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# GENERAL CONFERENCE

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## TWENTIETH REGULAR SESSION: 21–28 SEPTEMBER 1976

### RECORD OF THE ONE HUNDRED AND EIGHTY-FIFTH PLENARY MEETING

Held at the Conference Centre, Hotel Nacional-Rio, Rio de Janeiro,  
on Wednesday, 22 September 1976, at 10.40 a.m.

President: Mr. de CARVALHO (Brazil)

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\* A provisional version of this document was issued on 14 October 1976.

\*\* GC(XX)/562 and Add. 1.

## THE RECORD

### ELECTION OF OFFICERS AND APPOINTMENT OF THE GENERAL COMMITTEE (continued) [1]

1. The PRESIDENT said he understood there had been further informal consultations during the course of the morning about the composition of the General Committee, but that a solution acceptable to all parties had not yet been achieved. More time would therefore be needed for consultations before the Conference could revert to the question of establishing the General Committee. That being so, he would ask the Conference to proceed, as he had suggested earlier, with the general debate.

### GENERAL DEBATE AND REPORT FOR 1975 (GC(XX)/565)

2. Mr. SEAMANS (United States of America) started by reading out the following message from the President of the United States of America:

(a) "Warmest greetings to all participants in the twentieth regular session of the General Conference of the International Atomic Energy Agency. The United States appreciates the generous efforts of its southern neighbour, Brazil, in hosting this important meeting.

(b) "The Agency has demonstrated repeatedly that nations gain more from co-operation in facing the challenges of nuclear energy than from isolation. Both industrialized and less developed nations have benefited from the many opportunities which the Agency has provided for working together. The United States intends to expand its own participation in Agency activities, which are of importance to all Members.

(c) "The United States continues to look to the Agency for leadership in assuring the world that co-operation in peaceful uses of atomic energy will not contribute to the spread of nuclear explosives capability or to any military purpose of any State. I have requested and the Congress has authorized increased United States contributions in support of Agency safeguards; we urge other nations to make additional support available. The Agency needs the collective support of all its Members, in principle and in practice, in carrying out its safeguards mission, which is of vital importance to the peace of the world.

(d) "The problem of strengthening our joint efforts to abate the spread of nuclear weapons is a continuing one, and I have

appointed a special task force to review United States policies and make appropriate recommendations to me concerning desirable new directions. While the study is still under way, I anticipate that one of the major outcomes of our examination will be an enhanced United States commitment to the Agency and its programmes.

(e) "The people of the United States extend their best wishes for continuing success in all future undertakings of the International Atomic Energy Agency."

3. He went on to express his own thanks to the Government of Brazil for its hospitality.

4. As the Agency neared the end of its second decade of service to the cause of world peace, all Members could take satisfaction in its many notable accomplishments, some of them unique in international affairs. Its Members had achieved a remarkable degree of harmony, which had permitted the Board to act in most cases by consensus. The founders of the Agency had displayed great foresight in providing sufficient autonomy for the Agency to be effective while maintaining its special relationship with the United Nations. The Agency's Statute established a sound balance of interests in the Agency's governing bodies, which had enabled the Agency to operate with remarkable success.

5. By attracting highly qualified personnel and frequently rotating most of its staff, the Agency had facilitated the introduction of fresh ideas and new techniques. It had thus kept abreast of its Members' advances in nuclear science and technology and was well prepared to help all nations share in the benefits of the peaceful atom.

6. The Agency had developed universally recognized regulations for the safe transport of radioactive materials, established the International Nuclear Information System (INIS) to keep the world abreast of advances in nuclear science and technology, developed computer codes and programs which had become powerful tools for assisting Member States in their energy planning, promulgated basic safety standards for radiation protection, recommended codes of practice and safety guides for the use of Member States in their nuclear programmes, provided invaluable technical assistance to developing Member States in such fields as agriculture, medicine and industry, put into operation an internationally accepted nuclear non-proliferation safeguards system and developed guidelines for the physical protection of nuclear materials and facilities.

7. Major tasks still confronted the Agency, which his country was prepared to support vigorously. They included the provision of assistance to Members in taking decisions and drawing up plans in connection with nuclear power, seeking solutions to the problem of radioactive waste disposal, training technicians to operate nuclear power installations, expanding technical assistance in areas in which Member States had shown

[1] GC(XX)/184, paras 1-23.

special interest, encouraging energy conservation, strengthening the international safeguards system in the light of its growing responsibilities and helping Member States to ensure the physical protection of nuclear materials and facilities.

8. With increasing reliance on nuclear energy for electric power, the world had become sufficiently experienced to conclude that nuclear energy for peaceful purposes, particularly for the production of electric power, could help many nations to meet the continuing needs and the rising expectations of their peoples. In that connection, the Agency could play a central role in assisting its Members to reduce their dependence on costly and diminishing conventional energy sources in a balanced and rational manner.

9. Countries making or debating the transition to nuclear power were considering a variety of methods to assure themselves adequate supplies of nuclear fuel in the future. The United States was taking steps to increase its enrichment capability so as to make enriched uranium available to all nations.

10. The recycling of recovered plutonium and uranium could alleviate some of the growing pressure on world-wide uranium resources and enrichment services. However, it had become increasingly apparent that the economic implications were uncertain and, more importantly, that the separation of plutonium could increase the risk of diversion to nuclear weapons programmes and of terrorist activities. That was why his country was so strongly committed to finding safe alternatives to national fuel cycle capabilities.

11. Accordingly, among the questions being examined in the United States was that of how the management of spent reactor fuel might be carried out internationally, so as to minimize the inherent risks and to maximize the potential benefits. It was important that nations which forswore national reprocessing in the interest of non-proliferation be accorded viable alternatives for the disposal of their spent fuel. In studies currently under way in the United States, a range of options was being considered, with a view to achieving two closely related goals: prevention of the destructive uses of nuclear materials and the assurance that the legitimate need of all States for reliable and adequate sources of nuclear fuel would be fully met in the future. His country intended to discuss further, with the Director General and Members of the Agency, the results of those studies and possible joint action to achieve those goals.

12. The Agency was already doing valuable work on the possibilities of international fuel cycle management. In particular, he welcomed the study of plutonium management and the examination of the potential advantages of regional nuclear fuel cycle centres.

13. The Agency could provide important services to Member States by developing site criteria for radioactive waste disposal, and increased Agency

attention to that aspect of waste management was highly desirable.

14. Three decades of experience indicated that radioactive wastes could be handled, transported and disposed of in a safe manner. The Energy Research and Development Administration (ERDA) had issued a report explaining the alternative methods available. Radioactive wastes need not be a burden to anyone: they could be converted to stable, dry solids for indefinite storage in suitable sites underground. However, it was essential that interested nations intensify their efforts to establish sound handling methods. The Agency should play a central role in planning for radioactive waste disposal, including the possible establishment of international storage sites.

