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President: Mr. MALU wa KALENGA (Zaire)

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ELECTION OF OFFICERS AND APPOINTMENT OF THE GENERAL COMMITTEE

1. The PRESIDENT said that the consultations which had been held regarding the composition of the General Committee had led to agreement that the General Committee should be composed of 16 members: the President of the General Conference, the eight Vice-Presidents, the Chairman of the Committee of the Whole, and six additional members. To that end, the General Conference would have to suspend Rule 40 of the Rules of Procedure of the General Conference, as it had done in the previous two years, and decide to elect six additional members to the General Committee instead of five.

2. He took it that the General Conference was willing to agree to the suspension of Rule 40 and to elect six additional members to the General Committee. He wanted to stress that that decision would in no way constitute a precedent in regard to the appointment of the General Committee at later sessions of the General Conference, especially as the informal consultations between the representatives of the eight geographical areas had shown a common desire to reach a permanent solution in regard to the composition of the General Committee.

3. In accordance with Rule 34 of the Rules of Procedure, the General Conference now had to elect eight Vice-Presidents and the Chairman of the Committee of the Whole. It also had to elect the six additional members of the General Committee.

4. He proposed that the delegates of the following States be elected as the Vice-Presidents of the General Conference: Algeria, Australia, Canada, Colombia, Iraq, Japan, Poland, and the United Kingdom of Great Britain and Northern Ireland.

5. He proposed Mr. Gillon, alternate to the delegate of Belgium, as Chairman of the Committee of the Whole, and the delegates of the following States as members of the General Committee: Federal Republic of Germany, German Democratic Republic, India, Jamaica, Union of Soviet Socialist Republics, and United States of America.

6. The General Conference accepted the President's proposals. The General Committee was thus duly appointed.

GENERAL DEBATE AND ANNUAL REPORT FOR 1977 (GC(XXII)/597)

7. Mr. MYERS (United States of America) said that in the third decade of co-operation nuclear power continued to have considerable advantages, but at the same time it entailed ever more awesome responsibilities. In spite of progress in the field of safety, nuclear power continued to be a source of dangers which the Agency should combat while taking into account the needs and wishes of all its Member States. He then read out a message from the President of the United States of America.

8. MESSAGE FROM THE PRESIDENT OF THE UNITED STATES OF AMERICA

"On behalf of all my fellow Americans, I send warm greetings to the distinguished delegates of the twenty-second General Conference of the International Atomic Energy Agency.

"In these years of global uncertainty about future energy supplies, our resourcefulness in finding internationally-acceptable methods to expand the safe and peaceful uses of atomic energy will be crucial in improving world-wide living standards.

"Nuclear energy retains an important place in the United States planning for both domestic and world prosperity. Our experience since last year's 20th anniversary conference and our exchanges of views in the formative stages of the International Nuclear Fuel Cycle Evaluation bode well for a future in which many nations can benefit from nuclear power.

"We must continue to seek a proper balance between central and dispersed systems, between energy abundance and environmental impacts, between programmes appropriate to developed nations and developing countries, so that all Members of the IAEA can continue to benefit, not only in augmented energy supplies, but also in agriculture, health and a variety of other peaceful applications of the atom.

"The United States looks forward to sustained close co-operation with the Members of the IAEA in this vitally important field."

9. Since the last presidential elections, the United States has set about better defining its energy policies, especially in the nuclear field. The Agency has also made great progress. Some remarks concerning prospects for the peaceful uses of nuclear energy throughout the world seemed called for.

10. Everyone knew of the difficulties the United States had encountered in trying to reach agreement in Congress on a national energy policy; important results had nevertheless been obtained and deserved to be mentioned. First, the energy-saving measures proposed by President Carter had had some effect.

Oil imports had been reduced by 13% in the first half of 1978, and in recent years energy consumption had ceased growing at the same rate as the gross national product. The slowing-down was in fact greater than that recommended at the summit meeting in Bonn in July 1978. Secondly, the United States had decided to develop the mining of its abundant coal resources, and the Government was encouraging industrialists to use that fuel rather than imported oil and gas. It also sought to stimulate the synthetic fuel manufacturing industries and wished to co-operate with other countries in that endeavour. Thirdly, measures had been taken to increase national oil and gas production. Fourthly, technologies based on solar energy and fusion energy were being studied. Solar energy was beginning to be used for heating and cooling purposes, but much research would still be needed on other solar techniques and on fusion. The work of the Agency might be very useful in that field. Fifthly, the United States had taken further steps to increase the safety of nuclear power. The capacity to enrich uranium was being expanded so that it could be used as fuel in light-water reactors. Finally, Congress had passed a new law on nuclear non-proliferation which would make the United States a reliable supplier. The United States had liberalized the conditions imposed by its contracts so as to respond better to consumer needs, with respect to the techniques offered as well as to prices. Other countries were now competing as suppliers, which was healthy for the world market. So long as contracts entailed non-proliferation measures, customer countries should be able to turn to the supplier who suited them best.

11. With regard to the safety of nuclear energy, his country was taking steps towards effective and safe radioactive waste management, without which nuclear power could not be utilized effectively. Since reprocessing technology had not yet been perfected, the Government had offered to take charge of the storage of spent fuel. As a result, it was now identifying storage sites, ensuring their safety, making the necessary ecological studies and seeking to obtain legislative approvals. The United States was not only willing to help its own utilities but was prepared to take back certain amounts of spent fuel from countries to which the fuel had been supplied, if there were no other storage possibilities and if the operation was in the interest of non-proliferation. However, all countries would have to try to find a solution to their own storage problems.

