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President: Mr. NEUMANN (Czechoslovak Socialist Republic)
later: Mr. NABAVI (Iran)

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* GC(XI)/368.

GENERAL DEBATE AND REPORT OF THE BOARD OF GOVERNORS FOR 1966-67 [GC(XI)/355, 355/Corr.1, 366] (continued)

1. Mr. TOHAMY (United Arab Republic) congratulated the Director General on his work and expressed gratification at the Agency's achievements and growing prestige as an organization which made a practical contribution to world peace and prosperity.

2. He thanked those colleagues who had expressed their support and deep sympathy for his country and assured them that the United Arab Republic

would always be very grateful to them for their kindness.

3. The enthusiastic desire of many countries to promote a speedy conclusion of a treaty on the non-proliferation of nuclear weapons was a remarkable example of the desire to co-operate in the interests of peace. The United Arab Republic welcomed that enthusiasm and continued to be a member of the Eighteen-Nation Committee on Disarmament. To be effective the treaty would call for an adequate safeguards system. In that connection, the United Arab Republic considered that certain changes should be made in the organization and

administrative structure of the Agency's Inspectorate, the method of assigning inspectors and the application of safeguards before it could fully accept the Inspectorate as a body whose findings were binding on the international community.

4. The Board of Governors and the Committee which had conducted the review of the Agency's activities during the past year, in co-operation with the Director General [1], had spared no effort in carrying out their task. The Guiding Principles and General Operating Rules to Govern the Provision of Technical Assistance [2] should be made more flexible with a view to meeting the needs of the developing countries and, where necessary, preference should be given to requests for equipment; the General Conference could best achieve that objective by adopting the resolution set out in document GC(XI)/COM.1/105. He still hoped that the technical assistance provided would be wider in scope and was particularly in favour of training groups of scientists collectively to enable them to operate an installation in their home country. He attached major importance to the establishment of reactor centres and institutes in which reactors were used for desalting sea water.

5. The Agency's participation in the Regional Radioisotopes Centre for the Arab Countries in Cairo would terminate in 1968. In view of the Centre's achievements and the experience gained during the six years of its operation, the participating Member States intended to expand its activities to cover applied research and developments of an economic character and solve problems relating to hydrology, agriculture, entomology and industry. He hoped the Agency would continue to support the Centre, e.g. by awarding research contracts and providing technical assistance. The governing body of the Centre had approved the establishment of radioisotope units in Member States and the provision of training in applied research in addition to the conventional training courses. Membership would be extended to African States in which the scientific problems requiring a solution were similar to those dealt with in the Centre, and the latter would consolidate its co-operation with the Agency and other international organizations.

6. The Atomic Energy Establishment in the United Arab Republic was now concentrating on research and development relating to nuclear power and desalination, with special emphasis on heat-transfer of reactor coolants and moderators, the behaviour and structural changes in reactor materials under irradiation and high-temperature conditions and the development of reactor control equipment and instrumentation. In the case of the 150-MW(e) and 20 000 m³/day dual-purpose plant and its associated pilot agricultural scheme, economic analyses and engineering studies were being carried out,

using various water costing methods, and different economic parameters had been used in feasibility studies. The results obtained so far had shown that the prospect of using desalted sea water for agricultural purposes was promising.

7. In the current year, the first group of 41 nuclear engineers had graduated from the University, which welcomed nuclear engineering students from abroad.

8. He was, unfortunately, unable to present the results of work done with the research reactor since it had been shut down for reasons of safety. Similarly he could not state whether the Agency's regulations for the safe transport of nuclear materials could usefully serve as guiding principles for Member States since the Suez Canal was partly destroyed and had been completely blocked for some months.

9. It was important to bear in mind that Member States and all connected with the Agency were certainly more aware than any other international community of the importance of nuclear energy and the delicate issues and danger which its use entailed. For that reason Member States had always emphasized the importance of co-operating in order to ensure that the use of nuclear energy was not diverted to military purposes. The Agency had therefore established an effective safeguards system, which had been extended to nuclear facilities capable of extracting plutonium from irradiated fuel, and it was now trying to extend it to the whole fuel cycle. He had interpreted the unanimous approval of the revised safeguards system by the General Conference two years previously as indicating that Member States were fully aware of their moral responsibility to safeguard world peace.

10. Article III.A.5 of the Statute authorized the Agency to establish and administer safeguards designed to ensure that special fissionable and other materials, services, equipment, facilities and information made available by the Agency or at its request or under its supervision or control were not used in such a way as to further any military purpose. Article XI.F.4 provided for undertakings by Member States submitting projects that the assistance provided would not be used in such a way as to further any military purpose. Article XII.A.5 was designed to ensure that reprocessing plants would not lend themselves to diversion of materials for military purposes and that special fissionable materials recovered or produced as a by-product were used for peaceful purposes under continuing Agency safeguards. It also required deposit with the Agency of any excess of any special fissionable materials in order to prevent stock-piling of such materials. Safeguards were also dealt with in Article XII and XX. It was clear that all Member States providing or receiving assistance were obliged to comply with those articles of the Statute in order to ensure that the world was not exposed to nuclear hazards. In that connection he also quoted paragraphs 1, 2

[1] See document GC(XI)/362, 362/Add.1 and 2.

