



International Atomic Energy Agency

General Conference

GC(VII)/OR.74
30 December 1963
GENERAL Distr.
ENGLISH

Seventh regular session

OFFICIAL RECORD OF THE SEVENTY-FOURTH PLENARY MEETING

Held at the Neue Hofburg, Vienna,
on Wednesday, 25 September 1963, at 10.45 a.m.

President: Mr. PERERA (Ceylon)

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* GC(VII)/247.

The composition of delegations attending the session is given in document
GC(VII)/INF/66/Rev.2.

ADOPTION OF THE AGENDA AND ALLOCATION OF ITEMS FOR INITIAL DISCUSSION
(GC(VII)/226, 226/Add.1, 226/Add.1/Mod.1, 246)

1. The PRESIDENT proposed that the Conference accept the recommendations made by the General Committee in regard to the agenda and the allocation of items for initial discussion (GC(VII)/246).
2. The recommendations of the General Committee were accepted, and the agenda was thereby approved.

CLOSING DATE OF THE SESSION

3. The PRESIDENT announced that the General Committee recommended that 2 October 1963 be tentatively set as the closing date for the session.
4. The recommendation of the General Committee was accepted.

GENERAL DEBATE AND REPORT OF THE BOARD OF GOVERNORS FOR 1962-63
(GC(VII)/228, 243)

5. Mr. SEABORG (United States of America) praised the constructive international work of the Agency and said that progress recently made - and particularly the signing of the limited test ban treaty, even though that was external to the Agency itself - would do much to improve the climate in which its work was carried out.
6. His visits to many Member States and the contacts he had made through the Agency had strongly reaffirmed his faith in the valuable contribution which science could make to international understanding. For example, he had visited a number of atomic energy installations in the Soviet Union and, during his visit, a memorandum on co-operation in the utilization of atomic energy for peaceful purposes between the Soviet Union and the United States had been signed, which provided inter alia that copies of all scientific reports exchanged under the terms of the memorandum would be forwarded to the Agency. He had also taken part in opening an "Atoms for Peace" exhibition in Belgrade and visited the Boris Kidrić Institute; the contacts he had made had further confirmed him in his belief that the work done by scientists could promote understanding. His optimism was based largely on the fact that the Agency's efforts had been consolidated and intensified, and that it was now in a better position to meet the needs of Member States and contribute to the general welfare of the international community.

7. The Agency's long-term programme^{1/} was well conceived, and he welcomed in particular the increased emphasis placed on the development of nuclear power which, together with the concomitant development of safeguards, was the most important area for expansion of the Agency's activities. In a report submitted to President Kennedy by the United States Atomic Energy Commission (USAEC), it was predicted that economic nuclear power was so close at hand that with a modest additional incentive from the Government United States utilities would use it to an appreciable extent in the near future. With some additional support for the power demonstration programme, and programme adjustments to give added emphasis to advanced converter and breeder reactors, the continuation of USAEC's present work would enable nuclear power to compete with conventional power throughout most of the country during the 1970's and would make breeder reactors economic by the 1980's. Thus it was estimated that by the end of the century nuclear power would meet all requirements for increased electric capacity and provide half of the energy generated. He recalled, in that regard, that the United States was a low-cost power area.

8. It was further noted in the report that six sizeable reactors of the more highly developed types were operating on utility grids; seven small and medium-sized reactors would be completed by the end of 1967 and a few others were under construction or about to be constructed. The report suggested that seven or eight prototype power reactors - approximately half of which would be advanced converter reactors and the rest breeder reactors - might be constructed and commissioned during the next twelve years, while the public utilities industry might build ten to twelve full-scale power plants. Programmes for developing more advanced reactor types, especially breeder reactors, were also suggested. The programme outlined would facilitate the technological development, in co-operation with other countries, of a number of reactor types designed to meet power requirements throughout the world. Eleven prototype power reactors were operating in the United States, with an aggregate net electric capacity of almost 1000 MW, and the construction of eleven more with a net electric capacity of about 2800 MW had been either started or approved. Plans for two more reactors with a capacity of about 1000 MW had been announced and tenders were being sought.

^{1/} GC(VII)/227.

9. In an interview published in International Science and Technology in July 1963, Professor Emelyanov had said he agreed in general with the USAEC report and pointed out, with respect to nuclear power, that people had at first been optimistic, then pessimistic, and were now realistic; he had further stated that he expected the Soviet Union would develop breeder reactors for large stations and other reactor types for smaller stations.

10. Many other countries, including developing countries like India and Pakistan, were planning to increase their efforts to develop and construct power reactors. All the activities planned showed how important it was for the Agency to play an active part in developing nuclear energy throughout the world. It would probably be requested to send an increasing number of consultants to advise on the practicability of nuclear power and its cost as compared with conventional power, and on the location and design of power plants.

11. The Agency also did useful work in the establishment of standards of measurement, the development of health and safety criteria to be applied in the operation of nuclear installations and the shipping of nuclear material, and in the dissemination of information on reactor technology. It should continue to disseminate information on the recycling of plutonium, and study developments in the use of thorium and the applications of process heat from reactors, particularly for water desalination.

