



International Atomic Energy Agency

GENERAL CONFERENCE

GC(XV)/OR.146
3 August 1972*

GENERAL Distr.
ENGLISH

FIFTEENTH REGULAR SESSION: 21–27 SEPTEMBER 1971

RECORD OF THE ONE HUNDRED AND FORTY-SIXTH PLENARY MEETING

Held at the Neue Hofburg, Vienna, on Thursday, 23 September 1971, at 10.40 a.m.

President: Mr. OTERO NAVASCUES (Spain)

Item of the agenda**	Subject	Paragraphs
9	General debate and report of the Board of Governors for 1970-71 (continued)	1 - 117
	Statements by the delegates of:	
	Japan	1 - 14
	Australia	15 - 32
	Czechoslovakia	33 - 43
	Viet-Nam	44 - 51
	Yugoslavia	52 - 63
	Netherlands	64 - 74
	Romania	75 - 89
	India	90 - 101
	China	102 - 111
	Israel	112 - 117

* A provisional version of this document was issued on 29 September 1971.

** GC(XV)/469.

THE RECORD

GENERAL DEBATE AND REPORT OF THE BOARD OF GOVERNORS FOR 1970-71 (GC(XV)/455, 466) (continued)

1. Mr. FUJIYAMA (Japan), continuing the general debate, observed that the world was now entering upon a stage of rapid growth in the peaceful uses of atomic energy, and the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) [1] should serve the purpose of providing a secure framework for such growth. The role of the Agency had been even further enhanced by the coming into force of NPT. His delegation also wished to mention the timely convening of the Fourth International Conference on the Peaceful Uses of Atomic Energy (the Fourth Geneva Conference), at which useful discussions had taken place covering a vast range of subjects of common interest.
2. According to the latest forecast by the Japanese Government's Energy Survey Commission, Japan's total demand for energy would be 2.5 times greater in 1975 and 5.4 to 6 times greater in 1985 than it had been in 1967. By 1975 the total demand for installed generating capacity would be about 117 000 MW, and would rise to about 230 000 MW by 1985.
3. Against a background of supply, price and air pollution difficulties attending the further use of fossil fuel, the rapid development of nuclear power generation had indeed become essential in Japan. The Japanese power industry had made great efforts for the introduction of nuclear power into its plant construction programmes. As a result, there were now four nuclear power plants in operation, with a total capacity of 1300 MW, and nine more plants were under construction. Japan's nuclear power capacity should be of the order of 8600 MW by 1975 and 60 000 MW by 1985, accounting for 8% and 26% respectively of the total electric power supply required in the years in question.
4. In the face of such a great expansion of nuclear power generation, the task of securing uranium resources and enriched uranium would certainly be of vital importance for Japan. The cumulative requirements of U_3O_8 were estimated to amount to 18 000 tons by 1975, 120 000 tons by 1985 and 170 000-200 000 tons by 1990. In order to meet that large demand, the country would have to conclude long-term import contracts and participate in the development of uranium resources in various areas. The demand for enriched uranium would likewise increase dramatically by 1985, and while the United States was at the moment the sole supplier of that material, the Japanese Atomic Energy Commission was carrying out its own technical research and development projects with a view to meeting part of the demand from national sources.
5. The Japanese Government had designated, as an important national project, the development of advanced thermal reactors and fast breeder reactors, and was undertaking research and development programmes with a view to the early introduction of such facilities. Fast breeder reactors were expected to be commissioned in the late 1980s, with the first experimental reactor attaining criticality in 1974. Advanced thermal reactors would go into service in the late 1970s, and the prototype reactor, which was now under construction, would be critical in 1975.
6. The competent Japanese authorities were making great efforts to promote the nuclear fuel fabrication industry, to build up a reprocessing system, and to encourage the use of plutonium as fuel. The present year had seen a start made on the construction of a reprocessing plant with a capacity of 210 tons per year.
7. The construction of a nuclear-powered ship, the "Mutsu", had been making good progress and the vessel was expected to be completed in early 1973. In addition, the law governing liability for nuclear damage had been revised, with a view to facilitating the entry of nuclear ships into Japanese ports.
8. In the light of the swift development of nuclear power generation throughout the world, the demand for enriched uranium continued to expand at a very great pace, and the present capacity to supply enriched uranium would, it was estimated, be surpassed by the demand in the 1980s. In that connection, Japan particularly appreciated recent offers which would allow Japanese industry access to uranium enrichment technology. Japan would be ready to participate in multinational talks to discuss the proposed joint venture in uranium enrichment.
9. Such offers would, moreover, be of importance for the advancement of science and technology in the world. For the sake of the progress and welfare of mankind, all information available on achievements in the scientific and technological fields should be freely exchanged and utilized, as was laid down in Article IV of NPT.
10. NPT, as a step on the road to nuclear disarmament, would certainly contribute to the stabilization of the world situation and to the strengthening of peace. However, its significance should not be limited to that aspect alone. It should also serve as a secure framework for the steady development of the peaceful uses of atomic energy. If NPT proved itself capable of serving such a noble cause, its significance would be epochal in the history of the development of atomic energy.
11. During the meetings of the Board's safeguards committee, his delegation had constantly pleaded for a rational and simple safeguards system in connection with NPT. He was convinced that efforts should be continued to ensure the further rationalization and simplification of safeguards procedures.