[2] GC(IV)/RES/65, Annex.

and 15(a) of the document on the Agency's Safeguards System (1965, as Provisionally Extended in 1966) [3] and referred to paragraph 7 of the Annex thereto in relation to the extension of safeguards to reprocessing plants.

11. Since there was a close link between the techniques employed in using nuclear energy for peaceful and military purposes, the Agency's safeguards system, which had been accepted as a model by the United Nations, was designed to ensure that assistance provided by the Agency was used for peaceful purposes only. In November 1964, the United Arab Republic had been obliged to enter into a safeguards agreement with the Agency as a condition for obtaining a quarter of a gram of uranium-235, purchased from the United Kingdom. On the other hand, another Member State of the Agency in the Middle East had acquired bilaterally, and through the Agency, a considerable amount of equipment, materials, and the services of an expert paid by the Agency, which had enabled it to build a facility capable of handling irradiated fuel.

12. He then made the following statement [4]:

(1) "This facility was constructed since 1962 under circumstances which should have obliged all the parties concerned to undertake an arrangement for safeguarding it and the nuclear material contained therein. Yet no assurances of this type were ever given, nor did the Agency, while making available its assistance, equipment, knowledge and expert experience, discharge its responsibility to comply with the statutory obligation by undertaking a safeguards agreement with the country concerned similar to the agreement with the United Arab Republic for the provision of one quarter of a gram of uranium. This is only one example of what we want to present to our Agency community. I am positively sure that the revealing of such situations can only be for the good of our international co-operation by guiding the organs of our Agency to take appropriate steps towards consolidating peace and ensuring the peaceful uses of installations provided by the Agency or through the Agency, or even between Member States of the Agency, as a statutory obligation, and in many cases by encouraging voluntary action by the Member States which are more aware of the dangers in allowing such assistance to lend itself to diversion for military purposes.

(2) "We feel that the Agency, in co-operation with its Member States and the Board of Governors, should attempt to take appropriate action in this particular case, and in similar cases where assistance is provided through the

Agency, or bilaterally, for principal nuclear facilities, which should be subject to bilateral safeguards or, more advisedly, under the Agency's safeguards.

(3) "There is a particular need for safeguards in the area of Africa and the Middle East. Africa was declared a denuclearized continent in 1964, a status which does not exist in the Middle East. On behalf of the delegations of Saudi Arabia, Syria, Tunisia, Kuwait, Lebanon and Iraq as well as my own delegation I declare that we do not want any atomic explosions in the Middle East, with all their disastrous results and consequences."

13. He reaffirmed his country's confidence in the Agency, which was now assuming additional responsibilities and needed the constant support of Member States. The United Arab Republic would eagerly play its part in bringing to a successful conclusion the important work which had yet to be done, such as the conclusion of an agreement on emergency assistance in the case of radiation accidents and the consolidation of the safeguards system and its practical application. He hoped more fruitful results would be achieved in the coming years and that Member States would co-operate more closely with one another and with the Agency's able Director General and Secretariat in the interest of world peace.

14. Lord PENNEY (United Kingdom) thanked delegates for the warm tributes paid to the late Sir John Cockcroft, who had contributed so much to the development of science and atomic energy in the United Kingdom and throughout the world.

15. He thanked the Director General and the Secretariat for their co-operation, which had contributed to the useful work carried out during the year. He also wished to thank the Austrian Government for its generous offer of a new headquarters building for the Agency.

16. His delegation shared the general satisfaction reflected in the document on the review of the Agency's activities, which had been conducted during the past year.

17. He shared the hopes expressed by several delegates that the negotiations on a treaty on the non-proliferation of nuclear weapons, in which his Government was taking an active part, would be successfully concluded, and he had no doubt that, if called upon to do so, the Agency would readily accept the task of administering safeguards under the treaty, and that its Inspectorate would be in a position to assume the wider responsibilities that would entail.

18. Two days previously it had been his pleasant duty to sign, on behalf of the United Kingdom, a Transfer Agreement under which the Agency would

[3] INFCIRC/66/Rev. 1.

[4] The statement in paragraph 12 is reproduced verbatim at the speaker's request under Rule 92(b) of the Conference's Rules of Procedure.

apply safeguards to the Tokai Mura reactor; that reactor, together with the Bradwell and Yankee reactors, would now be one of the biggest facilities under Agency safeguards.

19. He welcomed the proposal to establish the International Nuclear Information System (INIS), and thought it should be closely co-ordinated with the existing national and regional abstracting services.

20. His delegation supported the Agency's Budget for 1968 [5]. It noted, however, that the increase in the Regular Budget — 10.4% over 1967 — was substantial, and hoped the Agency would do its best to exercise economy. Member States themselves could of course bring about an appreciable reduction in expenditure by agreeing to hold shorter sessions of the General Conference in alternate years; they might then be willing to contribute more to other Agency activities, particularly technical assistance, the demand for which was rapidly increasing. The Agency had already provided a considerable amount of technical assistance; it had awarded 2500 fellowships, held 62 training courses, and provided individual developing countries with direct aid to the value of \$30 million. In addition to its contribution to the Regular Budget, the United Kingdom proposed to donate \$110 000 to the General Fund for 1968, and it would also provide experts for short-term missions free of charge. Many Agency fellows received training in universities, scientific and technical institutes and other organizations in the United Kingdom. In order to meet the increasing demand for training, it had been decided to raise to 7 the number of training places for Agency nominees at the Central Electricity Generating Board's nuclear power stations and laboratories. With regard to the differences of opinion regarding the proper scope of technical assistance, in particular the extent to which it should be confined to a transfer of knowledge through the provision of experts rather than the supply of equipment, he considered that the limited funds available could be used to benefit the maximum number of Member States by providing experts, together with those items of equipment which they required to carry out their work.