12. In connection with the disposal of radioactive waste, the United States was making a massive effort better to demonstrate to the public that all kinds of radioactive waste could be safely disposed of. As long as the effectiveness of Agency safeguards could be ensured in step with the development of the nuclear industry, nuclear power would continue to grow in importance in the United States and in other countries. The United States already had an installed nuclear capacity of 50 000 MW, and double that capacity was expected for 1985. The light-water reactor had proved reliable and would certainly be very valuable in the future. Better fuel utilization and the use of advanced isotopic techniques should increase the energy yield of uranium resources.

13. By revising its export principles and carefully examining the problems of proliferation and safety connected with the nuclear fuel cycle, the United States hoped to contribute to the economic development of all countries. Although the United States had passed through a difficult period of doubt concerning nuclear policy, the problems had been faced and the public had been shown that the risk of proliferation was not taken lightly. Other countries had gone through a similar phase, and the present situation was much clearer and safer than before. It would certainly be easier to find international solutions, in spite of the seriousness of the problems. Thus, the Bonn economic summit had concluded with a declaration in favour of nuclear power. The United States refused to believe that only a few privileged States had a monopoly on morality or responsibility. However, although countries were entitled to different points of view, the principal nuclear suppliers must respect non-proliferation standards irrespective of commercial pressures. Moreover, the nuclear industry and trade could develop only if the spread of sensitive facilities and materials was limited and if all countries co-operated to solve the problems of the fuel cycle.

14. In that connection, the United States thought it encouraging that over 50 countries and several international organizations were participating in the International Nuclear Fuel Cycle Evaluation (INFCE). It was to be hoped that INFCE would produce a comprehensive analysis of the situation which would guide decision-makers and make new institutional arrangements possible. The countries that were taking part in the evaluation had often expressed different views, but the dialogue that had been started should lead to common principles. Countries seemed ever more concerned to avoid premature plutonium production and wide-spread national control of separated plutonium, and were realizing that there was no economic urgency for recycling plutonium in thermal reactors. The

United States and other countries were perfecting techniques by which the highly enriched fuel of many research reactors might soon be replaced by low-enrichment uranium.

15. The Agency's safeguards programme was of increasing importance in view of the growing number of facilities subject to safeguards, and it remained the centrepiece of the world's efforts toward non-proliferation. That was why the United States had voluntarily offered to accept safeguards on a number of facilities, which would be opened to Agency inspectors as soon as the offer was approved by the Senate. Moreover, since 1976 the United States had been giving special support to the Agency's safeguards system, in addition to its regular contributions and its voluntary contributions for the technical assistance programme.

16. However, that support would be wasted without that of other countries. He therefore called upon other Member States to increase their safeguards contributions as far as possible, to maintain their national systems of accountability and control and to co-operate with the Agency in the application of safeguards. It was true that the safeguards system had recently been criticized, but that only emphasized its importance. The Secretariat was doing its best to improve it and to provide the Board of Governors with more exact information that was easier to evaluate. Besides safeguards, physical protection also deserved mention; its importance was growing as ever greater quantities of nuclear materials were stored, used and transported. The draft convention on physical protection contained provisions for preventing the diversion or theft of nuclear materials by international terrorists or sub-national groups which might jeopardize peaceful uses of nuclear energy.

17. A further international event of the highest importance had been the United Nations Special Session on Disarmament in the summer of 1978. On that occasion the United States Government had proposed expanding its contributions to the peaceful nuclear programmes of developing countries parties to the Treaty on the Non-Proliferation of Nuclear Weapons (NPT)^{1/}. That assistance would be provided through the Agency, which showed the importance that the United States had continued to attach to the Agency's technical assistance

programme for the last twenty years. If Congress approved, the United States would establish a trust fund of \$5 million which would be administered by the Agency from 1980 and would provide funds for experts' services, equipment, research materials and fellowships in the areas of health, safety and environmental protection related to nuclear power plants. In addition, the United States would, each year for five years, supply the Agency with uranium enriched to less than 20% and worth \$1 million. The Agency could distribute it to countries for research purposes, giving preference to developing countries parties to NPT, which would receive it free, or selling it at reduced price to other States parties to NPT or to developing countries not parties to NPT. In the latter case, the research should be directed more towards the applications of lower-enrichment, rather than higher-enrichment, uranium. Finally, the United States intended to furnish fuel cycle services with an annual value of \$1 million and to provide financing for nuclear power projects undertaken by countries parties to NPT. The United States hoped that that assistance would strengthen NPT and add to the Agency's importance in the field of technical assistance.

18. The United States recognized that the Agency could fulfil its mission only if it kept a fair balance between its safeguards activities and its efforts to let the developing countries benefit fully from the peaceful applications of atoms in agriculture, medicine and power production. Recently, the Agency had issued a large number of guidelines in connection with safety and environmental protection. Those on the underground disposal of radioactive waste deserved special mention. In that context the United States would inform the Agency's Member States of the results of studies on the management of radioactive waste. A further major task was the development of standards and codes of practice for the safe operation of nuclear power plants. Many experts from the United States had participated in the drafting of those documents, which would soon be published and would be extremely useful to all Member States. As Member States expanded their nuclear activities the Agency would have to provide more and more assistance in the form of advice, fellowships, equipment and experts' services. The United States had therefore increased its contribution in kind to \$2 650 000 in 1978. Fellowships had been provided and five courses organized, four of which had taken place at Argonne National Laboratory. Such fellowships and courses were particularly useful to developing countries and the United States called on other Member States to increase their aid. The Agency's technical assistance was also

^{1/} Reproduced in document INFCIRC/140.

very important in other areas, such as life sciences. The United States had for two years been providing special assistance to the Agency in extending medical applications in developing countries, and it supported the applications in ecology, agriculture, stock-breeding and disease control.