12. His Government's offer to make enriched uranium available on a long-term basis to meet fuelling requirements was maintained. During the year, President Kennedy had agreed to increase the allocation for distribution to other countries from 65 000 to 150 000 kilograms of U²³⁵ contained in uranium; it could be procured through the Agency by Member States.

13. The Agency's safeguards played an important part in ensuring that nuclear material would not be diverted from peaceful uses. His Government had decided to negotiate for the transfer of its bilateral safeguards responsibilities to the Agency, and Japan had been the first country to conclude an agreement under which, initially, five research reactors and one power demonstration reactor purchased from the United States, together with other facilities and related nuclear material, would be placed under the Agency's safeguards^{2/}. Discussions

^{2/} The text of the agreement is reproduced in document INFCIRC/47.

were being held with several other Member States with a view to making similar arrangements. In a recent agreement in connection with the proposed Tarapur atomic power station, India and the United States had agreed in principle to request the Agency to apply safeguards to the station at a suitable time, after the Agency had adopted an expanded system which was consistent with the safeguards provisions in the agreement. In the meantime the usual bilateral safeguards would apply. He was certain that those arrangements were the first of many to be made in recognition of the importance of the Agency's safeguards system, and urged Member States to support the system's expansion. The Agency should consider, in due course, further extending its safeguards procedures to cover fuel fabrication facilities and chemical processing plants. He was pleased that inspection of the four United States reactors placed under Agency safeguards^{3/} had proceeded satisfactorily and understood that it had provided Agency safeguards personnel with valuable experience. He hoped that most countries would eventually agree to the application of Agency safeguards to their nuclear power plants and would obtain their special nuclear material through the Agency.

14. The Agency could also do useful work in connection with research reactors. About 45% of its Member States had such reactors and he was glad to note that the long-term programme suggested many ways in which the Agency could assist them in developing research reactor programmes, not only directly but also by fostering co-operative relationships between new centres and more advanced institutions. The work of the regional study groups on reactor utilization was useful and he was pleased to know that such meetings were to be held regularly; his country would continue to send experts to attend them.

15. The United States was renewing, for 1964, its offer to donate up to \$50 000 worth of special nuclear material for use in Agency projects relating to research and medical therapy.

16. Further efforts should be made to work out uniform safety codes and practices for application to research reactors so as to facilitate international collaboration in their use. High priority should be given to the part of the Agency's programme concerning health and safety, and the Agency should take advantage of the work done by other organizations, such as the International

^{3/} See document INFCIRC/36.

Organization for Standardization, in developing criteria and standards for safety in nuclear installations. It should also continue to assist and encourage Member States to prepare laws, codes or regulations for the protection of scientists and other workers, and the general public. It might offer to arrange visits by inspection teams to evaluate the application of health and safety regulations and suggest corrective measures. Member States could be invited to provide lists of qualified and available consultants who would advise, for a limited period of time, on health and safety; the Agency could then speedily arrange visits by inspection teams or consultants.

17. It could also help to draw up and apply safety standards for shipments of radioactive materials between different countries. The Agency's Regulations for the Safe Transport of Radioactive Materials^{4/} were a helpful step in that direction and were being incorporated in the United States regulations. He was pleased that the Agency was establishing a group of consultants to advise Member States on the safe shipment of irradiated fuel, and hoped it would continue to work out practical and effective standards to ensure the safe packaging and shipment of radioactive materials.

18. He was encouraged to see that under the long-term programme increased efforts were to be devoted to projects designed to solve urgent, practical problems of radioactive waste management. He hoped the Agency would publish an international registry of sea disposals and continue to study their effect and the possibility of drafting internationally acceptable codes and practices. It was even more important that international or regional waste burial grounds should be defined, and that task would be particularly appropriate to the Agency. In regard to waste management, generally, the Agency should expand its technical assistance and training activities and reduce the number of conferences, symposia and panels on the subject. He was pleased to note that it would convene a group of experts to study and prepare a manual on techniques or systems at present used to prevent atmospheric pollution by nuclear facilities.

19. The Agency should continue to expand its assistance to developing countries in the application of isotopes in medicine, agriculture, hydrology and industry and should co-ordinate those efforts with the work done by other international organizations. Its resources were limited and he hoped that other organizations could provide funds to finance such projects.

4/ STI/PUB/40.

20. He welcomed the continued emphasis on training in the long-term programme and the steps taken to ensure that more fellowships were awarded to developing countries. The United States would continue to provide training opportunities for Agency fellows.

21. The Director General should be supported in his efforts to reorganize the Secretariat so as to ensure that the long-term programme could be effectively implemented. In the administration of technical assistance activities, projects should be properly integrated and the training programme should come under the same direction as the other main technical assistance activities, namely the provision of experts and equipment.