21. The codes of practice for health and safety and for the transport of radioactive materials had proved very valuable in promoting international collaboration and exchange. He wished to pay a tribute to the late George Appleton, who had contributed so much to that work; his sudden death was deeply deplored by all who had been closely associated with him in Vienna and elsewhere.

22. He would now enumerate some of the main achievements listed in the document on developments in his country's atomic programme during the past year [6], which his delegation had sub-

mitted to the Secretariat in response to the Director General's invitation. The United Kingdom gas-cooled reactors now had an installed nuclear capacity of almost 3500 MW, and a further 600-MW gas-cooled reactor would be in operation within a few months. There was complete confidence in the gas-cooled system and in its potential for further development in the years immediately ahead. The construction of the 250-MW(e) fast reactor was proceeding successfully and on time, and the steam-generating heavy-water nuclear power station had gone critical a few days previously. Satisfactory progress was being made with the Vulcain project, in which Belgium and the United Kingdom had co-operated successfully. The work with radioisotopes was also providing successful and their use for all purposes was increasing at the rate of 15 % per annum.

23. In the United Kingdom, as in most other countries, there was a constantly growing demand for more money for scientific research and development, and at least as high a proportion of the gross national product as in most of the other leading industrialized countries was allocated for that purpose. In making that allocation, judgement had to be exercised and priorities chosen. Ten years previously it had seemed that a shortage of energy would lead to an increase in cost, and consequently research and development in energy generation had been given very high priority. It now seemed that the supply of energy would be much greater than expected, and the problem was to make a balanced choice between the various possibilities available. Nuclear power would make a large contribution to electricity generation, and the efficient use of uranium by fast reactors would add greatly to the energy reserves. In determining priorities for the various branches of scientific research and development, the United Kingdom Atomic Energy Authority and the Government had decided to try to reduce by 50 % during the next five years the work done on plasma physics and fusion research, since its practical application would not become economic for a considerable time. That decision could of course be revised if developments so warranted. A total graduate staff of about 100 would continue to be engaged in plasma physics and fusion research at Culham, and he believed that with the excellent facilities available the laboratory would continue to make a valuable contribution to such research.

24. He was addressing the Conference in his present capacity for the last time, and he wished to take the opportunity to express his gratification at the steady growth in the stature of the Agency since the time of its inception. It was now universally accepted as an important and authoritative agency of the United Nations, and it was unique in that it was concerned solely with one branch of science and technology. While it was true that many Governments had decided to develop atomic energy in certain directions and their support had resulted in rapid progress, there was a danger that the

[5] GC(XI)/360.

[6] GC(XI)/INF/97, section F.

pattern of commercial development might be distorted. The need for a specialized agency and for intensive national programmes devoted to the applications of atomic energy was quite clear, since those applications could, on the one hand, be extremely dangerous and, on the other, highly beneficial to mankind if they were directed towards the production of power and the promotion of medical, agricultural and scientific research. Thus the success of the Agency depended in large measure on its ability to steer a course between political and industrial considerations, which to some extent coloured the attitudes of Member States. In view of the divergent character of atomic energy programmes in different countries, the Agency could also play a particular useful role by enabling countries to exchange knowledge and experience and discuss their future plans. The Agency should also be sufficiently flexible to meet the demands of the international community and cope with the rapid developments in the use of atomic energy.

25. He would always remember with pleasure his association with the Agency during its formative years, and expressed the hope that, under the able leadership of the Director General, it would continue to flourish and successfully discharge its important task.

26. Mr. HULUBEI (Romania) said the Conference was meeting at a time when there was, on the one hand, a tendency towards increased co-operation between States in the interest of peace and international security and, on the other hand, a tendency to act in a manner contrary to the vital interests of nations, their aspirations and their multilateral development. At a time when unprecedented scientific progress offered unlimited possibilities to improve living conditions, the persistent tension and conflict in certain parts of the world were very disquieting since, apart from resulting in loss of life and destruction of property, they directly hindered the normal development of international relations, prevented people from living their own lives without interference, impeded progress in less-developed countries and perpetuated colonialism and neocolonialism.

27. If international problems were to be solved, States must, first of all, fully respect the principles of national independence and sovereignty, equal rights and non-interference of internal affairs and undertake to eschew military action.

28. The aggression committed by the United States of America against the Viet-Nameese people constituted a grave danger to peace and prevented the improvement of international relations. The immediate and unconditional cessation of aerial bombardment and hostilities and respect for the right of the Viet-Nameese people to decide their own destiny were urgently necessary.

29. There was a further threat to peace in the

Middle East. Since the beginning of hostilities there Romania had advocated a peaceful settlement which would take into account the interests of all the countries in the area and thus create the conditions necessary to enable those countries to enjoy the benefits of democracy and achieve national, economic and social progress.