19. After having thus expounded the main interests and activities of the United States in the nuclear field, he pointed out that the Agency's Member States must above all else agree on international measures for non-proliferation and the application of safeguards. In spite of the difficulties, Member States should be confident of finding a solution. Other endeavours had been declared impossible, e.g. establishment of an international atomic energy agency, agreement on a safeguards programme, conclusion of a non-proliferation treaty and achievement of a dialogue between supplier countries and recipients of nuclear materials and equipment. All those endeavours had succeeded. Any defeatism should be resolutely rejected and a spirit of conciliation and optimism mustered to expand the peaceful uses of atomic energy throughout the world.

20. Mr. PECQUEUR (France) said that his country felt obliged to voice its opposition to the trend towards excessive increases in the Agency's budget. That attitude should not be interpreted as expressing any lack of confidence in the Agency, whose role in the development of nuclear energy for peaceful purposes was well appreciated by the French Government; on the contrary, it was determined wholly by considerations of healthy financial administration. In the existing economic circumstances there seemed to be little reason why international organizations should increase their budgets at such a fast rate while Member States were subjecting themselves to severe restrictions. The efforts to economize which the Director General had made after the Board's proceedings in June were therefore gratifying. However, he was empowered to announce that his Government had included in its budget for 1979 a sum of \$300 000, representing France's voluntary contribution to the Agency. That contribution marked a substantial increase; but official confirmation could only be given, of course, on completion of the customary budgetary procedures. In addition, the French Government was willing to sponsor a number of technical assistance projects which the Agency had been unable to include in its budget for 1978, and negotiations were under way between the technical departments of the Commissariat à l'Énergie Atomique and the requesting countries concerned. During 1978 France had hosted, for the third time, a course on "The role of

nuclear energy in a national power plan", at the Institut national des sciences et techniques nucléaires, and also an international symposium on "Nuclear power station control and instrumentation", which had been held in April at Cannes. At the present moment a group of some twenty specialists in nuclear safety and environmental protection were undertaking a study tour in France. Finally, France had signed a verification agreement with the European Atomic Energy Community (EURATOM) and the Agency under the terms of which the Agency would be able to apply safeguards to certain materials designated by France on its territory. That agreement illustrated the importance which France attached to the Agency's safeguards activities.

21. Since the previous session of the Agency's General Conference, in September 1977, France had continued with the implementation of its nuclear programme, which by 1985 would provide more than half the country's electrical power generating capacity. In addition to the two reactors put into operation in 1977, France had built two new units during the current year, and at the present rate of construction one could anticipate the annual introduction of 5000 MW(e) in the years to come.

22. He wanted to make special reference to various stages in the parallel and simultaneous development of the fuel cycle industry. Trials with the first diffuser group that been started in the EURODIF enrichment plant at Tricastin in February last, and commercial production would begin early in 1979. The construction of that industrial plant was a typical example of the efficiency of the nuclear industry, but in addition it constituted a model of international co-operation in regard to one of the key factors of the fuel cycle. At the other end of the chain, the La Hague installation had made a satisfactory start with the second reprocessing campaign for irradiated fuels from water reactors; it was about to make a start on the third campaign, and Cogema was undertaking extension work so that it would be able to honour the reprocessing contracts signed with various foreign electricity companies, involving more than 6000 tonnes of fuel. Mention had also to be made of the first campaign at the fission-product vitrification plant at Marcoule.

23. The reprocessing of irradiated fuels and the vitrification of high-level wastes were the two options selected by France to "close" the nuclear fuel cycle. Those options seemed to offer the best guarantee of environmental safety and to permit the best possible utilization of the earth's uranium resources, thanks to the possibility of plutonium recycling in fast-breeder reactors.

24. In that area, France's choices were clear and the year's results were positive; after two years of very regular operation, it had been necessary to shut down the Phénix demonstration reactor so that various structural items in the heat exchangers of the intermediate circuit could be modified. After the modifications, Phénix had been put into operation again at full power and had performed excellently, a fact which largely confirmed the advantages of that type of reactor. Work at the Creys-Malville prototype large-capacity power station was also being continued, and the entry into service of that plant, the first fast breeder reactor plant, was planned for 1983. It was important to note that the first core of the Phénix reactor had been completely re-processed at the Marcoule pilot plant, which showed that, in that respect too, fuel-cycle technology and reactor technology were being developed simultaneously. However, whatever the extent of the world's exploitable uranium resources, they were of limited accessibility and were also unequally distributed between the various countries in the world. It was indeed possible to improve the utilization of uranium by thermal reactors, but such improvements could hardly change the order of magnitude of the problem; with fast breeders, a country could have access to an energy potential which was independent of natural geographical differences and several factors of ten greater than the world's prospective oil resources; so the use of fast-breeders seemed essential.