22. Decisions regarding the financing of the Agency's activities would have far-reaching effects on its work. Since appeals for voluntary contributions had not evoked the required response, a budget financed from assessed contributions, as recommended in the United States resolution approved by the Board in June 1963^{5/}, offered the best means of carrying out the long-term programme and fulfilling the Agency's responsibilities in technical assistance and training. The proposed modifications in the Financial Regulations would enable the developing countries to pay a part of their assessed contributions in local currencies. The Agency could be proud of its contribution to international scientific co-operation and it should continue to play a notable part in fostering mutual understanding. He thought, therefore, that it should receive financial support from its Member States in the form of assessed contributions.

23. During the past few years he had spoken on several occasions, at home and abroad, of the great benefits that could accrue to mankind from sincere, continuing efforts to foster an open international scientific community. The past year had seen several interesting new developments, and in that context the Agency, with the enthusiastic support of its Member States, could play a significant role as mediator and mentor. It was a role that the United States believed the Agency should seek and should play.

24. He welcomed the plans to hold the Third United Nations International Conference on the Peaceful Uses of Atomic Energy in 1964. He was sure that

^{5/} Reproduced in document GC(VII)/236.

the Conference would make a major contribution to the development of atomic energy, and particularly to the development of nuclear power. Plans for United States participation were already being made.

25. Mr. NAKIČENOVIC (Yugoslavia) welcomed the countries which had become Member States of the Agency during the past year; the fact that they were all developing countries was a reminder of the need for the Agency to intensify its efforts to promote the economic advancement of such countries.

26. The efforts made to safeguard world peace and accelerate economic and social progress had an important bearing on the Agency's work, which had often been impeded in the past by the prevailing international tension. He therefore welcomed the conclusion of the Moscow test ban treaty and was sure it would have a profound effect on the Agency's future work. The enthusiastic manner in which that treaty had been greeted constituted an appeal to all States, and to the nuclear Powers in particular, to take further steps to consolidate peace, e.g. the discontinuance of underground tests and measures leading to general disarmament. A turning point had been reached in international relations and the efforts to achieve peaceful co-existence were being crowned with success. That development was bound to promote international co-operation, particularly co-operation within the United Nations, and to enable the Agency to expand its activities.

27. The political and economic emancipation of the developing countries was clearly in the interest of all countries; it was a vital task of international co-operation, and affected those forms of co-operation with which the Agency itself was concerned. He realized the Agency had tried to provide effective assistance to developing countries but thought the procedure used should be adapted to changing conditions. It should be borne in mind that an increasing number of countries were already using nuclear energy or were about to do so. The implementation of complex technical assistance projects was now feasible and those projects should make it possible to carry out work of urgent importance within the framework of national programmes; they should incorporate the various existing forms of technical assistance, providing for the exchange of experts and professors, the supply of laboratory equipment and materials, the placing of research contracts, the organization of courses, and so on.

An example was provided by the institute for the application of nuclear energy in agriculture, veterinary science and forestry, established in Yugoslavia under an agreement signed with the Agency and the United Nations Special Fund. The choice of such projects would have to be made by the Governments concerned, but the Agency should offer constructive advice so that appropriate decisions could be taken. It could also help to mobilize the necessary human and financial resources, in particular by summoning assistance from other United Nations bodies.

28. In order to provide more comprehensive assistance to the developing countries the Agency should expand its activities. It had already dealt adequately with the application of isotopes in agriculture and medicine but had lagged behind in other important activities, notably in the use of nuclear power and technology; more attention should be devoted to those subjects as many countries had made considerable progress and had reached a stage where they urgently needed the Agency's assistance. The long-term programme should therefore provide for a new approach to that problem. He suggested that countries should pool their resources and work together under the Agency's auspices in the application of nuclear technology, which required large-scale international action. The Director General might explore the possibilities of joint ventures requiring large accelerators, a high-flux reactor, international demonstration power stations, reactors for the desalting of water, etc. His country would make the maximum possible contribution to that work.

29. There should be closer co-operation in the exchange of scientific and technical experience. Symposia and similar scientific meetings accomplished useful work and his delegation would support the Agency's programme for future meetings. He urged Member States to provide participants at such meetings, particularly the Third United Nations Conference on the Peaceful Uses of Atomic Energy, with more information than hitherto on the most recent developments in nuclear technology.

30. The improvement in international relations would doubtless facilitate the adoption of international rules governing the use of nuclear energy. He welcomed the progress made with regard to safeguards and hoped that work on juridical questions concerning the use of nuclear energy would be more successful in future.

31. His delegation's attitude to the financing of the budget was based on its desire to ensure that the Agency's activities should be expanded. The Agency should concentrate more on scientific and technical work and, with that end in view, the Secretariat should be appropriately reorganized. There must be an agreed solution of the problem of financing the Agency's activities, since a solution imposed by some Member States on the others would impede its work.

32. Although, in the past, the Agency had had to operate in unfavourable conditions, it had succeeded in doing much useful work and the efforts of the Director General and Secretariat were largely responsible for that success.