30. Since general disarmament and, above all, nuclear disarmament would contribute to the improvement of international relations and promote security and peace, Romania strongly urged that concrete steps should be taken to prohibit the use of nuclear weapons and their production, to destroy the nuclear weapons already in existence, put an end to military alliances and remove all military bases from foreign territory. The conclusion of a treaty on the non-proliferation of nuclear weapons would be very valuable if it were one of a number of steps designed to achieve nuclear disarmament. Such a treaty should guarantee the safety of all States, without discrimination, and should ensure that all States would be enabled to use atomic energy for peaceful purposes, provided its use was subject to reasonable inspection and that national sovereignty was respected. In that connection the Agency was called upon to play an important part by contributing to the efforts being made to ensure that nuclear energy was used to promote economic, technological and scientific development rather than for destructive purposes. Its safeguards system would enable it to perform that task. In order to meet the urgent need of all States for national security, the system used to inspect nuclear energy activities and facilities must be accepted by all the States concerned. The provisions and procedures laid down must be clearly formulated, equitable and in keeping with the principle of national equality and must exclude the possibility of interference in the internal affairs of States. Accordingly the Agency's safeguards system must permit all States, without discrimination, to carry out nuclear research and develop nuclear science and technology for peaceful purposes.

31. All States should try to promote the development of conditions which would facilitate mutual co-operation, which was so necessary in the interests of progress and civilization. In that connection, valuable work could be done by the various international organizations, which should act in a realistic manner, bearing in mind the fundamental interests of all nations.

32. The exclusion from membership of the Agency of the People's Republic of China, the Democratic Republic of Germany and other socialist countries was abnormal, inadmissible and contrary to the fundamental principle of universality.

33. His delegation welcomed Malaysia as a new Member of the Agency and was sure it would play a valuable part in the Agency's work.

34. The Report of the Board for 1966-67 [GC(XI)/

355, 355/Corr.1, 366], in which the achievements of the Agency were set out, revealed an appreciable growth in the spirit of collaboration which was so important for the successful functioning of an international organization. The Director General and the Secretariat deserved congratulations for their highly capable and efficient work.

35. Progress had been made in technical assistance, in the organization of scientific meetings, in the training of experts and in the exchange of scientific and technical information, thanks to co-operation in scientific and technical work and to a closer relationship between the Agency and other international organizations such as FAO. He also wished to congratulate the Board on its decision regarding the INIS, which demonstrated a resolve to stress the important aspects of the Agency's future work.

36. Nuclear power was bidding fair to take first place among the Agency's concerns. The studies carried out by the Secretariat concentrated on the essential aspects of nuclear power work, and the scientific meetings on the subject had tackled problems which, both technically and economically, were of real interest for the near future.

37. In view of the importance of nuclear power and the interest which Member States were showing in it, a substantial increase in the scope of the Agency's technical assistance seemed inevitable. From the Board's report it was apparent that the share of technical assistance devoted to nuclear power during the past year had declined appreciably in relation to the average of earlier years.

38. The long-term programme [7] had done much to stimulate the Agency's work in certain sectors of particular importance to Member States. That was a development on which the Agency could congratulate itself.

39. Romania, engaged in a vast programme of economic development, was giving close attention to the peaceful uses of atomic energy, particularly in connection with the development of power. While pursuing their activities in fundamental and applied research for the benefit of industry, agriculture, biological science, medicine, petroleum prospecting, hydrology and so on, Romania's research workers and engineers, together with representatives of the country's industry, had undertaken concerted and sustained action in the interests of the future nuclear power programme.

40. Romania wished to reaffirm the importance that it attached to the Agency's activities, and its resolve to support them.

41. Since 1965 Romania had offered 15 fellowships to the Agency. It had also pledged a sum of \$6200 for the 1968 Operational Budget, 10% in

[7] INFCIRC/50.

convertible currency and the balance in national currency — an offer similar to the one it had made in 1967.

42. He wished to take the opportunity to put a number of suggestions to the General Conference on behalf of the Romanian delegation.

43. The Agency had obtained good results in the training of experts, and the Secretariat deserved warm congratulations for that. Its efforts should, however, be intensified in view of the vital importance of technical training. The number of Type II fellowships, the usefulness of which had been amply demonstrated, should be increased, and greater attention should be given to study trips.

44. The Agency should co-operate even more closely than in the past with international organizations such as ILO, WHO, UNESCO, and so on, particularly in the training of experts and technologists for nuclear energy work.

45. It would be desirable to supplement the Agency's scientific and technical documentation by an increased number of publications on various aspects of nuclear power reactors, including general technology, economics and problems of operation. Similarly, it would be extremely useful to prepare manuals for nuclear power technologists.

46. The supply of equipment for technical assistance projects should not be made subject to the provision of experts' services. If experts were in fact requested by countries soliciting assistance, their missions should not exceed one to three months. The short missions that were required could be carried out by the Secretariat's own experts; in that way the drain on the technical assistance budget could be reduced.

47. In the research contract programme one could discern a praiseworthy tendency to tackle practical problems of interest to all Member States, and particularly to the developing countries. That was a type of collaboration which could usefully be enlarged.

48. Finally, the Agency should continue to support, with UNESCO, the International Centre for Theoretical Physics at Trieste, the great scientific value of which had already been demonstrated.