[1] Reproduced in document INFCIRC/140.

12. His delegation attached particular importance to the principle of equitable treatment as the guiding concept in the forthcoming negotiations for the Japanese safeguards agreement. He wished to add that his Government intended to initiate exploratory talks in connection with the negotiations for the Japanese safeguards agreement with the Agency some time during the autumn of 1971.

13. A vital issue affecting all nuclear countries was the environmental problems relating to nuclear power. Protection against the pollution of air and water, and indeed of the environment as a whole, was of paramount importance from the standpoint of the welfare and progress of mankind. As nuclear power produced much less air pollution than did fossil fuel, it would be more and more employed as an energy source on a world-wide scale. However, nuclear power generation had its own pollution problems, and the accumulation of radioactive wastes and their disposal would become a problem of increasing importance. Japan was greatly concerned at the possible effects of the development of nuclear technology on the human environment, and had begun to make comprehensive efforts to tackle the problem. However, it went without saying that environmental problems could be better solved through international understanding and co-operation. Japan was therefore looking to the Agency for prudent guidance in the rational solution of that vital issue.

14. The tasks of the Agency would continue to expand in the coming years. The co-operation of Member States would become even more necessary if the Agency was fully to discharge its responsibilities under the Statute. The Japanese delegation wished to reiterate its firm determination to contribute to that end.

15. Mr. TIMBS (Australia) said that the use of nuclear energy was well-established, particularly in nuclear power generation where it was becoming to a much greater extent a commercial and industrial responsibility. However, perhaps more than ever, there was a need for government involvement and international co-operation, as had been stressed at the Fourth Geneva Conference. The investments that would be needed in the future would make an important impact on the economy of most countries. Governments must continue to sponsor research and to act in the field of regulation and control.

16. In the autumn of 1970 the world had first heard the announcements by the companies concerned of substantial reserves of uranium in ores of high grade in Australia. Some of those announcements had been made prematurely and adequate drilling had to be completed before the amounts were known with certainty. The reserves stated by the companies had since been written down substantially. Nevertheless the prospect of large high-grade reserves had been sustained and he was confident that, in the course of time, the exploration programmes would show that Australia was one of the important uranium provinces of the world.

17. During the past 12 months the Atomic Energy Commission had been making an assessment of tenders received for the construction of a nuclear power station at Jervis Bay. However, in June 1971 the Government had decided to defer consideration of the project. Whilst the delay in coming to a decision was disappointing it would not affect the ability of the utilities to make available adequate supplies of electrical power. As Australia had large reserves of easily mineable high-grade coal, there was less urgency for it to enter the field of nuclear generation.