25. For any given country, the urgency of such a step was, of course, a function of the relative scope of its nuclear programme and its own uranium resources, and opinions regarding that urgency differed from one country to another. Bearing in mind the lead time for the development of any sophisticated technology, however, a start should already be made to gain appropriate experience of fast breeders in countries where their introduction was justified in the short or medium term. The condemnation of fast breeders on the grounds of proliferation risks due to the use of fuel rich in plutonium was without foundation. The true problem resided mainly in the surveillance of the plutonium stock between its extraction from the irradiated fuels and re-utilization in a fast or thermal reactor. To oppose the development of fast breeders and the extraction of plutonium from irradiated fuels would be a serious act through which the entire international community could suffer. Steps should therefore be taken to reduce the proliferation hazards of the plutonium cycle to a level comparable with that of the uranium-235 cycle, and that aim was quite feasible.

26. Once the technical and technological problems of nuclear energy had been solved and its economic competitiveness compared with fossil-fuel sources proven, it would be necessary to turn to the problem of public acceptance. One could not but be struck by the passionate nature of the reactions observed in that connection. It was clear, however, that the state of the world energy balance necessitated a substantial contribution from nuclear power in the 80s and 90s.

27. In addition, the latest reports from unbiased and competent authorities showed that, to produce the same quantity of energy, the risks involved in nuclear power were very much less, both for persons occupationally concerned and the population at large, than those involved in the use of other energy sources.

28. Finally, those who had sincere misgivings regarding the type of society which the development of nuclear energy might call into being should learn from history that the respect for individual and collective freedoms was hardly compatible with the need to operate under conditions of shortage.

29. He felt sure that the arguments he had advanced would in the end prevail and that the public would finally adopt a realistic attitude in its choice of energy supplies. It was in that spirit that the French Government had signified the importance it attached to public information in the nuclear field by creating, under the Prime Minister, a Council for Information on Nuclear Power.

30. In that connection it was comforting to note that, when the public had had the opportunity to take up a definite position, it had in general responded more favourably to nuclear energy than had been anticipated, even in certain areas reputed to be imbued with anti-nuclear sentiment. Public acceptance was achieved through the "de-dramatization" of problems with a psychological approach, through better knowledge of the overall energy context, and through a better appreciation of the relative risks of different energy sources. That was a long-term task in which sociologists and psychologists were required as much as engineers.

31. There was one area, however, where it was not enough to rely on time, but where it seemed a matter of urgency to determine and apply appropriate measures, namely the area of non-proliferation. It was necessary to get out of that tragic dilemma where the choice was only between a world in which any conflict could degenerate into a world catastrophe, since every nation had nuclear weapons, or a world in which energy shortages might destroy international equilibrium and in which all hope of development would be barred to the poor.

32. The duality of good and evil was not specific to nuclear energy but was in fact an inherent characteristic of technical progress, and in the case in point it had to be realized that the potential benefits and the risk were both very great.

33. It had to be stressed first of all that even total renunciation of the potential benefits would not eliminate the risk, because other methods of producing nuclear arms existed which were faster and less costly than the building of electric power stations with their associated fuel cycle. One therefore had to face up to the prospect of developments in the nuclear sector throughout the world, while at the same time endeavouring to minimize the risk of a conflagration. In addition, any policy of non-proliferation should avoid creating a condition of segregation by reserving the benefits of nuclear energy to a few developed countries. If the size of the equipment could be appropriately adapted and the financial problems solved, nuclear energy constituted for developing countries a great hope in the medium term and a vital hope in the long run. One had to find a middle way whose objectives would be as follows: to promote the development of nuclear energy, allowing all to benefit therefrom in a manner and according to a time schedule which suited their economic development; and to limit the risks of proliferation by applying a flexible policy, based on certain restrictions but also on certain safeguards, while respecting the legitimate opinions of the countries concerned but forbidding the diversion of materials, facilities or techniques.

34. Parallel with the comprehensive studies in the context of the International Nuclear Fuel Cycle Evaluation (INFCE), to which French technicians were making an active contribution, the French Government was pursuing its own lines of research on that subject within the framework of the Inter-ministerial Council on External Nuclear Policy, established in September 1976 by the President of the Republic. The Government desired to refine its nuclear policy, the main lines of which as laid down in October 1976 were not in any doubt.

35. France realized the essential, if not irreplaceable, contribution that nuclear energy could make to the development of various countries and wished to confirm its intention of promoting peaceful nuclear applications in fulfilment of its international engagements. On the other hand, in keeping with its specific and humanitarian traditions, France did not want to intensify the threat represented by the proliferation of atomic weapons.

36. Far from being purely interdictory, however, French policy was resolutely constructive and was aiming at an international organization for the marketing of materials and services which would guarantee and control their peaceful utilization but which would also give consumers the certainty of being able to obtain them when required, without excessive restrictions, which would likewise guarantee that international techniques were developed satisfactorily from the point of view of proliferation risks, and which would finally ensure due respect for national options, in so far as the latter conformed to clear economic objectives and were not systematically directed towards techniques of doubtful utilization. France believed that it was possible to reconcile all those objectives and was willing to collaborate with everyone in order to establish a system of technical procedures corresponding to those criteria.

37. It was clear that an international consensus was a condition for progress, since only the agreement of the various partners would make possible the equitable application of rules inevitably not flexible enough to cover all cases and all interpretations.

38. The technical reports prepared on an international basis by the different INFCE working groups should, by their evaluation of the more or less proliferative nature of the technologies envisaged, provide a common technical basis which would facilitate the indispensable consensus on the political measures which would have to be derived therefrom.