15. Until technologies had been developed which could convert essentially inexhaustible energy into useful forms, and until those technologies had spread throughout the world, the United States and other advanced nations had a responsibility to economize with energy through conservation practices and by the development of more efficient energy systems. Top priority had been assigned in the United States to the development of conservation technologies, for both the short and the long term, which would be shared with the rest of the world as they became available. The Agency should incorporate energy conservation information in its planning and its assistance to Member States.

16. The Agency had every reason to be proud of the widespread acceptance of its increasingly comprehensive system of international safeguards, which were now being applied in more than 60 countries. It was important to continue striving for their universal acceptance.

17. As indicated in President Ford's message, the United States would be making increased contributions to the Agency's safeguards programme in support of activities in such areas as training, the improvement of information systems, the development of new techniques and instrumentation, and the refinement of safeguards concepts and criteria.

18. All could benefit from expanding trade in power reactors and reactor fuel if there continued to be an assurance that materials and technology would not be diverted for nuclear explosive devices; indeed, such an assurance was of fundamental importance in enabling the nations of the world to derive full benefit from nuclear energy. A key element in that assurance would be the effectiveness of the safeguards administered by the Agency.

19. The Agency's authority to conduct safeguards inspections in Member States was unprecedented in the history of international relations and held great promise for the future peace of mankind. He therefore urged that Member States support moves to strengthen it.

20. The United States also sought the cooperation of all countries in achieving increased

physical security of nuclear materials and facilities world-wide on a bilateral basis and with Agency assistance. There was an international obligation to achieve increased physical security since the theft of nuclear materials or the sabotage of a nuclear facility in one country could have serious implications for others.

21. He renewed his country's offer - made at the eighteenth regular session of the General Conference - to share its research and development information on physical security [2] and expanded the offer to include collaboration in projects.

22. His country also wished to discuss, bilaterally and multilaterally, measures for strengthening both contingency planning for nuclear emergencies and the capability to deal with them. Countries facing emergencies needed to be able to share information, evaluate threats and co-ordinate action; swift and sure communications between national nuclear authorities were essential to such co-operation.

23. The Agency had a key role to play in helping its Members to increase the world's total energy supply. In that context it would have to remain alert to non-nuclear research and development programmes and energy alternatives, avoiding the promotion of nuclear energy alone in situations where other options might also merit serious consideration. It should be in a position to assist its Members - whose needs would vary - in balanced planning.

24. His Government, which had assigned high priority to inaugurating a new era of abundant energy in the United States, recognized that increasing international competition for decreasing supplies of energy could take the world down a dangerous path. It therefore remained dedicated to helping other nations to establish and increase their own energy supplies.

25. Certain actions by the United States deserved, in his opinion, to be highlighted:

The United States had increased its cash and in-kind contributions for the 1976 technical assistance programme by \$1 million, to a total of \$3.5 million;

The United States would contribute an additional \$1 million annually, commencing in the current year, for such Agency safeguards activities as training, the improvement of information processing, and the development of new techniques and instrumentation;

His Government would continue to make available to the Agency and to Member States specialized technical information and the services of experts in the field of safeguards application;

His Government would make available its technology for and expertise in the physical protection of nuclear materials;

His Government offered continuing strong support for Agency training and advisory activities related to the safety and reliability of nuclear power plants; and

The United States would in 1977 again donate special nuclear materials worth up to \$50 000, preference being given to States which were party to the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) [3].

26. He had noted with pleasure the past contributions of other Member States to the Agency and urged those countries not only to continue their support but to make additional contributions as the scope and importance of the Agency's activities increased.

27. The Agency could be proud of its role in bringing the benefits of the atom to many millions of people, but further progress depended very much on the continued willingness of Member States to work together within the Agency. The remarkable harmony among Member States in the past demonstrated that the best results were achieved when political issues were left to the international bodies designed to handle them. The continued effectiveness of the Agency and the support and confidence of its Members might well depend on its determination to prevent the intrusion of extraneous political issues.

28. Mr. BEESLEY (Canada) thanked the Brazilian authorities for their hospitality in hosting the Agency's twentieth General Conference.

29. He welcomed the application for membership of the Agency by Nicaragua, whose admission would further the principle of universality of membership in the Agency.

30. He paid tribute to the work of the Director General who had displayed vigour, ability and good judgement in meeting the challenges of his office in the last twelve months. He pledged Canada's full support to him as he led the Agency in its complex and often difficult duties.

31. As in previous years, he wished to take the opportunity to touch on some of the key issues raised by the Director General in his statement. First, some general observations. The more than fourfold increase in the price of fossil fuels in the last few years and the increasing urgency of finding alternatives continued to provide great impetus to the nuclear power generation programmes in both the industrialized and the developing nations of the world.

32. Canada's own commitment to the peaceful uses of nuclear energy, where it was the most

[2] GC(XVIII)/OR.169, para. 25.

[3] Reproduced in document INFCIRC/140.

appropriate alternative, remained undiminished. It was tempered of course by the recognition of the special concerns inherent in nuclear technology, in particular the overriding need to ensure, firstly, that nuclear power was safe for the human environment and, secondly, that it contributed to stability in world affairs and not the reverse due to diversion of material for the production of nuclear weapons.

33. Some of the factors which had to be considered in choosing the nuclear energy option, such as the need for economies of scale, applied to any energy decision involving massive capital outlays. The decision to adopt or expand the nuclear power alternative, however, involved additional consequences which required thorough analysis and planning. It was essential that decisions to embark upon or expand nuclear power programmes also took into account those additional issues. Nuclear programmes required secure sources of fuel, and more uranium - now in short supply - would be necessary to satisfy increased demand. Skilled specialist technical personnel had to be trained to operate the plants, regulatory mechanisms had to be established to ensure their safety, and long-term waste management systems had to be devised to receive their by-products.

34. In the analysis and the solution of those problems, Canada looked to the Agency for leadership. In his discussion of the Agency's future directions, the Director General had made special reference to the need for the Agency to take an active role in evaluating all energy alternatives. Canada fully supported the Director General's view that the Agency should have access to all available knowledge on non-nuclear conventional and emerging alternative energy sources in its efforts to advise States in their decision-making process [4]. His thoughts on additional competence for the Agency in those fields merited further detailed study.

35. Canada had been gratified by the number and scope of the Agency's technical programmes dealing with power project planning which were of obvious benefit to those countries currently developing nuclear power programmes.

36. He welcomed the attention given by the Agency in the past year to the areas of training of personnel and the provision of economic and advisory services to Member States, particularly developing countries. Total resources available for technical assistance continued to be considerably expanded and, as the annual report showed, there was a corresponding increase in large-scale United Nations Development Programme (UNDP) projects undertaken by the Agency. It had become apparent that, as more nations made long-term commitments to nuclear power, the Agency would be called upon to provide the resources and training programmes needed to

ensure adequate and efficient management of their nuclear programmes. Canada fully supported the Agency's efforts in that direction and would continue to do so. He was pleased to be able to pledge that the Canadian Government would contribute to the General Fund at its assessed level again that year.