18. Australia welcomed the invitation of France to participate in studies relating to the technical and economic feasibility of the application of French enrichment technology in Australia. As Australia would be a major exporter of uranium it was pleased to learn that the United States was willing to discuss the basis on which American technology might be used in the construction of enrichment plants outside the United States.

19. New power plants were now being sold and bought in most countries on the basis of their ability to produce power at competitive prices. They would also be sought as a means of pollution control. In a short time Australia would also need to "go nuclear" despite favourable fossil fuel resources. However, in an energy-hungry world, there was no room for complacency. Reactors developed to date had certainly not provided any long-term solution for the production of nuclear energy. There would be more emphasis on providing nuclear power plants for the developing countries in the 100-500 MW range because they normally required rather small increments of electric power. The development of the fast breeder reactor and the tapping of fusion energy must be pushed ahead at full speed if the world was not to face the prospect of a severe depletion of its energy reserves within the next few decades. Over the past 12 months increased emphasis had been given to fast breeder reactor programmes in all of the advanced nuclear nations. There was also a very large investment in the improvement of existing technology. That was very desirable and was most likely to receive the greatest impetus because there were a number of viable, proven reactor systems competing with each other. Therefore, Australia was particularly pleased to see another system move towards commercial acceptance with the recent announcement by the Philadelphia Electric Company and Gulf General Atomic of plans to build a 2300-MW high-temperature gas-cooled reactor. That reactor system had long found favour in Europe and in the United States and he admired the courage of those who had brought it to its present stage, accepting all the associated risks.

20. Pollution control would be an important issue in the future and he commended the Agency on its work in that regard.

21. The viability of existing systems, and their rate of growth, and in part the future of fast breeder reactor systems, depended on the provision of adequate supplies of uranium at

acceptable prices and on the necessary enrichment capacity to transform the uranium into reactor fuel. It was therefore unfortunate that the uranium mining industry throughout the world continued to be in a depressed condition with prices offered being hardly adequate to sustain long-term interest in the mining industry. He therefore paid tribute to the mining industry in pressing ahead, uncovering and proving new resources, despite that handicap. There was a growing need for some machinery for the orderly marketing of uranium if adequate supplies were to be assured in the future.

22. During the past 12 months there had been growing international recognition of the need to make plans for the provision of the necessary enrichment capacity. The considerations involved were complex and the capital sums large. But a much greater capital investment was involved in the construction of the reactors which could be serviced by a single enrichment plant. It was reasonable therefore to expect that, given the necessary lead, industry could provide enrichment capacity with the same competence as it had displayed in the installation of nuclear generating capacity. The whole problem of the introduction of enrichment capacity had to be watched carefully. Those plants, which were highly capital intensive, should be operated at maximum capacity to be economical. Therefore the phasing-in of new enrichment plants beginning about the end of the current decade should be properly co-ordinated to ensure that there was enough capacity available at all times and, as far as practicable, that there would not be a sizable surplus of unused capacity.

23. As an island nation at the end of the world's shipping routes, Australia viewed with interest the developments in the most advanced countries in nuclear propulsion. Whilst nuclear ships were still far from economic, there was scope for improving the situation by lowering construction and operating costs and determining the most suitable cargo-ship size and routes for nuclear operation. Nuclear propulsion for large bulk carriers engaged in long hauls appeared to be the ideal.

24. The major marine propulsion programme under way in Japan, which was Australia's major trading partner, and the recent operation by the Federal Republic of Germany of the nuclear ship "Otto Hahn" as an ore carrier demonstrated the confidence of those nuclear countries in the future of such propulsion. A great pioneering effort had been made by the United States and the Soviet Union. In the final analysis, however, the success of that important new mode of transport depended in a large measure on international co-operation and goodwill in solving the problems of passage and access to ports throughout the world. That required full confidence in the integrity and safety of reactor systems and the goodwill of all countries in facilitating the operation of such ships.