39. In regard to non-proliferation, French efforts had not been restricted to mere elucubration, and in two areas it had been possible to give concrete form to France's philosophical approach thanks to the development of technologies equivalent in terms of efficiency to those at present in use or under development, but much more satisfactory from the point of view of non-proliferation. For example, the process of uranium enrichment by chemical treatment reported at the International Conference on Nuclear Power and its Fuel Cycle (the Salzburg Conference), held in May 1977, a process which virtually excluded the attainment of high isotope concentrations, embodied intrinsic non-proliferation safeguards which were unique in that particularly sensitive area; and the development of "caramel" fuels combining the conventional plate structure with the use of uranium oxide instead of mechanical alloying meant that only slightly enriched uranium could be utilized without adversely affecting reactor performance.

40. It was still necessary to determine a suitable policy for the management of plutonium, which constituted no special risk except when it was separated and free from fission products, which was not the case with reactors, even fast breeders. The crux of the plutonium cycle problem was therefore the management of stocks between output from the reprocessing plant and return to the reactors. That problem was by no means insoluble but constituted an essential component in the making of a satisfactory non-proliferation policy.

41. He hoped that international collaboration would make it possible to reduce the risks of proliferation associated with plutonium to the same acceptable level as would be reached in the case of risks relating to the enriched uranium cycle. It was his earnest wish that, in spite of the continuing difficulties, nuclear energy would before the end of the present millenium start to fulfil the hopes that humanity had placed in it for a third of a century past, and would thus make the important contribution that was needed for the progress of man in the realms of energy, economics and peace.

42. Mr. HAUNSCHILD (Federal Republic of Germany) said that in the year that had just passed the public had taken considerable interest in the nuclear power debate and the two main problems associated with it: the contribution nuclear energy should make to the overall energy supply and ways of ensuring its peaceful application.

43. Such interest was fully justified since, just as much today as in former times, the adoption of any new technology capable of changing man's living conditions involved political decisions for which a consensus had to be sought. It was therefore vital that the public should maintain or regain its faith in governments, science and industry, and regard them as capable of controlling the use of nuclear energy and restricting it to peaceful purposes. The discussions on that subject, moreover, had lately taken a more objective turn.

44. Following lengthy and sometimes controversial debates, his country had decided, at the beginning of the previous year, to revise its energy programme. All parties had agreed that there was need to diversify the sources, reduce the proportion of oil and make use of all possibilities for conservation, and also that the predominant part would be played by coal, which was the Federal Republic's main source of energy on its own territory. It had been decided, nevertheless, that nuclear energy was still indispensable in order to cover the considerable remaining need. He recalled that in 1977 nuclear power plants had accounted for approximately 13% of the overall electricity output in the Federal Republic of Germany.

45. The worldwide discussion on energy and non-proliferation had enhanced the importance of the Agency which, over the past year, had intensified its efforts to promote the peaceful uses of nuclear energy and technical co-operation with the Member States of the Third World. The volume of nuclear materials and the number of facilities, both old and new, under Agency safeguards had increased sharply, and the Agency's role as a worldwide co-ordinator was emphasized by INFCE, which had been started in October 1977.

46. In all countries, economic development required a safe and sufficient energy supply at acceptable cost, and it was for that reason that energy now ranked among the major issues in international politics, at a time when it was important to narrow the existing North-South gap and relax the tensions resulting from it.

47. The first essential was that each country should use its own resources, which in the case of the Federal Republic was coal, and elsewhere could be hydroelectric power, while in a large number of countries in the Third World there could be solar energy. But the techniques required for improving the exploitation of those resources were still lacking. His Government was aware of that problem and was willing, in conjunction with others, to assist in solving it. The plan was not only to use solar energy in the Federal Republic, where it would in any case be limited by the climate, but also to develop methods suited especially to developing countries.

48. Nuclear power would still be necessary, however, above all for supplying the major consumers such as big cities, large factories and extensive grids. In that area, too, the Federal Republic had entered into partnership with various countries in order to assist them in energy planning and in setting up the scientific and technical infrastructure required, as well as to transfer know-how and help them to develop in terms of their own specific interests and potential.

49. The advice, mediation and direct contributions of the Agency had been of the greatest value in that respect. Its training programmes and its recommendations on the construction and operation of nuclear power stations were examples of successful work, as were its studies on the feasibility of introducing nuclear energy in various regions. Other important tasks were waiting to be tackled by the Agency in that field.

50. However, its budget could not meet all requirements. During the present year some \$20 million were being allocated totally or primarily for the benefit of the developing countries. That was the largest item in the budget, followed by \$12 million devoted to safeguards, a figure which would incidentally have to be increased owing to the very fact that, thanks to the Agency, nuclear activities were expanding in many places.

51. The importance which the Federal Republic continued to attach to the Agency's technical assistance was attested by what had become the traditional announcement of his Government's voluntary contribution to the following year's budget, namely about \$700 000 to the General Fund and \$1.5 million as an additional voluntary contribution to pay for fellowships, training courses, scientific conferences and experts' services.

52. The second important area of the Agency's work was that of safeguards against proliferation. All of the Agency's Member States were united in their desire to prevent proliferation, as was shown by the Treaty which had been concluded ten years previously and which, in spite of its imperfections, had none the less contained proliferation among its signatories.

53. The second NPT Review Conference, to be held in 1980, would make it possible to examine the questions which had arisen in the meantime, including that of universality. The multinational control system whose advantages had been demonstrated by NPT was still not universally applied, thus leaving the risk of bilateral arrangements being made between suppliers and recipients. Efforts must therefore be pursued to secure worldwide application of NPT.