37. Canada also welcomed the interest being shown by the Agency in the exploration, mining and development of uranium resources. Canada's expertise in uranium production could be of benefit to the Agency's programmes in that field. He hoped that the Agency would continue to work in close co-operation with other international agencies active in that field in order to maximize the effectiveness of its efforts. Canada had always sought to co-operate actively with the Agency in such programmes and would continue to do so.

38. Canada was again pleased to note the Agency's intensified activity in the area of nuclear safety. The Agency would be required to send an increasing number of missions to Member States to advise on nuclear law, licensing, siting and other regulatory functions in the safety and environmental protection fields. It was happy to see that the draft codes and guides on reactor safety were progressing satisfactorily and hoped that in due course a comprehensive set of codes and guides with sufficient flexibility to be applied to all reactor systems would become available. It believed that internationally acceptable safety standards were imperative if national nuclear programmes were to be consistent with the developmental needs of a nation and grow within safe parameters.

39. Canada was actively facing the problem of waste management. He wished to draw attention to Canada's continuing active participation in the meetings being held under the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (the London Convention) [5], one of which was taking place that month. Canadian experts were also continuing to participate in the work of the Agency in that field. He stressed that Canada continued to believe in the long-term management of significant waste material rather than its disposal in the oceans.

40. Canada actively supported the continuing Agency study of regional fuel cycle centres to which the Director General had made reference [6]. It was also most interested in the Director General's comments concerning the Agency's role as set out in Article XII, A. 5 of the Statute, relating to the management of excess plutonium stocks [7]. The dangers inherent in the

[4] GC(XX)/OR.184, para. 32.

[5] The text of the Convention is reproduced in document INFCIRC/205.

[6] GC(XX)/OR.184, para. 36.

[7] Ibid., para. 37.

unrestricted and uncontrolled availability of such stocks were obvious; equally obvious on the other hand were the benefits to world energy supply and international security of well-managed and internationally controlled stocks available as needed by the world community. Clearly many questions remained to be resolved, but it was Canada's belief that work in that area should continue at full speed. Canada was impressed with the thoroughness of the experts' work under Agency auspices on the question of regional centres, would examine their report with great care and would wish to explore fully any future analysis of international plutonium management.

41. His delegation agreed with the Director General's view that one of the challenges facing the Agency was the current debate in some countries, including Canada, on the environmental implications of nuclear power. Last year he had called for continued Agency participation in the examination of the comprehensive environmental impact not only of nuclear power but also of alternative energy sources [8] and he was happy to note that the Agency had been very active in that field. The study being performed in conjunction with the International Institute for Applied Systems Analysis (IIASA) would be extremely useful in that connection. Canada continued to favour open discussions of that vital element in public acceptance of nuclear power and fully supported the Director General's efforts in that direction.

42. Another, perhaps even more profound problem was posed by the potential of nuclear power programmes to produce the materials for nuclear explosives. The fear that diversion of nuclear materials would contribute to international confrontations had been a critical element of the "nuclear debate" in many countries and, in some instances, was threatening the public acceptability of nuclear power programmes and international co-operation. A basic requirement, as the Director General had noted, was that the Agency's safeguards mandate and its resources should always be adequate to the task. Expansion of the safeguards inspectorate was therefore essential and Canada welcomed the forthcoming establishment of a second Division of Safeguards Operations. The concept of regional field offices was a good one and would contribute markedly to the efficiency of safeguards administration. His delegation agreed with the Director General that the work of the Standing Advisory Group on Safeguards Implementation (SAGSI) was vital [9] and Canada was looking to that group to play an important role in advising the Director General on a wide range of issues. Canada was actively participating with the Agency in the further development of safeguards techniques and would continue to do so. It wished to congratulate the Director General for drawing attention to a shortcoming in the present international safe-

guards system whereby the scope of application of safeguards was limited in certain countries. It believed that the international community should review means open for Members of the Agency working together to move towards a comprehensive, universal and effective international safeguards structure.

43. The Director General had made reference to the universality of NPT and the urgent need for those countries which had not done so, to reconsider their decision not to adhere to that Treaty [10]. Canada wished to congratulate Japan on its crucial decision earlier that year to ratify NPT. The decision of the United Kingdom and the United States to implement their voluntary offer to accept Agency safeguards on their civil nuclear programme was an important step and Canada hoped that similar offers would be made by other nuclear-weapon States.

44. He also wished to echo the Director General's call to nuclear-weapon States to cease nuclear-weapon tests [11]. The Treaty between the United States of America and the Soviet Union on Underground Explosions for Peaceful Purposes (the PNE Treaty), recently concluded, was a modest but encouraging step in that direction. Canada had long called for an end to all nuclear-weapons testing. Much more determined efforts should be made by the nuclear-weapon States to overcome the obstacles to a comprehensive test ban. Canada continued to hope that achievement of such a treaty would not have to await the participation of all nuclear-weapon States. It hoped that the two super-Powers and as many other nuclear-weapon States as possible could enter into a formal interim agreement, open to all States and adequately verifiable, to halt their testing for a specific period. At the end of that period, the interim agreement could be reviewed to determine whether it could be continued or be replaced by an agreement to which all nuclear-weapon States would adhere.

45. Canada was participating fully in the Agency's intensified study of the technical, legal, safety and environmental aspects of the application of nuclear explosions for peaceful purposes and of the possibilities of devising international arrangements for regulating such explosions in conformity with NPT and hoped that that work would bear fruit in the not too distant future.

46. The task of promoting international collaboration between so many nations in such a complex field as nuclear energy was indeed a difficult one and of course political issues were bound to crop up. None the less, while one should not shrink away from those problems, one should not allow the good work of the past to be undone by becoming embroiled in non-nuclear issues that were divisive in nature and counter-productive in effect. International co-operation was indis-

[8] GC(XIX)/OR.180, para. 78.

[9] GC(XX)/OR.184, para. 41.

[10] Ibid., para. 44.

[11] Ibid., para. 45.

pensable in solving the problems associated with the application of the atom. In that regard, the Agency had been a most effective international mechanism; yet to remain effective, it had to have the same co-operation from its Member States that it had had since its inception. Anything less than total co-operation would jeopardize the Agency's role as an instrument of the international community. Member States should not lose sight of the purpose for which they had come together. Finally, he pledged once again Canada's full support for the Agency's activities and its programme in the future.

47. Mr. ALLEN (United Kingdom) observed that 1976 in some respects represented a coming of age for the peaceful uses of nuclear energy. It was just 21 years since the first Geneva International Conference on the Peaceful Uses of Atomic Energy had led to a freer exchange of information and the start of international co-operation and it was 20 years since the first civil nuclear power station had been commissioned at Calder Hall in the United Kingdom.

48. It was most appropriate that the twentieth regular session of the General Conference was being held in Brazil, at a time when that country was embarking on an ambitious nuclear power programme. None would dispute the great benefit that had been gained from nuclear power. But equally, none would dispute that it had carried with it, from the outset, two major problems - the danger of proliferation of nuclear explosive devices, and potential dangers to health and the environment.