49. Mr. MASSANGU (Democratic Republic of the Congo) stated that, since scientific research had become one of the driving forces of economic life, one could no longer conceive of a modern, powerful and efficient economy which did not draw on its results. Modern research, however, posed serious problems of finance and co-ordination. Old ideas of research work, dating from a time when small numbers of workers toiled on their own with limited means and within the clearly-defined frontiers of their disciplines, had to be revised. Nowadays, many

scientists often worked together as a team, equipped with costly apparatus, on subjects which frequently involved the use of data relating to several sciences. In other words, the various sciences were complementary to one another, requiring resources on what was virtually an industrial scale, and necessitating the organization of a body of highly-skilled workers.

50. As regards training and research in the peaceful uses of atomic energy, it should be realized that the majority of African countries were not in a position to solve the problems posed by contemporary scientific research. At a time when the exceptionally rapid growth in the need for training and research necessitated an ever-increasing supply of manpower and capital, that situation was dangerous. The present structural and organizational state of the scientific set-up in Africa gave ground for fear that the resources available for science in general, and nuclear science in particular, would be exhausted before basic needs had been satisfied, unless resolute steps were taken towards regional and international co-operation at the three levels of planning, training, and implementation of research, and in financing that research.

51. That was what Africa had realized at Kinshasa. At its fourth session, held at Kinshasa from 11 to 15 September 1967, the Conference of the Heads of State of the Organization of African Unity (OAU) had in effect adopted the text of a resolution for co-operation between OAU and the Agency. The Conference had also adopted the following resolution:

"The Conference of the Heads of State . . . ,

"Having discussed the proposal made by the Democratic Republic of the Congo on the establishment of a regional centre for the utilization of radioisotopes in medicine, agriculture and biology at the Trico Nuclear Centre at Kinshasa,

"Recalling the provision of the OAU Statute on co-ordinating efforts of Member States towards scientific research,

"1. *Recommends* the Member States to further by all appropriate means the extension and efficient running not only of this Centre, but also of other African centres engaged in the same work ;

"2. *Requests* the Secretary-General to see that this project is carried out in the interests of scientific research in Africa." [8]

52. Those actions showed that Africa not only recognized the growing importance of atomic energy in all branches of science and engineering, but furthermore that it could not reasonably further the

use of such energy in Africa other than on a regional, or international, basis. That was what the Congo had told the Agency in the course of the review of the Agency's activities. In essence, it had stressed that, in order to increase the effectiveness of assistance furnished by the Agency, that assistance had to be thought of in regional terms. It was regrettable to note that the Agency had not applied itself resolutely to that principle. Since its foundation, the Agency had been presented with six proposals for regional centres; to date, however, one single regional and one international centre had been set up.

53. In that connection he recalled that the Board of Governors had laid down a number of principles which would have the unfortunate effect of discouraging any efforts to promote regional co-operation with the Agency's assistance.

54. He thought the development of nuclear energy in the Congo would benefit if the decision of the Heads of State in OAU to convert the Trico Centre in Kinshasa into a regional centre for Africa were adopted.

55. To improve the facilities available to other African countries the Congolese Government had started to convert the Triga Mark I reactor at the Trico Centre.

56. His Government was also planning to construct a new building at Lovanium University to house the departments of radiobiology, radiochemistry and radioagronomy along with the converted reactor.

57. In 1968 his country would organize a symposium in collaboration with OAU on the peaceful uses of nuclear energy in Africa and it wanted to thank the Agency in advance for any assistance it might offer in the organization of that symposium.

58. He thanked the Agency for the help it had given the Congo in 1967, and especially for the results obtained by the two Agency experts at the Trico Centre. His country hoped it could count on the continued assistance of the two experts and that it would benefit from the development of nuclear energy in Africa.

59. Mr. HOGEN (Japan) referred to the growing importance of the International Atomic Energy Agency as it entered a new decade in its history. He pointed out that since the attainment of economic power generation from atomic energy the practical use of nuclear power had been extensively developed, and that many countries, including Japan, were planning an ambitious construction programme for nuclear power stations. He warned that, in step with this development, there was a growing danger of misuse of nuclear power and said it was hoped that the Agency would play a substantial part in controlling the situation.

[8] Unofficial translation.

60. He referred to Japan's rapidly growing contribution to, and investment in, nuclear research and development and stressed that such work was much more effective if it was carried out in close collaboration with other countries. He believed that the Agency should play an active part in the exchange of technical information on the new types of reactor being developed.

61. The Agency should extend as much assistance as possible to developing countries planning their nuclear power programme, particularly by advising them on reactor siting. His country was prepared to help, for example, by placing experts at the Agency's disposal and holding panel meetings. He mentioned, in particular, that research on aseismic reactor design had reached a comparatively advanced stage and that many Japanese experts had taken part in the Agency panel meeting on that subject in June 1967.

62. He stressed the need for a co-ordinated, long-term supply of nuclear fuel, and suggested that the Agency consider the possibility of acting as a clearing-house for plutonium until such time as that element became commercially available. Since it was also expected that the demand for uranium and thorium would increase, a world-wide investigation of resources was essential. At present, the Agency was carrying out such an investigation with the European Nuclear Energy Agency, and it was hoped that the East European countries would furnish the necessary information on those resources.