33. Mr. SOLE (South Africa) remarked that, with the prospect of the partial nuclear test ban treaty entering into force in the immediate future, the General Conference was meeting under much happier auspices than in 1962. While over-optimism should be avoided, it was legitimate to hope that the ending of testing, other than underground testing, would divert certain resources of manpower and materials to more peaceful channels and that, in the long run, the resources and activities of the Agency would benefit accordingly.

34. Safeguards, the subject of one item on the agenda, had at least an indirect connection with the Moscow achievement. South Africa had always felt that the Agency approached safeguards from the wrong end of the plutonium cycle. It attempted to control the distribution of source material almost from the mine itself, whereas, in practice, control could most effectively start to operate at the testing and chemical reprocessing stages, and should be restricted to special fissionable material. The South African views had been borne out by events, and although South Africa, always willing to co-operate in constructive international efforts in the interests of world peace, had supported the original Agency safeguards system and had applied its provisions to all sales of South African source material for peaceful purposes, there would now - especially in view of the Moscow treaty - seem to be every reason for liberalizing the Agency controls applicable to source materials. The existing system was due for review in 1964 and South Africa hoped then to submit detailed proposals for liberalization, particularly where the source material was to be acquired for stockpiling rather than for immediate use. Sooner or later, uranium would cease to be in over-supply as

it was at present, and such liberalization now might help to prevent the occurrence of a shortage in the future.

35. South Africa also had reservations about the Board's proposal to extend the safeguards system to reactor facilities of over 100 MW^{6/} - not because there was anything wrong with the objective in view but simply because the efficacy of the existing system had not been demonstrated by actual working experience. Despite the encouraging example of Japan, the history of recent bilateral negotiations gave no reason to believe that the system could command the widespread practical support essential to its success. South Africa had consistently held that it was impossible to set up a watertight system of guarantees against diversion to military purposes and was concerned to secure instead the establishment of procedures which would act as a reasonably effective deterrent. It had accordingly suggested a somewhat different approach, not based on an extension of the existing system; unfortunately, however, the proposals had been regarded as outside the terms of reference of the expert working group and, consequently, had not been given detailed examination.

36. Considerable progress had been made during the past year in putting into effect principles he had enunciated at the previous session as appropriate guidelines for the Agency for the five years to come. The Board, leaving political differences aside, had concentrated on technical problems. The Director General had elaborated proposals for a reorganization of the Secretariat, based partly on consultations with the ex-Chairmen of the Board. He had been happy to assist in that work. The South African proposal for biennial programming would be implemented, if the Conference approved, from 1965 onwards and would, he was confident, prove an important step towards simplifying General Conference procedures. The Board had reached full agreement on long-term planning, first proposed by the Polish delegation. It was a source of considerable satisfaction to him that South Africa had helped to remove the discussion of that subject from the contentious ideological atmosphere that had at first surrounded it. The fact that the final outcome had been

^{6/} GC(VII)/235.

unanimous agreement served to show that, provided political suspicions were put aside, the Agency offered magnificent opportunities for international co-operation in technical planning.

37. In contrast, it was a matter for regret that the Board had been unable to reach full agreement on proposals for improving the Agency's financial situation. The draft amendment to the Statute now before the General Conference^{7/} was opposed by a group of States whose co-operation was vital to the Agency's successful functioning. For that reason mainly, South Africa, which had taken the lead in initiating an examination of the Agency's financial problems, was unable to associate itself with the amendment; if additional time had been given for further consultation and the examination of alternative formulas, a solution acceptable to all might well have been found.

38. It was gratifying that the Director General would probably be chosen as the scientific head of the next Geneva Conference on the Peaceful Uses of Atomic Energy. South Africa did not agree that, because of the Director General's responsibilities to the Agency, such an arrangement was undesirable. On the contrary, the role he could play at the Geneva Conference would do much to underline the Agency's rightful position as the premier international organization in nuclear matters and publicize its potential for the years ahead - particularly from 1970 onward when nuclear power would probably become competitive with conventional. The Agency should concentrate on the essentials and, in particular, should avoid any slackening of its work on nuclear power, where considerable scope was offered for expansion and for the recruitment of additional staff in preparation for the role it would be expected to play when a break-through was achieved.

39. With regard to nuclear power and its relation to technical assistance, he recognized that technical assistance was naturally determined by the wishes of the recipient country. However, South Africa's own experience as an industrially developed nation had made clear the crucial importance of power-generating capacity as a key to progress and prosperity. He accordingly believed that developing countries with a great industrial potential would be well advised, in their requests to the Agency for technical assistance, to

^{7/} Reproduced in document GC(VII)/236.

concentrate on what was needed for establishing the infrastructure of trained manpower necessary to the development of nuclear power generation, as soon as that should become economically feasible.