49. The more important problem was that of proliferation. The United Kingdom Government continued to attach the greatest possible importance to NPT, regarding it as the best available means for preventing the spread of nuclear explosive devices. His Government warmly welcomed the recent ratification by Japan, and hoped that that example would soon be followed by those few Members of the Agency which had not yet acceded to the Treaty.

50. While not sharing them, the United Kingdom respected the political objections of certain States to acceding to the Treaty. At the February 1976 series of meetings of the Board of Governors, the United Kingdom had co-sponsored a resolution requesting the Secretariat to study the form of an agreement whereby States not party to NPT might put all their nuclear facilities under Agency safeguards. By accepting Agency safeguards on their full fuel cycle such countries could show their commitment to non-proliferation and to the international safeguards system without in any way prejudicing their views on the Treaty. His Government, therefore, jointed the Director General in urging States which did not wish to adhere to the Treaty to accept those full fuel-cycle safeguards.

51. To demonstrate its own steadfast commitment to NPT, the United Kingdom had, in 1967, made a voluntary offer to accept safeguards on

its own civil nuclear programme. In June of the present year the Board of Governors had approved the trilateral UK/Agency/EURATOM agreement and it had been signed in Vienna on 6 September. On 17 September the Board had considered and approved the voluntary offer made by the United States. He hoped that both those initiatives would encourage other nuclear-weapon States to follow suit.

52. The United Kingdom had offered full co-operation with the Agency's study on the concept of multinational fuel cycle centres, and the study would be extremely valuable as a guide to how the numerous practical problems involved might be tackled. It had also learnt with interest of the Secretariat's study of the possibility of establishing plutonium storage centres under Agency control; such centres could well remove some of the more important of the fears currently expressed about the dangers of plutonium, but, as with multinational fuel centres, there were bound to be practical difficulties. Another study in which the United Kingdom had taken a full part was that carried out by the Ad Hoc Advisory Group on Nuclear Explosions for Peaceful Purposes.

53. A further major Agency responsibility in the area of non-proliferation continued to rest with the Secretariat's Department of Safeguards and Inspection. He welcomed the efforts being made to strengthen its resources, and his Government would continue to offer all possible support to the safeguards activities which had been entrusted to the Agency.

54. As regards the suggested separation of the Agency's regulatory functions from its promotional activities, his Government shared the view expressed by the Director General that at international level it was both desirable and more efficient to continue to combine both functions within the Agency [12].

55. Apart from the Agency's activities in the field of non-proliferation, the obligation to search for a solution to the problems of non-proliferation also rested on national shoulders, including those of the United Kingdom as a supplier of and customer for nuclear material, equipment and technology. The framework of his Government's policy on nuclear exports was based upon the realization that those who could supply nuclear materials, equipment and technology had a duty to act responsibly and with caution. For that reason the United Kingdom would ensure that its nuclear exports (and items derived therefrom) were covered by Agency safeguards. It would also require assurances that anything exported would not be used to manufacture any nuclear explosive device, would be properly protected within the recipient country, and would not be transferred to a third country without the application of equally strict provisions.

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[12] *Ibid.*, para. 55.

56. The other main problem that the world community faced was the environmental safety aspect of the growth of nuclear power. The problems of reprocessing and radioactive waste management were already the subject of important studies by the Agency and other organizations including the Nuclear Energy Agency of the Organisation for Economic Co-operation and Development (NEA) and EURATOM. The amount of high activity waste arising from even a large nuclear programme would fortunately be relatively small. It would be possible to store it and from a safety and environmental standpoint there was good time - provided the necessary effort was made - to reach decisions on a sound and acceptable regime for long-term treatment.

57. The United Kingdom envisaged that, in the new reprocessing plant being planned, combustible low-level solid waste would be incinerated, and plutonium, where present, would be recovered from the ash. Highly active wastes in the United Kingdom were at present stored in liquid form, and it would much improve the conditions of their containment and transport if they were converted into a solid and unleachable form. Development was therefore proceeding on a vitrification process on which work had been in progress for some time, and it was hoped to have an industrial-scale demonstration plant in operation by the mid-1980s. The perfecting of that process was important in the context of the recent Government approval given for British Nuclear Fuels Limited to accept further reprocessing business from overseas.

58. In the United Kingdom, the past year had been a period of progress in implementation of the country's nuclear programme. In February 1976 the first reactors of the Advanced Gas-cooled Reactor power stations at Hinkley Point and Hunterston had been synchronized with the national grid. Both reactors had since been brought up to the maximum output level planned for the first period of operation. They were now operating satisfactorily at 500 MW(e), and the commissioning of the second reactor at each station was proceeding.

59. The prototype Fast Reactor at Dounreay in Scotland had been generating 150 MW(e) for some time past and would soon be stepped up to its designed power output of 250 MW(e). Good progress had been made on the reconstruction of the fast reactor fuel reprocessing plant, originally built to reprocess the enriched uranium fuel from the experimental fast reactor that had been operating at Dounreay since 1959. The reconstructed plant would handle the plutonium fuel from the new reactor. When the rebuilding had been completed the United Kingdom would not only have in full operation an industrial-sized fast reactor burning plutonium fuel, but would also be operating the whole fast reactor fuel cycle from manufacture, through reprocessing, to fabrication.

60. The reference design for the Steam Generating Heavy Water Reactor had been completed during the summer of 1976 and the United

Kingdom Government, on the advice of the Atomic Energy Authority, was treating that as a suitable point for taking stock of the situation in the light of current, and much lower, forecasts of electricity demand.

61. Government approval had been given for a very substantial programme of development of the reprocessing facilities of British Nuclear Fuels Limited, involving the extension, refurbishing or replacement of the existing Magnox reprocessing plant complex, the construction of a new oxide reprocessing complex, and the construction of additional research and development facilities. Also, British Nuclear Fuels Limited were now building a gas centrifuge uranium enrichment plant on a commercial scale and, in order to meet existing contractual commitments, joint British, Netherlands and Federal German capacity would be expanded gradually to 2000 tonnes of separative work by 1982. Further substantial expansion was envisaged thereafter. Work had also started on a new major site at Cardiff in South Wales for the Radiochemical Centre Ltd. The new facilities would provide for a growth in sales volume which, on present expectations, should double in the following five years.

62. His Government considered that the Director General was to be congratulated on the improved layout for the Agency's programme for 1977-82, believing that it struck broadly the right balance. It also strongly supported the Agency's technical assistance programme and pledged its full contribution for the coming year. An additional sum to be used by the Agency to provide fellowships for scientists from Member States party to NPT would continue to be provided.

63. In conclusion, he wished to pay tribute to Dr. Eklund and the Secretariat on the way they had built up the Agency into an efficient international scientific and technical organization whose reputation stood unrivalled. The United Kingdom was confident that in the coming decades the international community could continue to rely on the Agency to provide an excellent service, and to maintain its responsibility for identifying salient problems and furnishing guidance towards finding the correct solutions.