25. The development of the peaceful uses of nuclear explosives could be of immense benefit

to mankind. But the maximum international co-operation would be essential if the potential benefits of that new technology were to be obtained. During the past year encouraging technical discussions had been conducted between the major nuclear countries with such programmes. The Soviet Union had used nuclear explosives successfully to extinguish otherwise uncontrollable gas-well fires and the United States had made good progress in proving the value of nuclear stimulation as a commercially viable technology for recovering natural gas from fields of low permeability. Those were promising developments in view of the problem of resources depletion. Despite the many obstacles facing the development of a viable peaceful nuclear explosions technology, the latter would surely play a significant role in assisting with a wide range of projects to conserve resources, raise productivity and recover resources which would not otherwise be available.

26. There was still considerable scope for developing further uses of radioisotopes and radiation sources. Radioisotopes had already made a significant contribution to man's well-being. During the coming few years large radiation sources would find a much wider area of application in the chemical and food preservation industries, to the great benefit of mankind.

27. Many great men had taken part in the contribution of atomic energy to human welfare. In selecting the members of the Scientific Advisory Committee (SAC), the Director General must have regard to geographical considerations and political balance but the overriding consideration was to choose men of intellectual distinction and wide experience. The Director General was contemplating widening the scope of SAC and would need to choose members from all Member States without distinction, unfettered by partisan pressures.

28. A very significant advance made during the year had been the Agency's success in promoting the adoption by Member States and international organizations of uniform regulations for the safe transport of radioactive materials. Both safety and the nuclear industry were well served by those regulations, and he noted with satisfaction that the Agency was working on a revision of its Regulations for the Safe Transport of Radioactive Materials [2] to take account of new problems and of experience gained to date.

29. Australia had accepted its full share of responsibility as a Member of the Agency and a Member of the Board of Governors during the past 12 months and had participated in the development of the NPT safeguards arrangements. It had played a full part in the technical assistance programme, not only through its voluntary contributions to the General Fund but also through the provision, at its own expense, of experts and equipment in the Pacific area.

30. Australia had welcomed the Symposium on the Biophysical Aspects of Radiation Quality which had been held at Lucas Heights in March 1971.

[2] STI/PUB/148.

31. He paid tribute to the Chairman of the Board and to the Director General and his staff for a job done with patience and skill. He commended and approved the Board's annual report for 1970-71 [3].

32. In future atomic energy would make a major contribution to civilization. Its progress could only be fostered through wide international co-operation, for which the Agency would provide the focal point.

33. Mr. NEUMANN (Czechoslovakia) said that the Fourth Geneva Conference had provided clear evidence of the enormous development of the peaceful uses of atomic energy in every field. That was particularly true of nuclear power, which was of such fundamental importance as a means of meeting the economic requirements of various countries and solving the vital problems currently facing mankind - such as providing enough food for the whole of the world's population.

34. That progress had obviously been due in no small measure to the broad, vigorous and fruitful international co-operation which had existed from the start and was manifested in the activities of the Agency and the multilateral international contacts achieved between different countries through the medium of the Agency.

35. Another success of international collaboration that had attracted comment at the Fourth Geneva Conference was the fact that the Agency had been entrusted with implementing NPT. The work which had been done, especially of late, to prepare and introduce an effective international safeguards system was worthy of close attention. His delegation considered that Member States had now had enough time, since the successful completion of the Board's safeguards committee's work in 1971, to set about concluding safeguards agreements with the Agency. In that connection the Czechoslovak delegation wished to state that it found the proposed method of financing safeguards activities quite acceptable.

36. Consequently his delegation felt that events were taking the proper course and that by the beginning of March 1972 all negotiations between States party to NPT and the Agency should have been completed. The Czechoslovak Government attached great significance to observance of that deadline, for it regarded the non-proliferation of nuclear weapons as a matter of the utmost importance and would interpret the conclusion of safeguards agreements as evidence of a further endeavour on the part of Member States to achieve world security. It was natural that the growth of safeguards work should bring a corresponding increase in the number of Agency staff in the Department of Safeguards and Inspection. In that connection the Czechoslovak delegation urged that the Professional posts in question should be filled with due regard to fair geographical distribution among Member States.