40. He trusted that he would be pardoned for concluding his remarks on a more personal note, for it was likely that his future duties in South Africa would prevent him from attending any further sessions of the General Conference. He had been closely associated with the Agency since the inception of the first talks on the drafting of its Statute and had served continuously on the Preparatory Commission and the Board. He might therefore be presumed to be in a position to judge as to the Agency's state of health. He had seen the Agency overcome two major crises of confidence and believed that it was in better shape now than ever before. Its further growth would command increasing respect and admiration and he would always be grateful for having had the opportunity of contributing to its well-being in the formative years. A long way still remained to go; large-scale nuclear power was not yet around the corner. But by travelling hopefully the Agency would undoubtedly arrive.

41. Mr. KAKAR (Afghanistan) said that the Moscow test ban treaty, to which his Government was a signatory, marked an important step towards peaceful co-existence. He looked forward to complete nuclear disarmament, and the utilization of the vast resources of atomic energy for peaceful purposes only.

42. Afghanistan greatly appreciated the assistance it had received from the Agency, without which it could not have made such good progress in the peaceful applications of nuclear energy, but much more help would be needed in the future.

43. A nuclear physics laboratory had been set up as part of the Science Faculty of Kabul University with equipment supplied by the Agency. Research laboratories were needed to study radioisotope applications in medicine, agriculture and industry. A project whose purpose was to extend the existing nuclear physics laboratory for work on medical applications had been submitted to the Agency for consideration under the 1964 regular programme. The Agency had already provided the services of an adviser on nuclear physics. He hoped the Board would approve the recommended extension of the adviser's contract for another year and agree to supply some equipment required for the proposed extension.

44. Under a bilateral agreement recently concluded with the Soviet Union, Afghanistan would receive a sub-critical assembly which was expected to be ready by the middle of 1965. That would create a need for further experts in different radioisotope applications in 1965-66, and he hoped that requests for such services would be given favourable consideration. The Atomic Energy Commission was being reorganized in view of those developments and the Agency would be duly informed of the changes introduced.

45. Afghanistan would continue to take part in Agency conferences and symposia and hoped to act as host to one in the near future.

46. Mr. ERRERA (Belgium) said he hoped the seventh regular session would be a turning point in the Agency's history, as it was taking place shortly after the conclusion in Moscow of the test ban agreement. That agreement was merely a first step, which must be followed by many others if the use of atomic energy for anything other than peaceful purposes was to be banned. Nevertheless, the Agency's future seemed to hold the promising - and, it was to be hoped, not too distant - prospect of scientists, materials and capital being made available to deal with the many problems it would have to face in carrying out its programme.

47. Guidelines must accordingly be drawn up now for the Agency's future work, and a programme established which could be undertaken with existing resources but easily expanded should additional men and capital be freed in the world of the peaceful atom.

48. The programme should be conceived in the light of the Agency's basic responsibilities and adapted to the general scheme of activities undertaken by international organizations. Overlapping, duplication and over-diversification should be avoided. The resolution recently adopted by the United Nations Economic and Social Council^{8/} was accordingly welcome, calling attention as it did to "the primary responsibility of the International Atomic Energy Agency for work in the field of atomic energy" and to the need for "ensuring that no proposal in which more than one agency may have an interest is approved by the governing body of any particular agency without a clear

8/ ECOSOC Resolution 986 (XXXVI), reproduced in document INFCIRC/48.

statement of the steps which have been taken to collaborate at the formative stage with the other interested agencies".

49. The resolution voiced the Agency's own concern about the so-called atomic activities of various international organizations. The Agency must ensure that the atom was not used as a pretext for the creation, without any real need, of new and increasingly ambitious machinery. The Agency's scientific and technical services would certainly always be ready to help other agencies in carrying out any of their programmes that had a bearing on nuclear energy; but each agency should deal only with the matters that specifically concerned it, in order to avoid conflicts of responsibility and duplication that were always costly.

50. So far as its resources permitted, Belgium had always endeavoured to contribute to the progress of science and technology. Now that the Agency was establishing a long-term programme, the moment seemed appropriate for a summary of Belgian nuclear achievements, for the Agency would have to take account of the experience of each of its Member States in each of its proposed areas of development in order to benefit to the full from what they had already achieved.

51. Belgium's nuclear activities were many and varied: fundamental and applied research, the production and utilization of radioisotopes, the production of fuel elements and other nuclear materials, the development and manufacture of instruments, the construction of reactors and participation in many international projects.

52. Without going into details, he wished to mention some of the major technological achievements. The BR-2, a materials-testing reactor (highly-enriched uranium fuel (90%), light-water moderator and coolant, beryllium reflector), was the most powerful of its kind in Western Europe and one of the most modern in the world. At full power, its thermal neutron flux reached 6.2×10^{14} n/cm²/sec and its fast neutron flux 2.4×10^{15} n/cm²/sec. It had gone critical in July 1961 and since 1 January 1963 had been operating at 17 MW. Several experiments, including the testing of a loop for the Dragon project, samples of plutonium fuel elements, graphite, radioisotope targets, and so on, had been conducted in the reactor. A new series of tests was to

bring the reactor to its nominal power of 50 MW. It would be brought into normal operation at full power before the end of the year and would be at the disposal of many users, Belgian and foreign.

