widely applied on an industrial scale. At the present time the work on radiation chemistry was being carried out in the Byelorussian SSR using the IRT-2000 reactor and gamma installations. The parameters of various processes were being studied, as also were methods of obtaining useful products by radiation-chemical means.

117. A number of processes had already been studied, and in particular work was going on at the Institute of Nuclear Power Engineering on various emitters, such as nuclear fission fragment emitters and alpha particle emitters (by the (n,α) process), and investigations were being made of processes occurring in mixed reactor radiation. The results of investigations in those fields were now being published in the Physics and Power-Engineering Series of the Transactions of the Byelorussian SSR Academy of Sciences.

118. It had to be taken into account, in discussing the problem under review, that the rapid develop-

ment of nuclear power engineering was leading to the construction of nuclear power stations of enormous overall capacity. Estimates indicated that by the year 2000 the installed capacity of nuclear power stations throughout the world would be about 3000 million kW(e). That number of stations would make it possible to produce, simultaneously with electricity, tens of millions of tons of useful chemical products. That was an undertaking which, of course, deserved serious attention. It could be said that multi-purpose nuclear power stations of that kind foreshadowed the industrial undertakings of the future, and the time had come to lay the scientific and technological bases for complexes of that kind.

119. All those facts and factors bore witness to the rapid technical progress achieved in the Byelorussian SSR during the 50 years of its existence.

120. In the peaceful uses of nuclear energy the Byelorussian SSR was conducting research on a broad front and was engaged in acquiring the most up-to-date experience of applying nuclear energy.

121. In his delegation's opinion the Agency had, through its prolonged and many-sided activities, shown itself capable of solving any international problem associated with the peaceful uses of atomic energy, and it therefore believed that in future also the Agency would successfully fulfil all the assignments which might be entrusted to it in that connection.

122. His delegation noted with satisfaction the profound scientific content of the Agency's programme of work for the coming years. Analyses conducted by the Agency of scientific and technical advances in various branches of the peaceful uses of atomic energy were rendering great assistance to all countries in making use of the latest scientific achievements.

123. The year 1968 had been marked by an outstanding event — the acceptance of the NPT. The Agency was called upon to undertake the highly responsible task of supervising the implementation of the Treaty. The Byelorussian delegation was convinced that the Agency could cope with that task, since it already possessed considerable experience in the matter of safeguards.

124. The Agency's efforts to perfect its safeguards system merited approval. That system was already leading to an expansion of the Agency's activities, and would do so even more in the future. In addition to purely scientific and technical assignments, the Agency would be summoned to carry out duties of great political significance. Thus, the volume and importance of the Agency's prospective work in ensuring effective safeguards and the training of qualified staff were very great. For its part the Byelorussian SSR was fully able and willing to participate in the work in question, and was expressing its desire to do so.

125. His delegation regarded with satisfaction the admission of a number of new Members to the Agency. The universal character of the Agency with regard to the admission of new Members was one of its most important characteristics.

126. In this connection mention should be made of the results achieved by the German Democratic Republic in the peaceful uses of atomic energy. The German Democratic Republic had constructed and, since 1966, was operating its first nuclear power station with a capacity of 70 MW(e). In the near future that country would build a further nuclear power station with an overall capacity of 1 000 MW(e).

127. The German Democratic Republic likewise produced and used a large quantity of radioisotopes, which it also supplied to a number of European countries. It also had a large-scale electronics industry, which was necessary for scientific research in nuclear physics and the utilization of radioisotopes.

128. All that indicated that activities concerned with the peaceful uses of atomic energy were well developed in the German Democratic Republic, and that all the prerequisites for that country's direct participation in the Agency's work as a Member were fulfilled. His delegation was therefore in favour of the admission of the German Democratic Republic to membership of the Agency.

129. His delegation eagerly awaited the final decision of the United Nations regarding the fourth international conference on the peaceful uses of atomic energy, and supported the proposal to hold the Conference in 1970 or 1971. He was convinced that the Conference would have a favourable effect on the use of atomic energy to further the progress of mankind in many directions.

130. In conclusion, he stated that the Byelorussian delegation was grateful to the Agency's Secretariat for arranging the excellent lectures which had been delivered on 26 September by Dr. Sarabhai and Dr. Woolston. His delegation also approved the action taken by the Secretariat in connection with the organization of INIS, and was convinced that INIS would be of great assistance to all States Members of the Agency.

131. He further wished all States Members of the Agency success in the peaceful uses of atomic energy and expressed confidence that, as in the past, the

Agency would continue to carry out its noble task with credit.

132. Mr. BRYNIELSSON (Sweden) said that he did not wish to discuss in detail the Agency's activities during the past year. His delegation had studied the report of the Board of Governors with great interest and merely wished to stress its appreciation of the dedicated efforts which the Director General and his staff had made to carry out the programme within the limitations of available resources.

133. He would also refrain from describing the evolution of Sweden's nuclear energy programme during the past year; in accordance with the Director General's suggestion, a written statement on the subject had already been submitted to the Secretariat[15].

134. His delegation did wish to intervene briefly in the general debate, however, to emphasize the Swedish Government's earnest belief that the Agency should retain the central role which it had played for ten years past in furthering the peaceful applications of nuclear energy. At the Conference of Non-Nuclear-Weapon States in Geneva some delegates had spoken of the possible need for a new international organization to deal with nuclear energy questions. Many others, however, both in Geneva and in Vienna, had expressed complete confidence in the Agency as the body best fitted to cope with the increasingly important tasks which nuclear energy would bring.

135. The Agency had acquired much valuable experience during the first decade of its existence and — as the Director General had said — was already preparing itself to take on the new and larger tasks that lay ahead. To his mind, there were no functions provided for in the NPT which the Agency could not handle as well as any new organization, or better. The establishment of a new organization would unquestionably lead to duplication of work and to extra costs. Though Article III of the NPT contained the provisions most obviously relevant to the Agency's work, Articles IV and V also implied important new obligations.

136. Through its scientific conferences and symposia, and through a sizable publications programme, the Agency had made a valuable contribution to the distribution of technical information. The only limitation on the technical assistance it could provide stemmed from its restricted budget; that being so, he wished to echo the hope, expressed by the Director General, that all Member States would contribute to the best of their ability to the General Fund.

137. The use of nuclear explosions for peaceful purposes also called for a brief comment. He wished to record the strong belief of the Swedish Government that a non-discriminatory formula for prohibiting nuclear explosions was needed, and that the NPT should be followed by a comprehensive test ban treaty which would prohibit, in principle, all nuclear explosions, military and peaceful alike. Such a treaty would obviously have to contain provision for some exemptions so that useful explosions could be carried out when necessary — but under international management and control. That was a view which his Government had expressed and an objective which it would continue to work for in the Eighteen-Nation Committee on Disarmament and in the General Assembly of the United Nations.

138. Experts were generally agreed that the technology of peaceful nuclear explosions was still in the development stage. Accordingly, it seemed unwise to create new machinery for a task, the ultimate requirements of which were as yet unknown. The Swedish Government hoped that the Agency would become the "appropriate international body" mentioned in Article V of the NPT. It had confidence in the Agency's ability to adapt itself to the new requirements, and would therefore gladly support the draft resolution in which it was proposed that the Director General should initiate studies on the procedures which the Agency should employ in discharging such duties[16].

The meeting rose at 6.5 p.m.

15) See document GC(XII)/INF/101/Rev.1.

16) See document GC(XII)/RES/245.