37. The implementation of the safeguards system would inevitably present certain problems in the early years, problems which would require an effective solution as and when they arose, but his delegation was confident that all future problems would be resolved in the same spirit of international collaboration which had prevailed throughout, especially in that particular field.

38. His delegation believed that NPT would eventually be ratified by those countries which had so far remained uncommitted.

39. The twenty-fifth Congress of the Council for Mutual Economic Assistance (COMECON) recently held in Bucharest had discussed and approved a broad programme aimed at further consolidation and improvement of collaboration and the development of close economic integration. That programme offered a wide basis for further international collaboration with all States.

40. In connection with matters already mentioned, the Czechoslovak delegation considered it necessary once again to point out the critical situation which had arisen because an advanced country like the German Democratic Republic was not represented in the Agency. The time had come for all to recognize the need for a realistic approach to that question. The admission of the German Democratic Republic would, in principle, have a positive effect on the future development of the Agency's activities.

41. The Agency's detailed programme for 1971-76 had already been discussed the previous year and the Czechoslovak delegation had expressed its fundamental agreement with the proposed programme at that time. There was accordingly no need to make any extensive comments on the revised programme for 1972. However, the possibility that the Agency might participate in an analysis of the present system of training nuclear engineers with a view to meeting the future needs of the nuclear power industry was something worth considering. The Agency's programme for 1972, in the opinion of the Czechoslovak delegation, unfortunately raised problems from the budgetary point of view, as had been the case in 1971. In analysing the budget [4] his delegation was most unhappy to note that virtually two thirds of the 14.8% increase over 1971 was attributable to increased salaries for Secretariat staff. Such an attitude to the budget was quite wrong, for it meant that 70% of the Agency's total real budget was expended on salaries for Secretariat staff, thereby restricting the scope of the Agency's work.

42. From the budget document which had been presented it was impossible to draw the conclusion that the persistent rising trend in the budget was matched by a corresponding trend in the Agency's activities. It would be interesting to study that problem on the basis of both economic and non-economic factors.

[3] GC(XV)/455.

[4] GC(XV)/460.

43. The Czechoslovak Government had instructed him to say that it proposed to supply to the Agency, within the framework of the 1972 programme of technical assistance to developing countries, Czechoslovak equipment worth 150 000 crowns; it would also offer five long-term fellowships for study in Czechoslovak higher educational establishments and four 12-month fellowships for study and work in research institutes and facilities of the Czechoslovak Academy of Sciences. Furthermore, his country was again offering to receive specialists from developing countries on a study tour under the Agency's auspices. Lastly, the Czechoslovak Socialist Republic proposed to act as host to one Agency symposium in 1972.

44. Mr. LE-VAN-THOI (Viet-Nam) said that the Fourth Geneva Conference had given the whole world a demonstration of the efficiency of the Agency which, ever since its establishment, had done everything possible to promote and co-ordinate international efforts in the application of nuclear fission for the welfare and prosperity of mankind. The outstanding success of that Conference was to the credit of the Director General and his staff, to whom the Viet-Nameese delegation wished to express its admiration and sympathy.

45. The prestige enjoyed by the Agency and its solidly experienced staff in the United Nations family was steadily increasing, the more so since the changes in the composition of the Board of Governors would now ensure more rational participation and consequently wider support on the part of Member States.