54. Connected with safeguards was likewise the question of differentiation between nuclear-weapon States and non-nuclear-weapon States. The inequality inherent in NPT for political reasons must not be allowed to invade the scientific, technical and economic fields. That was why the Government of the Federal Republic of Germany welcomed the offer by three nuclear-weapon States - France, the United Kingdom and the United States - to open non-military nuclear activities to Agency inspection. The Government of the Federal Republic had been stressing the importance of that point for several years past, and expected speedy implementation of the offer. It noted with satisfaction the progress achieved during the previous year and thought that the Soviet Union should join the movement. Nuclear-weapon States should not enjoy any privilege regarding the peaceful uses of atomic energy; it was therefore necessary that they should

submit their peaceful nuclear installations to all the inspections required, something which would give them practical experience in the application of safeguards and save them from giving the impression that, in the sphere of peaceful uses, they enjoyed privileges in no way implied by the principle of non-proliferation.

55. There remained one great unsolved problem, that of the balance between implementation of NPT and the promotion of peaceful uses. Symmetrical application was essential if the Treaty was to be effective. Approximately 100 States had acceded to the Treaty, and a wide measure of control was being exercised over them. But they had also acquired the right to the peaceful utilization of atomic energy, which could not be questioned. The intentions expressed in NPT could not, under the pretext of non-proliferation or safeguards, be interpreted as permitting the imposition of restrictions which would virtually amount to preventing the peaceful utilization of atomic energy under economically viable conditions.

56. A non-proliferation system based on discrimination would run counter to the aims of NPT. Discrimination would initially delay the dissemination of various techniques, but in the long run those techniques would be developed and disseminated in an uncontrolled manner. Everyone knew that a civilian nuclear power programme was the most expensive and the most easily detectable way of obtaining nuclear weapons. It was also a fact that the decision of a particular country to acquire nuclear weapons was not merely a function of technical considerations. It was above all a political question, which had to be handled with not only technical but also political methods, including international co-operation on the basis of partnership within the framework and in the express spirit of NPT.

57. The International Nuclear Fuel Cycle Evaluation (INFCE) now being undertaken would make it possible to study all the aspects of the wide agreement which would be necessary on the future use of nuclear energy in the context of NPT. INFCE represented the greatest effort that had ever been made to clarify the relationships between the economic use of nuclear energy and the principle of non-proliferation, with great political and economic values at stake.

58. It was satisfactory that all interested countries could take part in INFCE, and that the discussions were thus open to groups of different interests and of different status. He was also glad that the Agency, in

accordance with the Federal Republic's request, was serving as a forum for INFCE, which would ensure that all those taking an interest, whether active or not, in nuclear energy would be informed of the results of the project.

59. After a year devoted to the collection of data, the actual evaluation could now begin. It was gratifying that within INFCE a pragmatic and realistic approach was becoming predominant, and that there was a growing understanding that it would be preferable - among other reasons, in order to save time - to perfect existing techniques capable of immediate industrial application rather than to contemplate entirely new systems.

60. There was likewise a realization that specific technical changes and isolated institutional arrangements would not solve anything. It was preferable, and possible, to identify a spectrum of co-ordinated measures which could be submitted, with a high degree of agreement, for the approval of Governments. Without wishing to prejudge the future, he thought that some of the following items could be found among those measures:

- Further technical development of safeguards;
- Increasing reliability of nuclear power station fuel supplies;
- Criteria for the use of highly-enriched uranium in research reactors and new reactor types;
- Closer investigation of possible modifications to certain current techniques in the back end of the fuel cycle;
- Establishment of a regime for the deposit of excess plutonium as provided in the Agency's Statute (in which connection he wished to praise the Agency's initiative, which his country would actively support);
- Various mechanisms for international or regional co-operation.

61. Those were the topics on which the Federal Republic of Germany had concentrated its INFCE-related efforts. He wished to point out in that connection that his Government and the Agency had just agreed on a joint programme for the further technical improvement of safeguards. That very comprehensive programme would start with 30 projects to be executed by research centres and industrial undertakings in the Federal Republic, and should assist the Agency to develop effective and at the same time practicable safeguards.

62. New tasks would emerge for the Agency, which was well qualified to accept additional responsibilities thanks to the efforts of the Director General and his staff. The Government of the Federal Republic of Germany wished the Agency well in its work, which was essential for prosperity and security in the world.

63. Mr. CASTRO MADERO (Argentina) recalled Argentina's main achievements in the nuclear field during the past year. The Atucha I plant had continued to operate extremely well, producing 1759 GWh in the course of the year and attaining a load factor of 95%. Construction of the Embalse station, the country's second nuclear power plant, was proceeding normally, with active participation by Argentine engineering enterprises. A final decision regarding the third nuclear power station project, Atucha II, also based on natural uranium, was to be taken at the beginning of the coming year. Thus, by 1986 Argentina would have an installed nuclear capacity of 1500 MW. Argentina would assume full responsibility for the construction of the third station; hence that project would mark an important step towards self-sufficiency in the nuclear field.

64. Like 1968, the year in which the decision to build the country's first nuclear power plant had been taken, 1979 would be a milestone in Argentina's nuclear development: the departure from turnkey purchases of nuclear power plants.