64. Mr. HAUNSCHILD (Federal Republic of Germany) said that the decision to hold the twentieth regular session of the General Conference in Rio de Janeiro was particularly fortunate, for in Brazil one could see how a country of the Third World, based on an old civilization and traditions, was making dynamic use of modern technologies, including nuclear energy.

65. The year past had seen further progress in the peaceful uses of nuclear energy. Those countries already engaged in the field had developed their capacities, even though interested in other new sources of energy too, and several countries had for the first time decided to introduce nuclear energy. An opportunity to take stock



of the situation throughout the world would be given by the International Conference on Nuclear Power and Its Fuel Cycle to be held in Salzburg in May 1977 (the Salzburg Conference).

66. In the Federal Republic of Germany, nuclear research and development, which had begun over 20 years previously, was yielding practical results of increasing scope and importance. In 1976, the installed nuclear capacity would amount to more than 6000 MW(e), thus accounting for 12 to 15% of the country's power supply. Even if the growth rate of aggregate power producing capacity proved to be somewhat lower than originally planned, it was nevertheless expected that by the middle of the 1980s about 40% of electricity production would be of nuclear origin.

67. The closing of the nuclear fuel cycle was taking on special importance in view of the increasing number of nuclear power stations. The supply of natural uranium was being secured through the joint efforts of industry and government, in particular by international co-operation in the prospecting and development of new deposits. The need for enrichment capacity was covered up to 1985, largely, and to an increasing extent, by facilities using the centrifuge technique developed jointly with the Netherlands and the United Kingdom.

68. Detailed plans for an integrated nuclear fuel cycle centre had been drawn up. All the steps required after the unloading of fuel elements from the reactor, viz. reprocessing, waste treatment and storage, retrieval of re-usable fuels and their refabrication into fuel elements, would be carried out at a single site. Reprocessing was a task for industry, but responsibility for the final disposal of waste had been entrusted by Parliament to the Federal Government. At present a suitable site was being sought for the facility, which was to be built on top of a geological salt formation.

69. The intensified use of nuclear energy in Germany could rely on a reactor technology which, in respect of both economics and safety, was highly developed. That was evident from several recent orders for the building of nuclear power stations in foreign countries. Work was continuing on the development of new reactor systems, with substantial support from public funds. During the past year the ties of collaboration between the Federal Republic of Germany and other countries had been considerably strengthened. In the field of fast breeder reactors close partnership had already existed for many years with Belgium, Luxembourg and the Netherlands; now comprehensive co-operation, involving industry, had also been agreed upon with France. With ERDA in the United States there likewise existed an agreement to intensify the exchange of information on breeder development. Similar agreements with those two partners concerning high-temperature reactors had either been signed or were in preparation. His country was deliberately seeking such arrangements with other countries in order to

lessen the risk involved in such major technological developments, to reduce Government expenditure, and to accelerate the introduction of the new technologies.

70. Work on nuclear ship propulsion was continuing. The N. S. Otto Hahn, the sole nuclear merchant vessel at present in operation, had cruised 460 000 miles over a period of more than eight years and had called at 29 ports. The ship was docked in Rio de Janeiro and could be visited by the delegates to the General Conference.

71. The plans for a nuclear fuel cycle centre, as well as the construction of nuclear power stations, had given rise to heated public discussion in the Federal Republic. His Government had agreed to answer publicly the sometimes very critical questions from the population because it considered the demand for an airing of the benefits and hazards of the new energy source to be legitimate. Accordingly, a large variety of detailed information on the subject of nuclear energy had been provided. A readily understandable pocket-book had been distributed in 250 000 copies, informatory meetings attended by many thousands of people had been held, and comprehensive scientific and technical documentation on all issues related to nuclear energy had been compiled. It appeared now that the first phase of the dialogue had in fact contributed to a more objective approach, and it also seemed that nuclear energy had far more supporters than opponents. In Parliament, all political parties were in favour of nuclear energy.

72. The increased utilization of nuclear energy in many countries had of late led to an intensification of the international debate on the need to prevent the misuse of nuclear energy. Numerous problems of implementing and supplementing NPT were being discussed with great urgency, not only by Governments but also by the public. Indeed, one could well regard that complex of problems as one of the most important political topics, since peace and the lives of many people were at stake. Therefore, the Government of the Federal Republic of Germany was pursuing an active non-proliferation policy, prompted on the one hand by its desire to contribute to the safeguarding of peace, and on the other hand by its special responsibility as a supplier of nuclear technology.

73. NPT constituted the most important tool of any non-proliferation policy, and his Government noted with satisfaction that the parties to the Treaty now numbered one hundred. For the Federal Republic of Germany it would be a welcome development if those still standing aside acceded to the Treaty, the more so as most of them already supported the principle of non-proliferation. The nuclear-weapon States bore, in his Government's view, a particular responsibility for the future of non-proliferation policy. The commitments resulting from NPT were often criticized for a lack of balance, but that could be mitigated if all nuclear-weapon States were to

follow the example of the United Kingdom and the United States and submit their non-military nuclear energy activities to IAEA safeguards. The inherent inequality between nuclear-weapon States and non-nuclear-weapon States would in that way be largely eliminated from the technical and industrial sectors. The Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons (NPT Review Conference)[13] had rightly demanded that common requirements be established for the export of nuclear material and equipment in order to avoid a distortion of competition on political grounds. His Government had adopted appropriate regulations which it applied in the interests of an effective non-proliferation policy.

74. In February 1976, the Agency's Board of Governors had approved the trilateral safeguards agreement between Brazil, the Federal Republic of Germany and the Agency. The agreement laid down strict mutual obligations with regard to the exclusively peaceful uses of the nuclear material supplied and manufactured, of equipment and, in addition, of technological information. Every nuclear facility and all equipment of essentially the same kind developed or operated within a period of twenty years was likewise subject to safeguards. By that rule, as well as by provisions on the physical protection of nuclear material and on re-exportation procedures, gaps in the non-proliferation system were closed.

75. His country's experience indicated that there were two topics which deserved special attention. One was the physical protection of nuclear material and nuclear facilities, in particular against diversion and sabotage, a matter which could not be handled by each individual State on its own. Some international instrument embracing as many countries as possible seemed to be indispensable. The legal form to be chosen for that purpose - a formal international convention or a more flexible procedure - was a question that would have to be examined more thoroughly. The recommendations elaborated by the Agency in 1975 might serve as a good basis. He accordingly suggested that the Agency should soon take the initiative for further discussions on that subject.

76. Probably of even greater importance was a solution to the problem of reprocessing irradiated fuels. On grounds of economy and safety it would not be possible to store the material leaving a reactor in huge amounts, and for an unlimited period, in the receiving country. Transport of the irradiated material back to the country of origin would not provide a generally practicable solution either because of the additional risk entailed in transport - not to mention the unacceptable distortions of competitive position that might create for the supplying countries owing to their different geographical situations. Studies were under way

to ascertain how reprocessing facilities could be set up most effectively and economically in the proximity of nuclear power stations - at regional level or with an even wider participation, including the suppliers - and what rules should govern the storage and use of the plutonium produced, but they were still at an early stage. They should, however, be pursued as vigorously as possible.