46. It seemed unnecessary to dwell on the Agency's contribution to progress in nuclear technology and advances in research on the peaceful uses of nuclear energy, especially in agriculture and medicine. It should, however, be mentioned that the Agency was ready to assume the responsibility placed on it under NPT, and that the first safeguards agreements under that Treaty had already been concluded. The compromise solution which had been reached for financing those safeguards had been approved by Viet-Nam, as it was in keeping with the wishes expressed by that country's delegation at the preceding session. [5]

47. Despite the heavy budgetary burden that it would have to support as from 1972 in consequence of the extension of safeguards, the Agency was not neglecting its statutory promotional and assistance obligations. He took particular pleasure in noting that under the Agency's programme of activities for the year ahead, it would continue to pay particular attention to technical assistance for developing countries. However, the Agency could not meet all requests for assistance unless Member States, especially the more advanced countries, were willing to increase their voluntary contributions to the General Fund so as to enable the Agency to meet its new target of US \$3 million. The co-operation of the technically favoured countries would be all the more appreciated by the developing countries in that technical assistance

under the United Nations Development Programme (UNDP) would henceforth be provided only for nuclear research projects which had already received preliminary assistance from the Agency.

48. As far as Viet-Nam was concerned, the Agency had already given very favourable consideration to its modest requests for technical assistance. The Isotopes Laboratory of the Saigon Medical Faculty, which had been equipped entirely with material supplied by the Agency, had rendered valuable services by using new radioactive diagnostic techniques and had obtained encouraging results in the treatment of goitre with radioactive iodine. Research on rice improvement undertaken by the Isotopes Laboratory of the Institute for Agricultural Research, carried out under Agency auspices, had yielded very worth-while results, and in the immediate future Viet-Nam intended to embark upon the study of food preservation by means of a gamma irradiation facility to be provided shortly by the Agency. Along with such technical support, the Agency had also made available to Viet-Nam advisory services in connection with nuclear legislation, which had enabled it to confirm the undeniable utility of the standards and recommendations which it had drafted on the subject of nuclear safety. There could be no doubt that the adoption of those standards by WHO would greatly facilitate collaboration between the health authorities and the authorities responsible for nuclear energy in the various countries.

49. It was a well-known fact that implementation of nuclear programmes in the developing countries was encountering a number of serious difficulties, the most important of which was the lack of qualified technicians. The Agency had made a praiseworthy effort to organize training, specialized courses and study trips on a regular basis. He suggested, however, that the Agency should study the possibility of providing the developing countries with effective means for training qualified technicians at home, and more particularly technicians with intermediate qualifications. The creation of regional centres for nuclear training, along the lines of the International Centre for Theoretical Physics at Trieste, would be very welcome. For the countries of South East Asia, in particular, the Agency might study the question of co-operation with regional organizations, such as the Organization of the Ministers of Education of South East Asia.

50. As regards regional co-operation proper, Viet-Nam reaffirmed its adherence to the decisions of the meeting organized at Bangkok in July 1970, and expressed the hope that the first co-operation projects would soon be implemented with the active support of the Agency.

51. The Government of the Republic of Viet-Nam had just ratified NPT and the amendment of Article VI of the Agency's Statute. By taking those actions, it wished to indicate its interest in the extension of the Agency's activities and to contribute, to the best of its ability, to increasing

[5] GC(XIV)/OR.138, para. 7.

the prestige of the Agency. However, only when peace had been restored in his country which for 30 years had been ravaged by a war which it did not want, would scientific research be able to operate under more satisfactory working conditions. Viet-Nam would then hope to be able to associate itself more effectively with the activities promoted by the Agency in order to extend the benefits of the atom to all nations.

52. Mr. VOSNJAK (Yugoslavia) said that the 1971 session of the General Conference followed a period of positive and fruitful work in some spheres of the Agency's activities: first there had been the conclusion of the work of the Board and its safeguards committee on the structure and content of agreements between the Agency and parties to NPT, and then there had been the Fourth Geneva Conference, which had just ended. Those were two important events in the life of the Agency and, in a sense, they might influence the course of its future activities.

53. The Yugoslav delegation had participated actively in those two activities. Within the limits of its capabilities, it had contributed to a better mutual understanding among Member States, to peace and security and also to the promotion of the peaceful uses of atomic energy, especially in the developing countries.