65. With regard to the fuel cycle, the country's activities were aimed at securing the greatest possible degree of national autonomy. To that end, uranium ore prospecting was continuing, and reasonably assured reserves of 25 400 tonnes had been established and additional resources of 4000 tonnes estimated. Knowledge of total nuclear ore reserves constituted one of Argentina's basic objectives, which was being pursued with the collaboration of the private sector, both domestic and foreign.

66. The production of concentrates had by now risen to 150 tonnes and thus was quite adequate to meet the demand; nevertheless, to cover future requirements Argentina was considering exploitation of the Sierra Pintada deposit, which should allow production of 600 tonnes per year. Domestic private industry would participate in the realization of that project, the start of which was foreseen for 1982.

67. The pilot plant for fuel element fabrication was continuing production while awaiting the completion, at the end of 1980, of an industrial-scale

installation that would produce 450 fuel elements a year. Parallel to that, a Zircaloy tube factory was under construction and was scheduled to go into service in 1983.

68. Argentina had developed the basic engineering techniques for constructing an experimental heavy water production plant and had invited domestic industry to take over the detailed engineering and the construction with a view to starting production in 1981. The technology mastered in that project would serve as the basis for the construction of an industrial installation to meet future needs. That path constituted, in Argentina's opinion, the only possible solution in view of the policies of the "Club of London", which tended to increase the dependence of recipient countries on their suppliers.

69. The production and use of radioisotopes and of high-intensity radiation sources had continued to grow. In particular, the National Atomic Energy Commission was producing sealed sources of cobalt-60 and building cells for the production of radionuclides of very high specific activity. The Commission was, moreover, studying the possibility of transferring irradiation plant technology to private undertakings so that they could gradually take over the provision of the sterilization services required in the country.

70. Research and development activities were being concentrated more and more on the fuel cycle, in view of the country's policy of national autonomy, and on new sources of energy. In addition to studies devoted to solar and wind energy, a modest nuclear fusion programme had been put in hand. Work was also going ahead on the installation of the 20-MV heavy ion accelerator purchased by Argentina, which was to go into service in 1982 and would make a valuable contribution to progress in nuclear physics in Argentina and indeed throughout Latin America.

71. In its capacity as a nuclear energy authority, the National Atomic Energy Commission had continued to perform its functions connected with the licensing of nuclear installations and with the consequent regulatory activities. In that connection, its activities had developed particularly in the areas of radiation protection and nuclear safety.

72. Argentina had strengthened its collaboration with the competent international organizations in the nuclear field, including in particular the United Nations Scientific Committee on the Effects of Atomic Radiation, the International Commission on Radiological Protection, the United Nations Environment Programme, the World Health Organization, the International Labour Organisation and, of course, the International Atomic Energy Agency.

73. The brief review he had given of the activities of the National Atomic Energy Commission made it quite clear that Argentina was irrevocably resolved to pursue a national nuclear policy which would assure the country independence in that domain; that objective in fact assumed increasing importance as restrictions imposed at the international level on the transfer of technology and on the supply of nuclear materials became more stringent.

74. He continued with the following statement^{*/}:

"The essential characteristics of this nuclear policy, established by Decree No. 3138 of October 1977, are a belief in the cause of peace, a decision to increase the national scientific, technical and industrial effort and a wide and generous spirit of co-operation in the international field, particularly in Latin America.

"Our peaceful outlook, nourished by a long history of respect for law and justice, has been expressed many times at international conferences and has been fully reflected in our actions.

"The accession of the Argentine Republic to the Antarctic Treaty and the Outer Space Treaty, which contain specific reference to weapons of mass destruction, is a clear demonstration of this policy.

"Recently the Minister of External Relations of my country announced before the United Nations General Assembly that steps were being taken to ratify the Treaty for the Prohibition of Nuclear Weapons in Latin America, in the negotiation of which we played a major role.

"The denuclearization of a geographical region as important as ours can be achieved only in conditions of equality and mutual respect, a principle not acknowledged in the Treaty on the Non-Proliferation of Nuclear Weapons, which is the reason why the people of Argentina have rejected it totally and spontaneously.

"Furthermore, as our Minister of External Relations has stated, this Treaty has failed in its application, since not only has it not stopped vertical proliferation but it has not even slowed down the rate thereof, as demonstrated by the fact that whereas in 1968, the year the Treaty was opened for signature, the superpowers possessed 5300 strategic nuclear missiles, this number had risen to 12 500 in 1977.

"The promises of technical assistance for the development of the use of nuclear energy for peaceful purposes have likewise failed to give the results that might have been expected, as evidenced by the proceedings of the Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons held in 1975.

"Our programme of co-operation in the international field is pursued through bilateral agreements, principally with our fellow Latin American countries, and includes specific plans of action in all fields of application of nuclear energy.

^{*/} Reproduced verbatim at the request of the speaker, in accordance with Rule 89(b) of the Rules of Procedure of the General Conference.

"It has been very successful, as amply demonstrated by the commissioning of the training reactor in Lima, in the construction of which the staff of the Peruvian Nuclear Energy Institute actively participated. This is the first stage of a more ambitious co-operation project involving the construction of a centre for nuclear research and radioisotope production.

"This policy of regional co-operation is aimed in particular at the training of human resources by means of fellowships, the provision of expert services and the holding of courses, and the approach is such as to enable the Latin American personnel involved to participate extensively in the carrying-out of studies and the execution of projects.