63. He pointed out that the expansion in nuclear power generation also raised the question of radioactive waste disposal. His country believed that in such matters as waste disposal into the sea and processing of highly radioactive liquid wastes the Agency's assistance would be very valuable in establishing standards and securing the exchange of information.

64. It was envisaged that before long nuclear-powered ships would handle quite a large share of world maritime transport. It was feared, however, that the lack of standardized legal provisions covering the operation of a nuclear-powered ship would have an unfavourable effect on construction programmes, especially since the International Convention on the Liability of Operators of Nuclear Ships, adopted in Brussels in 1962, had still not entered into force. He hoped that the Agency would try to clear up that confusing situation.

65. The question of how the Agency's budgetary resources could best be allocated gave rise to difficulties which hindered its work for the developing countries. In that connection he thought it was opportune to remind Member States of the resolution on voluntary contributions to the General Fund adopted at the fifth regular session of the General Conference [9].

[9] GC(V)/RES/100.

66. He recalled the suggestion, made in the Review of the Agency's Activities, that the Agency organize regional meetings to study the relevant problems of each area [10], and mentioned that the Study Group on Research Reactor Utilization in the Far East would be held in Japan in October.

67. He referred to the modest but steady results achieved by the Agency's Safeguards System and expressed his confidence that, with suitable improvements, it would play an important role in the future, especially in connection with the projected non-proliferation treaty. He pointed out that the administration of all safeguards under his Government's bilateral agreements had been transferred to the Agency, and emphasized that in order to further the aims of the Statute all countries should solemnly undertake not to divert their peaceful nuclear activities to military purposes and should accept the application of safeguards to those activities.

68. He agreed that safeguards should cover the whole nuclear fuel cycle, but hoped that the extension of the system to cover fabrication plants, which was proposed, would not hamper the development of nuclear industry and would cover only the minimum requirements necessary to prevent diversion to military purposes. To that end, safeguards procedures, especially those for power reactors, should be simplified so that safeguards would not be uniformly applied to the entire fuel cycle but according to the characteristics of each nuclear facility. He believed that if protection of industrial secrets and simplification of safeguards procedures could be achieved, the system would become more acceptable to a greater number of Member States, and urged the Agency to make a greater effort to develop and simplify inspection techniques.

69. He then spoke briefly of recent developments in the peaceful uses of atomic energy in Japan, of which a detailed account had been circulated [11]. For example, it was planned that the total capacity of nuclear power plants in Japan would reach 1 300 MW(e) by 1970; furthermore, the Power Reactor and Nuclear Fuel Development Corporation, consolidating co-operation between governmental, academic and industrial circles, was to implement a "national project" for a fast breeder reactor and an advanced converter reactor. In addition, Japan's first nuclear-powered ship was scheduled for completion by 1971.

70. In conclusion, he referred to the new economic and political situation created by recent rapid progress in the peaceful uses of atomic energy, and the new responsibilities thus devolving on the Agency, and pledged the co-operation of the Japanese Government in all future activities aimed at harnessing that tremendous energy and promoting the well-being of mankind.

[10] GC(XI)/362, paras 43-48.

[11] GC(XI)/INF/97, section B.

71. Miss ROESAD (Indonesia) welcomed Uganda, Sierra Leone and Singapore to membership of the Agency. Her delegation had always believed that the principle of universality should apply and that the addition of new Members could not but strengthen the Agency.

72. During the past year extensive political and economic transformations had taken place in Indonesia; inflation had been restricted to a manageable level, and the outlook for the future was promising. In the field of atomic energy, the austerity programme had made it necessary to discontinue the construction of several buildings started in previous years, but it had proved possible to draw up a programme which was in line with the policy of stabilization now being pursued by the Government. Radioisotope production with the Triga reactor had been established on a regular basis, a number of research activities had been begun to make use of the isotopes so produced, and a research programme on gamma irradiation had been embarked upon; a gamma irradiation plant was soon to be purchased and installed near Djakarta. The reactor had also been used for activation analysis in chemistry, pharmacy and geology. Attention was thus focused more on research than on constructional work, and it might be said that 1967 was the year in which the research programme had got under way.

73. Indonesia was aware of the progress being made in atomic energy activities in other parts of the world, culminating in the commercial application of nuclear power. She believed that it would still be some years before such a stage was reached in Indonesia, but the picture might well be changed by future improvements, and her Government would follow closely, for instance, the development of nuclear desalting plants and the progress made in more advanced countries in solving the scientific and technical problems of large-scale application of nuclear energy.

74. Her delegation endorsed the statement made by the Director General that, in view of the progress they had made, the advanced countries had an obligation to assist the less-developed countries on a more extensive scale [12]. It had frequently stated its belief in the importance of technical assistance, and had always maintained that it was one of the most necessary activities of the Agency. She therefore felt some concern that since 1962 there had been no increase in the resources available for technical assistance, and believed that steps should be taken to change that situation, if necessary by amending the Agency's Statute. In the light of the recommendation of the Board of Governors that "every effort should continue to be made to obtain voluntary contribution from Member States" [13], she was pleased to announce that her delegation was ready to pledge an increase of

about 50% over its previous contribution to the General Fund.