53. The BR-2 was operated jointly by Belgium and the European Atomic Energy Community (EURATOM) but was available to all countries, and - a point worth noting - many bodies outside EURATOM were already among the users. As the Agency would continue to encourage international collaboration in the utilization of high-flux research reactors and act as intermediary between States for that purpose, it was well to know that Belgium's BR-2 reactor still offered many facilities for neutron irradiation.

54. The Vulcain project was now receiving priority under the Belgian nuclear programme. It was a 20 MW variable-moderated reactor which could be used for ship propulsion or in power stations. Its economic future was very bright; it might become competitive even with low-power conventional plants, as the kWh would cost between 6 and 7 mills if the reactor went into large-scale production.

55. The joint development of the reactor by Belgium and the United Kingdom involved neutron studies, work on instrumentation and fuel elements, and the study of a prototype. A critical assembly was due to go into operation very soon at the Mol Centre in Belgium.

56. Since 1956, Belgium had been especially interested in the plutonium cycle and fast reactors. A large-scale research programme undertaken by Belgo-Nucléaire and the Centre d'études nucléaires, with support from EURATOM, had led to the establishment of a plutonium fuel element laboratory at Mol. It was now possible to manufacture mixed $\text{PuO}_2\text{-UO}_2$ oxides on a pilot scale and the first such fuel assembly would be loaded in the BR-3 reactor before the end of the year. Belgian industry had also decided to construct a first plant for the large-scale fabrication of plutonium fuel elements. With regard to fast reactors, Belgian engineers had participated at the various phases of construction of the Enrico Fermi breeder-reactor in the United States. As a result of such experience, a Belgian firm had been selected as industrial designers for the HARMONIE reactor and the MASURCA critical assembly under construction at Cadarache in France, under the co-operation agreement between

the French Atomic Energy Commission and EURATOM. Belgian industry had also carried out several studies on fast reactors, including one for use in space. Recently Belgium had undertaken a study for an original reactor (the Briseis) to test fuel-element materials.

57. His country also attached great importance to the processing of irradiated fuels. Thanks to its participation in Eurochemie, it could follow the progress made with aqueous methods. However, it seemed that non-aqueous methods might prove more economic, especially in small installations. Research was concerned mainly with the treatment of ceramic fuels by fluorination. Stress had recently been laid on problems associated with plutonium recovery, and an interest had also been taken in chlorination, followed by fluorination, of the enriched-uranium/aluminium alloys employed in materials-testing reactors.

58. Having thus surveyed Belgian nuclear activities, he wished to refer to certain general principles that should not be forgotten.

59. Assisting the developing countries was a major responsibility of the Agency, but not its only one. Training in the widest sense of the word was no doubt the fundamental objective of the long-term programme before the General Conference, but its success would require something more than simply providing technical assistance - something that could only come from contacts between peoples, irrespective of who they might be or of their degree of development. It was impossible to overstress the need for such understanding and for such human contact on the international plane.

60. Nuclear science had an increasingly important role to play in the world of the future and the Agency must see that it developed as widely and as soon as possible in all countries, especially the less developed. However, not all its applications were of immediate interest to countries with limited resources. Economic and social development must come first, and the applications of nuclear science, as of the other branches of science and economy, had to remain secondary to that overriding requirement. That was why Belgium suggested that the Agency should set up an advisory committee, in addition to the Scientific Advisory Committee, to deal with the economic and social aspects of technical problems.

61. A question which had given rise to a great deal of discussion in the past was the Agency's role in research. The Belgian view - shared by many others - was that the Agency had not the means necessary for direct research on any significant scale. It must confine itself to a limited number of subjects. On the other hand, it could and should promote scientific research within Member States, co-ordinate national activities and make the results public.

62. In its regulatory work the Agency had enjoyed some outstanding successes during the previous two years, in collaboration with the Governments of Member States and with other international organizations. Examples which suggested themselves immediately were the Convention on the Liability of Operators of Nuclear Ships, the Convention on Civil Liability for Nuclear Damage and the international Regulations for the Safe Transport of Radioactive Materials. Such work would probably expand as the applications of atomic energy expanded. It was to be hoped that the Agency would always maintain the closest contact with other international organizations interested in the same problems, and that it would proceed cautiously. A convention would work only insofar as it commanded the assent of the countries which had to apply it.

63. He hoped his remarks would not be considered too restrained. He could, of course, have paid tribute to the remarkable long-term programme submitted to the General Conference for approval, but had thought it better to recall certain principles which, without detracting from what the programme very rightly aimed at doing, might keep it prudently realistic. As he had stated earlier, it was a good omen for the Agency's future work that the appearance of its first long-term programme should coincide with the Moscow treaty that was now opening up wide horizons and would no doubt release new resources to strengthen international scientific collaboration and assist the peaceful development of countries and nations.