77. In the opinion of the Government of the Federal Republic the treatment of those problems would be one of the most important of the Agency's future tasks. If the Agency did not succeed in dissipating doubts as to the efficacy of the safeguards already entrusted to it, and if the Agency were not capable of taking the lead in the elaboration of additional and supplementary concepts, then the universality and homogeneity of the safeguards system might be in danger, and a reversion to bilateralism might be the consequence. Discussing the vital questions within the Agency would also offer the decisive advantage that all Member States could participate in elaborating solutions. His Government believed firmly that solutions could be found only within the framework of a comprehensive policy which gave equal attention to the principle of non-proliferation and to the necessity of allowing the peaceful uses of nuclear energy to develop unhampered in all countries. It wished to promote co-operation on the basis of mutual trust between all interested parties, a type of co-operation which would have to put both supplier and recipient countries on an equal footing.

78. The fact that there was too little time in the general debate to discuss other topics in detail did not mean that the Federal Republic was less interested in them. In the Committee of the Whole his delegation would present its comments on the draft programme and budget. However, he would emphasize that the Federal Republic of Germany welcomed the Agency's efforts to promote the utilization of nuclear energy in the developing countries. The Federal Republic would be increasing its contribution to the General Fund for 1977 to US \$440 000 and, in addition, would make available voluntary contributions worth more than \$1 million for joint programmes as well as for experts, fellowships, scientific conferences and training courses.

79. In that way, the Federal Republic would, among other things, be expressing its confidence in the work of the Agency and in the able management of Dr. Eklund, the Director General. It would continue to work for the success of the Agency.

80. Mr. CLEMENTEL (Italy) said that the present regular session of the General Conference was a milestone in the life of the international community marking, as it did, the twentieth anniversary of the Agency's activities. The accomplishments of the last twenty years clearly demonstrated the great need for international collaboration in tackling the difficulties with which

[13] Held at Geneva in May 1975.

modern society was confronted, and the role of the Agency had been a decisive factor, not only in developing the peaceful uses of nuclear energy, but also in the strengthening of international collaboration.

81. The fact that atomic energy was now recognized everywhere as an indispensable element in man's development was due in great part to the competence with which the Agency's work had been performed.

82. It was true, of course, that the development of nuclear energy created some delicate problems, owing to the constant diffusion of potentially dangerous materials, but over the past years the Agency had proved its ability to overcome those difficulties and he felt certain that the unjustifiable fears which might interfere with the further development of nuclear technology could be allayed. In that connection he wanted to repeat that his country was ready to co-operate in controlling and preventing any kind of proliferation and also in promoting the general policy of détente. In such a context his Government was hoping to see further reinforcement of NPT through new accessions.

83. Referring to the Agency's activities, he said his country was in favour of:

(a) Continuous improvement of the safeguards system, which should be of interest not only to countries party to NPT but also, and in particular, to non-parties;

(b) Intensification of the activities of the Ad Hoc Advisory Group on Nuclear Explosions for Peaceful Purposes;

(c) Maximum promotion of the exchange of nuclear materials, equipment and technology for peaceful uses in the framework of Article IV of NPT, as called for by the Italian delegation to the NPT Review Conference;

(d) Strengthening of international co-operation for the improvement of physical protection measures based on common guidelines but capable of adaptation to meet the specific objectives of each country and taking into account the need to prevent commercial discrimination.

84. In regard to the more technical and scientific aspects of the Agency's activities, he wanted to express his Government's satisfaction with the accomplishments of previous years and with the programme for 1977-1982. It was, however, concerned with the increasing financial burdens and considered that every effort should be made to keep expenditure within reasonable limits without detracting from efficiency.

85. Current activities deserving particular mention were those whose purpose was to assist Member States contemplating nuclear national programmes, by financing special projects, or

by advising on the construction and operation of nuclear plants, or by facilitating the application of nuclear techniques.

86. In regard to the Agency's future programme he wanted to pledge his Government's full support, especially for activities related to the management of radioactive waste, the evaluation of uranium resources, advanced reactor technology, and agricultural and medical research. Studies foreseen in physics were also viewed with favour by the Italian groups concerned. Activities in the latter two fields would be conducted mainly at the International Centre for Theoretical Physics at Trieste and his country would try to ensure the best possible conditions for the Centre's operation.

87. In the field of safeguards his Government was somewhat bewildered by the excessive dividing of competences and the creation of new units. It also considered that more attention should be paid to the study of techniques and equipment for facilitating the task of nuclear plant utilities. A safeguards system that was too burdensome could, in the long run, restrain developments in the production of electricity. He believed, also, that greater authority should be entrusted to SAGSI, which had the best knowledge of the problems involved.

88. Italy wanted to collaborate fully with the Agency and would host a number of meetings during the coming years; in addition, as in the past, the Italian Nuclear Energy Commission (CNEN) would supply all possible assistance required and would place at the Agency's disposal 25 fellowships for students from developing countries. By an agreement concluded last year with the Trieste Centre, the National Nuclear Physics Institute offered to scientists having completed courses at the Centre the possibility of further training in its own laboratories.

89. Of the nuclear activities carried out in Italy during the year elapsed, particular mention should be made of the first steps taken towards the implementation of the Italian Energy Plan. Approved in December 1975 by the Inter-ministerial Committee on Economic Planning (CIPE), the Energy Plan indicated that nuclear energy offered a concrete possibility for gradually replacing imported oil in the production of electric power. The use of nuclear energy would give greater flexibility in the energy system and improve the balance of payments.

90. In implementing the Energy Plan, the Ministry for Trade and Industry had instructed the National Electricity Board (ENEL) to initiate the preparatory work for the construction of eight new nuclear power stations, each of which would employ PWR and BWR 1000-MW(e) reactor units. Those installations would supplement the four nuclear plants ordered in 1974, and the Caorso plant - a BWR reactor of 850 MW(e) nearing completion.

91. An ad hoc law, adopted in August 1975, laid down procedures for the siting of nuclear power plants; each Italian Region (Territorial Administration) proposed two areas for each nuclear plant, assisted technically by CNEN, the control body. ENEL studied the potential sites within those areas, and the definitive site was then chosen by the Region on the basis of the ENEL studies and CNEN advice. The control body also had the task of preparing a national map of potential sites in collaboration with the Regions and the National Electricity Board.

92. Eight additional nuclear plants would probably be ordered by 1977, giving a total installed capacity of over 21 000 MW(e) in 1985, by which time nuclear power could constitute 40% of the total production, a figure which would very likely reach 60-70% in 1990. The Italian Energy Plan also provided for a number of other initiatives, some of which were related to the fuel cycle and to the CNEN programmes. In regard to the fuel cycle, the constitution of the following joint companies was foreseen:

- ENI-ENEL, responsible for the supply of natural uranium;
- ENI-ENEL-CNEN, responsible for all other phases of the fuel cycle, in particular for reprocessing activities and the supply of fuel elements for reloading;
- ENI-CNEN, responsible for work related to research and development for uranium enrichment, design and fabrication of fuel elements and reprocessing of irradiated fuel.