75. Her delegation also felt that the supply of equipment as technical assistance should be made independent of the services of an expert. Although it welcomed the flexibility in that respect recommended by the Board [14], it would still be only in exceptional cases that equipment could be provided without experts. That was not entirely satisfactory, and she therefore supported the draft resolution of Australia, Brazil, Ceylon, Ghana, India, Pakistan, Poland, Thailand, Tunisia and the United Arab Republic, aimed at removing that restriction [15]. She also felt that fellowships providing training up to doctorate level would help to meet the urgent need of developing countries for an increase in their skilled manpower.

76. She strongly endorsed the observation made in the Review of the Agency's Activities referring to the terms of Articles III.A.2 and III.B.3 of the Statute [16]. Article III.A.2 authorized the Agency "To make provision, in accordance with this Statute, for materials, services, equipment, and facilities to meet the needs of research on, and development and practical application of, atomic energy for peaceful purposes, including the production of electric power, with due consideration for the needs of the under-developed areas of the world", and Article III.B.3 laid down that it should "Allocate its resources in such a manner as to secure efficient utilization and the greatest possible general benefit in all areas of the world, bearing in mind the special needs of the under-developed areas of the world". In endorsing those remarks, her delegation wished to remind all Member States that its special responsibility with regard to developing countries should take priority over all other activities which the Agency was required by its Statute to undertake in the interest of all its Members.

77. Her delegation supported the Budget for 1968, with certain reservations. With reference to INIS, the Indonesian Government accepted the importance of mechanizing information storage and retrieval, but felt that care should be taken that in doing so no extra burden was placed on the developing countries and no funds were taken from projects which were a special responsibility of the Agency. The most important issue of the day was the proposed non-proliferation treaty; her delegation was profoundly satisfied with the results achieved, and looked forward to the time when agreement would also be reached on the subject of safeguards. On the question of inspection, she agreed with Mr. Spinelli, Representative of the Secretary-General of the United Nations that, whatever the final

[12] GC(XI)/OR.111, para. 39.

[13] GC(XI)/362, para. 15(a).

[14] *Ibid.*, para. 20.

[15] For the final text of the resolution, see document GC(XI)/RES/230.

[16] GC(XI)/362, para. 8.

decision on the subject of inspection, it was inconceivable that the Agency would not have an important part to play in nuclear disarmament [17].

Mr. Nabavi (Iran) took the Chair.

78. Mr. DEMOPOULOS (Greece) said that the progress made during the eleven years since the Agency had been set up justified its existence, as also did the increasing number of States applying for membership. His delegation was always ready to welcome the admission of new Member States, especially from among the developing countries. One of the Agency's main objectives was to assist in the development of those countries, and it was his hope that they would soon be able to rival the progress made by the more advanced countries.

79. Greece was committed to the rapid development of its economy, an aim which called for increased knowledge, particularly in the new branches of science and technology. The Agency's technical assistance could therefore be of great benefit to Greece, especially in fields related to economic growth such as industry, agriculture, hydrology, nuclear power and desalting.

80. The research programme of the Democritus Nuclear Research Centre included both basic and applied research. The former was directed towards increasing knowledge in various scientific disciplines, and it was possible that many basic research projects would become of practical use in the very near future. The applied research, constituting some two fifths of the Centre's programmes, aimed at making rapid contributions to national economic development.

81. The basic research tools available in Greece were a swimming-pool type reactor and a medium-sized computer. Work was in progress on nuclear, theoretical and reactor physics and on chemistry, biology, electronics, soil science and entomology. The production of short-lived radioisotopes for use in medicine, agriculture and industry had begun in 1961, and it would in the near future be possible to cover all national requirements. Greek physicists were playing an active part in the high-energy physics programme of the European Organization for Nuclear Research (CERN), and the Greek Atomic Energy Commission was also engaged in applied research. Studies of water reservoirs and ground-water tracing studies were in progress, and their results would be of great benefit in view of the increasing water shortage.

82. Good progress was being made in the control of the olive fly by the sterile male technique, using gamma rays, and successful completion of the project would save the national economy an annual sum of some \$15 million.

83. A study was being made of the possibility of active co-operation between the Greek Atomic Energy Commission and the Public Power Company in developing a national nuclear power programme, and Greek universities were collaborating in the training of students in nuclear science.

84. The Agency had provided a number of experts, grants and fellowships in connection with many of the programmes. In 1966 13 Greek citizens had held study fellowships abroad and 11 Agency experts had visited Greece under the technical assistance programme.

85. The Agency's objectives were to relate atomic energy to economic growth and social advancement, particularly in the developing countries, acting in close co-operation with other international organizations. His delegation wished to stress the significant contribution which the Agency had made to the expansion of atomic energy activities in Greece, and assured it that Greece in its turn would do everything possible to promote the peaceful uses of atomic energy.

86. Mr. CHUNG (Republic of Korea) thanked the Director General and the Secretariat for the work they had done. As a retiring Member, he also wished to thank all other Members of the Board of Governors.

87. Korea had accomplished much in various branches of science since its first research reactor became critical in March 1962; since that date, too, radioisotope production units had been installed with the Agency's assistance, so that his country was now able to meet its own requirements in short-lived radioisotopes. A successful start had also been made on the production of radio-pharmaceuticals.

88. The present research reactor was going to be upgraded because of the need for higher neutron fluxes and long-lived radioisotopes and the need to develop reactor physics and reactor engineering. Within the next 12 months a start would also be made on the construction of another reactor.