"The courses being organized include one on uranium prospecting and an introductory course on nuclear power, which are to be held this year at the National Atomic Energy Commission under the auspices of the Inter-American Nuclear Energy Commission. Such international co-operation is likely to increase as a result of the policies approved at the last meeting of the Ministers of External Relations of the non-aligned countries, at which Argentina had the honour to be included in the group of nations appointed to co-ordinate action in this field.

"The results of the United Nations conference on co-operation between developing countries, which ended recently in Buenos Aires, open up new possibilities for such horizontal co-operation.

"In contradistinction to the obscurantist and restrictive policies followed by some industrialized countries under the pretext of serving the cause of non-proliferation, we believe that international co-operation is the most effective means of ensuring the utilization of nuclear energy for peaceful purposes. In this connection we agree entirely with what the Director General said in his statement at the special session of the United Nations General Assembly on disarmament - namely:

'.... in the long term, policies aimed at restraining and denying the transfer of nuclear or any other technology cannot be successful and could in the end prove counter-productive'. (A/S-10/PV 13)

"The size of the network of safeguards agreements associated with co-operation agreements (listed in the annual report) is the best possible evidence of the truth of this statement.

"The objectives of our nuclear policy are the same as those pursued by the International Atomic Energy Agency and we therefore feel fully competent to point out, when appropriate, any changes in direction which may be necessary to ensure the Agency's success.

"We all know that technical assistance and the safeguards system are the pillars on which the International Atomic Energy Agency is founded.

"My Government seeks through its participation in the various organs of the IAEA to promote the harmonious strengthening of both these activities.

"What has occurred in the past few years obliges us, however, to issue warnings which are intended to be of a constructive nature.

"I shall not dwell on restrictive aims based on discriminatory criteria, such as the proposal to limit provision of technical assistance to States party to the Treaty on the Non-Proliferation of Nuclear Weapons (NPT), which has often been put forward in the Board of Governors, since these aims are totally illegal owing to their incompatibility with the Statute.

"I shall, however, mention the limitations on the provision of technical assistance by the IAEA which stem from the fact that countries which supply technology, i.e. countries which have the infrastructure necessary for enabling the IAEA to furnish assistance, are imposing significant limits on its provision where the development of nuclear industry is concerned.

"We believe that technical assistance in the initial stages of nuclear development - for example, in the construction of irradiation reactors, the production of radioisotopes and the development of their applications - is of real importance, and that it should be maintained and even increased as far as possible. This assistance should, however, be extended to the more advanced stages of nuclear development, not only as a natural continuation of what has already been done, but also as an essential factor in the achievement of the IAEA's objectives, which are, as we know, to accelerate and enlarge the contribution of atomic energy to peace, health and prosperity throughout the world.

"By denying technical assistance or restricting it to intermediate levels of development, obstacles are placed in the way of growth, and commercial suppliers of technology are the ones to benefit, or, which comes to the same thing, the prosperity of a limited part of the world is favoured.

"Owing to this restriction, the IAEA cannot supply Argentina with the technical assistance it needs at its level of nuclear development, and for this reason Argentina is seriously considering the possibility of ceasing to submit technical assistance requests.

"In addition, the technical assistance programme is severely limited at present because of the scant financial resources allotted to it. If this situation continues, we shall inevitably arrive at a point where only lip-service is being paid to the idea of technical assistance, and one of the pillars on which the Agency is built will thus be destroyed.

"The situation is further aggravated by the fact that some contributions are made in non-convertible currencies. This causes a lack of financial liquidity which places severe constraints on technical assistance. It is therefore essential that the rules relating to this matter contained in document INF/CIRC/13, which were approved by the General Conference in 1959, should be effectively applied.

"My country, together with many developing countries, has suffered from the effects of these limitations, which could cast doubt on the entire present system and lead to a further reduction in the sphere of competence of the Agency, affected as it already is by the establishment of the 'Club of London' and the implementation of the International Nuclear Fuel Cycle Evaluation.

"In the field of safeguards, adjustments must also be made urgently in order to avoid a deadlock. The General Conference will have to consider, and will almost certainly approve, an exceptionally inflated budget. One of the main causes of the increase in our expenditure is the hypertrophy that has occurred in the safeguards system. The reason for this is that safeguards are being applied not only to nuclear materials, as was originally intended, but also to innumerable other items which could not possibly be converted into weapons.

"We believe that safeguards policy should concentrate on essentials and should avoid the waste of effort on incidental and unimportant matters which, apart from being costly and inefficient, militates against the overall credibility of the system.

"Another reason for the increase in the cost of safeguards is the decision to apply them in three nuclear-weapon States, which will certainly not contribute anything to efforts to prevent nuclear proliferation. It is difficult to determine the rationale of this decision unless it be to satisfy industrial interests which have nothing to do with the basic concern underlying the safeguards system.

"I cannot help commenting that, besides the limitations which it imposes on the granting of technical assistance, the increase in safeguards activities seems to be directed towards consolidating the industrial predominance of the few, to the detriment of the majority of the members of the international community".

75. Finally, he stressed the benefits of a certain number of other Agency activities: the programmes on nuclear power and reactors, nuclear safety and environmental protection, food and agriculture, and the life sciences and physics. Argentina particularly appreciated the preparation of safety codes and guides for nuclear power plant operation. It also attributed great importance to the work of the International Centre for Theoretical Physics in Trieste, which was stimulating progress in physics throughout the world.

76. Argentina reiterated its undertaking to assist the Agency by providing experts and fellowships. It hoped to increase its participation, to the greatest possible extent, in all studies and working groups which were of great value to the international community.

The meeting rose at 5.5 p.m.