93. Finally, the Energy Plan had stressed that the CNEN programmes should follow the lines of activity already laid down in the 1974-78 Five-Year Plan. During 1976 CNEN had established links in the field of proven reactors with industrial operators and with ENEL. Other important activities were the development of the ESSOR reactor and the elaboration of a pluriannual experimental programme in connection with core and fuel safety.

94. A contract for the construction of a 40-MW(e) prototype heavy-water reactor had been given by CNEN and ENEL to the NIRA industrial group and according to the latest estimates the reactor should be ready for operation by 1981.

95. All activities in the field of fast reactors were performed within the framework of an agreement between CNEN and the French Commissariat à l'énergie atomique in two directions: construction of the PEC experimental reactor and work on the development of fast reactors.

96. The planning of the PEC reactor had recently been thoroughly surveyed by the NIRA group, which had been entrusted with the construction of the plant, and it appeared that the reactor should become critical during the second

half of 1979. Joint French-Italian experimental activities aimed at the development of fuels for fast reactors were expected to start in 1980.

97. The fast-reactor development work had been carried out in preparation for the joint construction with France and the Federal Republic of Germany of the first 1200-MW(e) plant and for subsequent commercialization of fast reactors. In the fuel-cycle sector the work on uranium enrichment had been carried out with participation of the national industry in the construction of the EURODIF plant, while in fuel fabrication, negotiations had been undertaken between CNEN and AGIP Nucleare to achieve the co-ordinated action outlined in the Energy Plan. On the operational level, the necessary steps had been taken to ensure a supply of fuel for the CIRENE and PEC reactors.

98. Finally, in the reprocessing field, the possibility of collaboration between CNEN and the industries concerned had been investigated, with a view to achieving commercial dimensions. In that field, the present operating experience of CNEN's two reprocessing plants, EUREX and ITREC, could offer a valid starting point for future autonomous developments on an industrial level.

99. Within the framework of the EUREX programme, an agreement had been drawn up between CNEN and the AECL for the treatment of 72 fuel elements irradiated in the Canadian CANDU-type reactor. That reprocessing campaign was intended to prove on an industrial pilot scale the technical feasibility of the simplified reprocessing system, drawn up jointly by CNEN and AECL, for CANDU-type fuels.

100. Mr. GIRAUD (France) said that the hospitality of the Brazilian Government in inviting the Conference to Rio de Janeiro presented an excellent opportunity for the participants to acquaint themselves with the achievements of modern Brazil. It was not, incidentally, the first time that the representatives of countries interested in atomic energy had met on the American continent, for exactly twenty years previously the Conference on the Statute of the International Atomic Energy Agency had opened in New York.

101. Atomic energy at that time had really been in its infancy, the number of operating power stations could easily be counted on the fingers of one hand, and the first contracts for the export of research reactors had only just been concluded. What a change had occurred since then!

102. The 'sixties had seen the development and perfecting of thermal reactors, normally employing enriched uranium as fuel and light water as moderator, while fast-breeder reactors were still at a point between the research and development phase and the pre-industrial stage. The first fast-breeder prototypes had gone into service in the Soviet Union, the United Kingdom

and France, where the performance of the 250-MW(e) Phénix reactor continued to be a heartening factor. The French Government had, in fact, just authorized the building of Superphénix, the first full-size station.

103. As regards uranium, the reversal of the attitude of purchasers following the oil crisis and the prolonged ban on exports in certain areas had led to a rise in the hitherto low level of prices, which provided the basis for a resumption of prospecting throughout the world.

104. The importance of the fuel cycle had increased as time went by, the two main aspects - apart from the supply of uranium - being enrichment and irradiated fuel reprocessing. In the sphere of enrichment, fresh capacity had been or was being provided, some of it in the international context of EURODIF and URENCO, with gaseous diffusion remaining easily the most frequently used process. As regards reprocessing, although the solvent-extraction technique developed over twenty years previously remained fully valid in itself, industrial development on a world-wide scale had unfortunately tended to mark time; pilot plants were relatively easy to construct and operate, but full-size facilities presented numerous operational difficulties. However, he wished to call attention in that connection to the successful extension of the French plant at La Hague.

105. The increase in the proportion of nuclear power in the prospective total French electricity output constituted an illustration of the growing recourse to the atom as a source of power. That proportion was about 10% in 1975, would be about 30% in 1980 and over 65% in 1985, when 45 000 MW(e) would be generated. Nuclear power was indeed vital for meeting growing energy needs, without any question of it competing with the equally essential conventional sources.

106. That trend was irreversible, for there was far too much misery and underdevelopment in the world for it to be possible to maintain a zero growth rate, as advocated by certain opponents of the consumer society. Projections which had been carried out even indicated that there was no time to be lost in the introduction of fast-breeder reactors if a uranium shortage was to be averted.

107. The evolution of the world energy picture implied international solidarity, if only because the countries of the world found themselves in totally different situations, with some of them lacking vital raw materials and others unable to call into being the necessary facilities without outside aid. The main problems arising in that connection were the training of technical staff, the planning of programmes, the building of reactors and the multifaceted fuel cycle problem.

108. The international solidarity to which he had just referred was further based on the fact that progress in nuclear energy had to be accompanied by measures to prevent potential dangers. Those measures concerned the radiation safety

of nuclear installations, questions of physical security and anti-terrorist precautions - which largely devolved on national authorities - and safeguards to ensure peaceful utilization and to prevent diversion to military ends.

109. The mutual dependence of importing and supplier countries was also a feature of international nuclear exchanges. It was quite natural that importers of nuclear materials and equipment should desire the maximum stability and reliability on the part of their suppliers. The latter, equally naturally, were anxious that their assistance should be rendered under conditions guaranteeing nuclear safety, physical security and exclusively peaceful utilization.

110. France was acutely conscious of those two points of view, and endeavoured to reconcile them in all its export operations. While respecting the independence of the customer, his Government attached special importance to measures ensuring that French sales of nuclear equipment could never lead to the proliferation of nuclear weapons. It was with that aim in view that the French Government had recently set up a "Council on Nuclear Foreign Policy", under the chairmanship of the President of the Republic himself.

111. France believed that the international nature of world nuclear development was as inevitable as the actual expansion of nuclear power, and it was in that connection that, for twenty years past, the Agency had been making such a valuable contribution.

112. It might be of interest to review the Agency's history and inquire to what extent its development had fulfilled the hopes of its creators. First of all, one could congratulate oneself that the Agency had retained its technical character and had escaped excessive influence by the great political confrontations of the present generation. On the other hand, there was no denying that the Agency had not assumed one of the principal roles which its founders - including President Eisenhower - had forecast for it, namely that of a broker in nuclear materials. Instead, the uranium-producing countries had continued to export special fissionable materials on the basis of bilateral agreements, though at the same time relying ever more heavily on the Agency to provide the necessary safeguards.