89. During the preceding year, his country had made great progress in the industrial applications of radioisotopes, which were being effectively used for thickness and level gauges, and also in radiography and tracer techniques.

90. In addition, the Republic of Korea was successfully using radioisotopes for tracing sand movements in harbours, exploring underground water, detecting water leakage in mines and reservoirs, etc. The use of radioisotopes in food preservation was also being studied.

91. His country was developing its own methods of solidifying liquid wastes, using high-quality Korean

[17] GC(XI)/OR.111, para. 69.

clay, and combustible wastes were being treated in a new type of incinerator.

92. The Korean Atomic Energy Research Institute was now co-operating with industry with a view to promoting wider applications of radioisotopes and the results were highly promising.

93. Hospitals, too, were making greater use of radioisotopes. The Radiological Research Institute, established in 1963, had made good progress in the diagnosis and treatment of cancer, malignant tumours and other diseases. Six mobile radiological clinics were to be set up during the coming year.

94. He was happy to report that the Republic of Korea was also using radioisotopes in agriculture, and a Radiation Agriculture Research Institute had been established. The Institute was doing research on fertilization, mutation, fruit preservation and plant protection.

95. Like the rest of the world, his country was paying great attention to nuclear power production. The country's increasing power needs would be partly met by a 500-MW nuclear power station, to be completed by 1974, and another 500-MW reactor to be completed by 1976.

96. Regarding the Agency's future policy, he thought its training programme should be further expanded.

97. Speaking of the research contracts programme, he stated that so far 13 research contracts had been concluded between the Agency and Korea; work was still being performed under some of those contracts. The contracts had given great encouragement to Korea's nuclear laboratories and academic institutions. The research contract programme was greatly appreciated, and should also be further expanded.

98. He suggested that the Agency's Regional Office for Asia and the Far East should be enlarged.

99. In conclusion, he said he believed the regional study group meetings in Asia had done much to foster the exchange of opinions and information between the Member States; his Government was going to propose that the Agency sponsor such meetings in the capital of the Republic of Korea.

100. Mr. LEE (China) expressed the regret of the Chinese delegation at the passing away of Sir John Cockcroft, who had had many friends in the Republic of China.

101. He thanked the Director General and members of the Secretariat for their work.

102. He appreciated the Agency's efforts in arranging international and regional conferences and symposia. He also valued the work being performed by

experts recruited from different Member States, and welcomed the Agency's participation in desalting projects and the interest it was taking in the production of better crops of wheat, rice, peanuts, soya beans and other plants by means of artificially produced mutations. The Agency's work to eradicate fruit and livestock pests was also of great importance. All those applications of atomic energy would have a profound impact on the future well-being of mankind.

103. The Republic of China was also making a contribution to that work. Chinese agricultural scientists, working on mutation experiments with X-rays and isotopes, had succeeded in producing improved varieties of rice, sugar cane, peanuts and potatoes. An FAO-IAEA Research Co-ordination Meeting had been held in Taiwan on the Use of Induced Mutation in Rice Breeding, and he hoped that more meetings or symposia of that kind would follow; the Republic of China would be glad to act as host.

104. Radioisotopes were going to be used to an increasing extent in agriculture, medicine, industry and food preservation, and nuclear power was also coming into its own. All those developments were important both for the advanced countries and the developing countries.

105. It seemed to him, however, that the most important function with regard to nuclear energy was the work of regulating and controlling its peaceful uses. If the leading nuclear Powers could co-operate, there would be no difficulty in working out measures to deal with the intransigents.

106. The Republic of China was going to start building nuclear power plants. The Taiwan Power Company had originally planned to begin construction of the first plant around 1970. A comparative study of conventional and nuclear power had been undertaken and, although it had been found that there would not be sufficient time for a nuclear plant to be completed by 1970, it had been established that nuclear power would be economically competitive with power generated by other means.

107. Two siting missions, one headed by an Agency official and the other organized by the Taiwan Power Company, had reached almost identical conclusions, and as a result the first nuclear power station, with a capacity of 500 MW(e), would probably be completed in 1974. The Taiwan Power Company also planned to build three more nuclear power plants with the same capacity before 1980. So far only one research reactor was available; it had an output of 1 MW, was located in the National Tsing Hua University and had been used for training and research as well as for the production of radioisotopes. The purchase of another research and materials testing reactor with a larger capacity was being considered.

108. The Republic of China was both a donor

and a recipient of technical assistance. Most of the assistance China had received had been in the form of equipment and the services of nuclear experts. His country was also grateful for the fellowships and research contracts from which it had benefited. The assistance offered by China consisted mainly of the services of agricultural scientists, textile engineers, electric power engineers and, occasionally, consignments of radioisotopes. Admittedly the Republic of China was essentially a receiving country, but it had accepted a number of people for training in radioisotope applications.

109. His delegation was gratified to note that the Agency had started recruiting Chinese nationals in

its Secretariat. He hoped that would continue. His country had tried to send participants to all the Agency's international and regional conferences and symposia.

110. He announced that, in response to the Agency's request, his country had decided to make a voluntary contribution of \$10 000 to the General Fund for 1968, thereby doubling its previous contribution. He hoped the Agency's target of \$2 million would be reached.

111. In conclusion, he said his Government would support the Agency's programme for the coming year.

The meeting rose at 12.50 p.m.