64. Mr. McKNIGHT (Australia) said that it had been his delegation's consistent view that the General Conference ought to be shorter so as to enable the Secretariat to proceed with the Agency's growing scientific work. In 1962 it had suggested that a major Conference, at which a general debate would take place, should only be held biennially and that in alternate years the

Conference should be a minor one to carry out the duties laid down in the Statute. The purpose had been to offer a compromise between the view of some Member States, notably the Netherlands and Pakistan, that biennial conferences would suffice and the desire of others to observe strictly the provisions of the Statute. His Government, like many others, was anxious to reduce the administrative costs of the numerous international organizations in existence. The direct costs of the Agency's General Conference exceeded \$250 000 annually and accounted for approximately 3.3% of its administrative budget. Without for the moment expressing a final opinion, he strongly supported the Director General's suggestion that the question be studied with a view to its being considered by the Board in 1964.

65. Commenting on some of the important items before the Conference, namely items 15, 19 and 18, he expressed support for the long-term programme as a framework for the preparation of the Agency's periodic programmes and budgets, whether they were to be annual, biennial or a mixture of the two, and also favoured the safeguards system being extended to large reactors. As far as the financing of the Agency's activities was concerned, his delegation could not subscribe to the proposed amendment to Article XIV of the Statute.

66. Australian scientists considered the Study Group Meeting on Utilization of Research Reactors, held in Bangkok in December 1962, and the Conference of Countries in Asia and the Pacific for the Promotion of Peaceful Uses of Atomic Energy, convened in Tokyo by the Japanese Government in March 1963, to have been highly successful and had welcomed the opportunity of meeting scientists from Asian countries. One problem which had come to the fore during the discussions had been the lack of modern scientific textbooks and journals in many countries, which were indispensable to nuclear studies and without which other forms of Agency assistance would be ineffective. He therefore welcomed the provision included in the technical assistance programme to assist nuclear science libraries in developing countries.

67. His delegation approved of the Director General's plan to create a new Technical Assistance Department, in which the Secretariat's technical assistance activities would be co-ordinated and centralized. The new arrangement should lead to an improved knowledge and understanding of receiving countries' needs.

68. As the countries of a region were usually faced with many similar problems there was increasing room for regional co-operation in technical assistance matters, and it was therefore gratifying that the Director General should have appointed a regional representative in Bangkok.
69. On the question of experts, he said that it would be of mutual advantage to scientists in the host country and to the expert if the latter were to make a follow-up visit some time after completing his mission.
70. Mentioning a point which he considered to be of particular interest to countries of Asia, the Pacific and Latin American regions, he said that in May 1963 a cargo of highly radioactive nuclear material from the Australian materials-testing reactor HIFAR had been shipped to the United Kingdom. In terms of distance, including a long overland haul in Australia, length of voyage and size of cargo, the shipment had made history. Throughout, the Agency's Regulations for the Safe Transport of Radioactive Materials had been complied with. The universal acceptance and application of those regulations were essential to the safe and speedy development of atomic industry everywhere, and he believed that if revised they stood a far greater chance of being accepted. The Agency was to be commended on the leading and appropriate part it had played in bringing the regulations into being. Within five years there would be a great need for transporting irradiated fuel elements from the growing number of reactors, and if the experience gained from the shipment he had described could be of any help to other Member States, information would be most willingly supplied.
71. As the delegate of a country at the end of a long sea route, he noted with satisfaction that agreement had been reached on a final text of the Convention on Civil Liability for Nuclear Damage, which would greatly facilitate the international transport of nuclear and particularly of fissionable materials provided it were ratified by many countries in all regions of the world. Authorities in his country were carefully studying that text and he urged other Governments to give the matter priority.
72. In conclusion he thanked the Director General and the Secretariat for the solid and worth-while work accomplished for the benefit of Member States in the region to which Australia belonged.

73. Mr. de SIQUEIRA FREIRE (Portugal) recalled that the General Conference was required to discuss various important questions, including the long-term programme. The delegation of Portugal approved that programme and wanted to congratulate the Board, the Director General and the Agency's Secretariat for preparing it. The programme, which was more in the nature of a guide than a rigid plan, contained no completely new features and proposed no revolutionary methods; nor did it represent a change of direction with regard to past activities. Instead, it aimed at giving, for the years 1965-1970, general directives involving procedures similar to those which had been applied so far. In the formulation of the programme, account had been taken of the fact that the five years in question would be a transition period, characterized particularly by the increased construction of nuclear power stations for the production of electricity on a competitive basis.
74. Nevertheless, Portugal was convinced that the Agency's main effort should bear on the training of scientific and technical personnel. By sustaining those efforts, the Agency would really help in shaping the most valuable capital, human capital. The training of scientific and technical personnel should therefore continue to have priority.
75. In that connection, he noted with satisfaction that the Board had finally approved the establishment of the International Centre for Theoretical Physics and he hoped that it would fully live up to what many countries were expecting of it, especially in regard to scientific training. He wanted to emphasize the decisive part played by the delegation of Pakistan, and in particular by Mr. Usmani, Chairman of the Board.
76. With regard to the financial implications of the long-term programme, he pointed out that since that programme related to a transition period, and in view of the nature of the Agency's basic activities, there would not necessarily be a continued, substantial increase in the annual budget. He wanted to make certain reservations regarding the estimates which had been submitted to the Board.
77. On the proposed amendment to Article XIV of the Statute, an amendment which aimed at strengthening the financing of the Agency's activities, he stated that the need to place financing on a more stable footing was one of the reasons why

Portugal had been interested in the original proposals submitted by the United Kingdom. The desire to secure a more reasonable distribution of financial burdens connected with the operational programme was an added justification for Portugal's position.