113. In the field of technical assistance, the training of specialists in nuclear science and technology, the introduction of nuclear energy and techniques into the developing countries and the use of radioisotopes and radiation in medicine, agriculture and hydrology, the Agency had made a valuable contribution to international solidarity. The fact that there were relatively few disputes on the way in which technical assistance funds were allocated showed that the Agency was applying the inevitably limited financial resources with skill and judgement.

114. The Agency had likewise registered successes in the sphere of information exchange, the most important forthcoming meeting for that purpose being the Salzburg Conference to be held in May 1977. Also to the Agency's credit was its work on the safety of nuclear installations and the preparation of codes and guides, particularly in connection with reactor safety.

115. However, it was in the field of safeguards that the Agency had carried out its most original and constructive work. He recalled that the most controversial issue at the Conference on the Statue in 1956 had been the drafting of Article XII, difficulties in agreeing on which had almost brought the negotiations to a halt.

116. It was interesting to note that the paragraph of Article XII which had given rise to the most serious difficulties had never yet been applied, although its topical importance was beyond doubt. The paragraph in question dealt with the fate of special fissionable materials produced in a facility under safeguards, and specified that the countries possessing the materials would decide on the amount to be retained on their territory for use in their reactors, in operation or under construction, the balance being deposited with the Agency. The Agency was certainly not at present in a position to act as a depositary for special fissionable materials on those lines, but the problem might arise and should be accorded timely study.

117. The Agency's success in the safeguards field was proved by the fact that, as the years had gone by, exporting countries, including France, had abandoned bilateral controls and had entrusted safeguards operations to the Agency.

118. It was important to stress that the Agency could play its proper role in that domain only if it was secure against external pressure and only if its safeguards system was universally recognized as reliable and unaffected by political or commercial considerations.

119. It was easy to imagine what would soon happen to that system were it to be used to cast doubt on the appositeness of a given nuclear operation. The French Government was convinced that, in approving safeguards agreements, the Board of Governors should refrain from assessing the merits or appropriateness of the activities to be safeguarded and should confine itself to ensuring that the terms of the agreement under discussion would in fact enable the Agency satisfactorily to carry out the safeguards functions.

120. The success achieved by the Agency over the preceding twenty years was something so valuable that every effort should be made to protect it against potential political dangers. If the Agency had been able to remain a stranger to the political confrontations convulsing the modern world, the credit was largely due to the Director General and to the Secretariat which he had headed for the past fifteen years.

121. Mr. OLIVARES BAQUE (Spain) said that in the period since the preceding General Conference his country had continued to develop the peaceful uses of atomic energy. Its national plan for uranium exploration involving an investment of about 12 000 million pesetas over a period of ten years had gone into operation in 1975. It was being implemented in accordance with the programme but had not yielded any significant new information to date. Spain's estimated uranium reserves had remained unchanged. As regards uranium concentrates, the Andújar plant of the Spanish Nuclear Energy Board had attained a production of 82 tons of  $U_3O_8$  during 1975 and the National Uranium Enterprise (ENUSA) 86 tons of  $U_3O_8$  at its facilities at Ciudad Rodrigo, which had gone into operation in May 1975.

122. ENUSA had initiated the necessary administrative action to obtain authorization for installing a plant for fabricating fuel elements for light-water reactors in the Salamanca province. It was designed for a capacity of 800 tons of enriched uranium to be attained in 1985 in successive stages of growth.

123. The national energy plan provided for an installed nuclear power capacity of about 25 000 MW(e) by 1985, which would account for 56% of Spain's total power output at that date.

124. In the case of the nuclear power plants in operation, the overall participation of Spanish industry was about 43% which represented almost the whole of construction and erection work, about 60% of engineering and a fairly high proportion of personnel training activities. Its contribution to capital equipment, however, was only 25%.

125. For power plants under construction, which were planned to be put into operation by 1980, the Spanish participation was expected to be 66.5%, rising to 80% for those to be commissioned after 1980.

126. In 1975 nuclear power accounted for 9.16% of the total power produced in Spain.

127. During 1975-1976, authorization had been granted for the construction of the Cofrentes nuclear power plant while that for preliminary work prior to construction had been received for four other plants at Trillo, Sayago, Valdecaballeros and Vandellós.

128. Because of shortage of space at the Juan Vigón National Nuclear Energy Centre in Madrid, the Nuclear Energy Board had felt the need to construct a second centre with sufficient capacity to carry out its research and development programmes in connection with national energy planning. It had obtained Government authorization in 1976 for the construction of that centre in the Soria province at a site some 200 km away from Madrid.

129. The Nuclear Energy Board continued to be the only producer of radioisotopes in Spain for

applications in medicine, industry, agriculture, research, etc. The total volume of sales for those products was 11.5 million pesetas in 1975 and 5.6 million pesetas in the first half of 1976.

130. The Nuclear Energy Board had a nitrogen-15 enrichment plant, to which it had added a second production unit in 1975. The sales of  $^{15}\text{N}$ -labelled molecules had amounted to 1.6 million pesetas in 1975 and 1.1 million pesetas in the first half of 1976. Almost the entire output was exported from Spain to customers in more than 40 countries.

131. The Nuclear Energy Board distributed imported radioisotopes apart from those it produced itself. The sales of radioisotopes of both kinds amounted to 38.5 million pesetas in 1975. In 1976, the sale of imported products through the Board was being stopped and the overall figure for the first half of 1976 was therefore 16.8 million pesetas. Those figures did not include imports by private companies for authorized users.

132. At the end of 1975 there were 12 000 users of isotopes and 400 authorized radioactive facilities in his country.

133. Spain had always considered international co-operation to be the best method of promoting understanding between peoples and the progress of mankind. It therefore continued to attach great importance to co-operation agreements with

other countries for the mutual development of nuclear energy for peaceful purposes. It maintained collaborative relations through agreements with Governments and national nuclear bodies in Brazil, Canada, Chile, France, the Federal Republic of Germany, Korea, Peru, Portugal and the United Kingdom. The existing agreements with Argentina, Pakistan and the United States had been extended and those with Colombia and Venezuela were in an advanced stage of implementation. His Government hoped to intensify those contacts and make increasing use of the results of the collaboration with the sole objective of deriving mutual benefits from each other's experience and knowledge.

134. The Spanish delegation wished to extend its fullest co-operation to the Agency, whose efforts to spread the benefits of the peaceful uses of nuclear energy on a universal basis deserved the support and gratitude of all nations. For its part, Spain would always make the greatest possible contribution to enable the Agency to fulfil its objectives. In that connection, he was pleased to state that the Nuclear Energy Board had offered to hold in Madrid an interregional training course in the planning and operation of nuclear power projects and to provide support and facilities for the meetings of the working group on storage sites for low- and medium-level radioactive waste and the working group on nuclear power plant instrumentation.

● The meeting rose at 1.10 p.m.