78. In the light of the debates which had taken place at the sixth regular session and subsequently, Portugal considered that there was no reason to change its attitude and would give its support to the draft amendment to Article XIV of the Statute, approval of which had been recommended by the Board.

79. He wanted to express his satisfaction at the excellent co-operation which had been kept up during the year between the Agency's Secretariat and the Portuguese Atomic Energy Authority and other institutions in Portugal. In particular, he wished to mention the assistance granted for training and research activities in Portuguese laboratories, and more particularly the award of a new research contract for a study of schistosomiasis using radio-isotopes.

80. He sincerely hoped that those studies would give positive results. In any event, they represented a type of activity which was directly connected with the Agency's technical functions and which Portugal welcomed with pleasure and deep interest.

81. Mr. MICHELI (Italy) stated that, since it was world-wide in character and brought together all the persons responsible for nuclear energy activities, the General Conference provided the best opportunity for an annual summing-up of the progress made with regard to atomic energy and its various applications. However, that summing-up was not the only object of the Conference, because past experience and the discussion it evoked gave birth to new ideas which could often have a decisive influence on the direction of future nuclear energy activities. During the preceding year the Agency's activities had made considerable progress, and they were constantly increasing in number.

82. The decision of the Board to establish an International Centre for Theoretical Physics at Trieste was an event of great importance and proved that all political and ideological barriers could be overcome in the cause of

science. Italy had always realized the importance such a centre could have for the development of the Agency's future activities and had welcomed with pride and enthusiasm the decision to establish the Centre at Trieste. The Centre would, in particular, help in providing specialized training to persons from developing countries. On returning home those experts would constitute highly specialized groups, indispensable to the development of nuclear activities in their own countries. The establishment of the Centre at Trieste was a very important step whose results and advantages would not be long in making themselves felt. Italy would collaborate to the full in order to ensure that the Centre could start to operate as quickly as possible and develop in the most favourable circumstances.

83. The amendment to the Statute, which had just come into force and which ensured wider representation of the area of Africa and the Middle East on the Board, must be regarded as equitable in view of the great changes that had taken place in that region. In that connection, his country had noted with satisfaction the opening of a Middle Eastern Regional Radioisotope Centre at Cairo.

84. Italy would always approve of action taken to help developing countries, because that was one of the Agency's most important responsibilities, but care should be taken to keep a step ahead of the needs of countries which were just beginning to tackle nuclear science. The long-term programme thus appeared to be very useful. The Agency's experts and officials should be given directives which would allow them to work in a quiet and peaceful atmosphere and to achieve good results.

85. The delegation of Italy supported the proposal to abolish the distinction between the Regular Budget and the Operational Budget. The present system was certainly not satisfactory and efforts should be made to secure for the Agency, as far as possible, the resources which it was needing more and more. He pointed out, incidentally, that the budget was very modest compared with those of some other organizations, which was not logical in view of the Agency's important and sometimes very costly activities.

86. Italy also supported the extension of safeguards to reactors whose power exceeded 100 MW. The safeguards system had been carefully studied and approved and there was no reason for not adapting it to new requirements; in that way the work already carried out could be improved and rendered more useful.

87. In Italy, two nuclear power stations had been put into operation during the year. The SIMEA power station, at Latina, had become critical in December 1962. It was equipped with a graphite-moderated natural uranium reactor cooled by carbon dioxide; six heat-exchangers produced the steam to feed three 70 MW turbo-alternators, which would supply the grid with 200 MW(e) at 150 and 220 kV. Approximately half of the installations had been supplied by Italian industry, which had thereby acquired valuable experience. That power station had started to supply the grid with power on 30 May 1963.

88. The SENN nuclear power station situated at the mouth of the Garigliano, near Naples, was equipped with a 150 MW(e) boiling-water reactor using enriched uranium dioxide; it had become critical on 5 June 1963.

89. In conclusion, he stated that Italy would give full support to the Agency's activities, and confirmed the award of 20 fellowships for specialists who wanted to complete their studies in Italy. It would likewise assist in finding staff and the necessary financial means for carrying out the technical assistance programme. The Italian Government was studying the possibility of offering a substantial voluntary contribution.

90. He had every confidence in the Agency's future and hoped that the present session would mark a step towards achieving the envisaged goals, so that nuclear energy, freed from the incubus of its tragic beginnings, could assert itself as a factor in human progress and welfare.

The meeting rose at 1.5 p.m.