54. In participating in the work of the Board's safeguards committee, the Yugoslav delegation had always upheld the following principles:

- (a) Strict interpretation of Article III, paragraph 3 of NPT and application of safeguards to all peaceful activities within a State;
- (b) Application of safeguards in such a manner as to render impossible any diversion from the authorized use of nuclear energy to military uses, for the production of nuclear weapons and other explosive devices;
- (c) Application of safeguards in such a manner as to ensure maximum profitability and to ensure simplicity in methods of reporting and of keeping records of the nuclear materials which were not to be used for weapons production;
- (d) Inspection based on direct access to material throughput and on independent accounting and measurements; and
- (e) Distribution of the cost of safeguards among Members so as to achieve the following technical objectives:
 - (i) A reduction in the total cost of safeguards, the only safeguards activities to be taken into account being those specifically mentioned in NPT;
 - (ii) Distribution of the costs among Members in such a way as to minimize the amount payable by countries with small nuclear

programmes or no nuclear activities at all; and

- (iii) The possibility of reviewing the financial provisions after several years' experience of the application of safeguards and, in particular, at the General Conference's session in 1975 when the operation of NPT would be evaluated and studied.

It had been in the light of those considerations that the Yugoslav delegation in the safeguards committee had submitted its proposal and amendments to the resolution.

55. The Yugoslav delegation considered that the principles set forth in the draft of the safeguards agreement were, to a large extent, acceptable. On the basis of that document, its Government was prepared to start negotiations with the Agency for the conclusion of a safeguards agreement. However, it thought it would be advisable to try to improve and complete the draft of the agreement to give more prominence to the interests of non-nuclear States and to reduce the gap between such States and the big Powers.

56. Now that the first stage in the implementation of NPT had been accomplished, other matters must be dealt with. His delegation was thinking, in particular, of the clauses of NPT which dealt directly with the statutory functions of the Agency, namely the promotion of nuclear energy for peace and progress, particularly in the developing countries.

57. The Fourth Geneva Conference had enabled a better idea to be obtained of the overall achievements of Member States in the field of nuclear energy. The developing countries had had some noteworthy successes in that field, particularly in respect of nuclear technology, nuclear power plants and research involving the use of isotopes in medicine, agriculture, industry and so on. Within the limits of its possibilities, the Agency had contributed to those results. However, the Fourth Geneva Conference had also shown that the gap between industrialized and developing countries had grown bigger than ever. That was particularly true in the case of nuclear energy, where the advances made by the industrialized countries were spectacular, whilst those made by the developing countries were very meagre.

58. To remedy the existing situation, all Member States, and especially the nuclear Powers, must contribute to a more rapid and effective development of the applications of nuclear energy in the developing countries. The resolve of the nuclear Powers, as set for in NPT, to promote the peaceful application of nuclear energy throughout the world and, in particular, in the developing countries, had still not been translated into action. It was time that those Powers defined their intentions in concrete and specific terms and gave tangible proof of their sincere desire to keep their promises.

59. The past experience of the Agency and the documents of the Fourth Geneva Conference provided sufficient information about the present status of nuclear energy and about the needs of the developing countries. They also provided information on the current trends of nuclear energy development throughout the world. The Yugoslav delegation suggested that the Director General and the Secretariat of the Agency should draw up an exhaustive draft technical assistance programme and define ways of implementing it and providing the financial assistance required. That draft could serve as a basis for a study by Member States of the effective and total implementation of NPT and of the long-term planning of the Agency's activities.

60. Yugoslavia would continue to associate itself with all those efforts to make progress and would continue to work with the Powers of the world community to make NPT into a truly universal agreement, acceptable to all countries as an instrument of mutual confidence and respect for the sovereignty of the Agency's Member States. The system of control might then be considerably simplified until it became unnecessary.

61. An analysis of the information provided for the 1971 session of the General Conference clearly showed that the Agency's budget was increasing year by year. The inadequacy of the efforts made by the Agency to find ways and means not only of putting a brake on increases in the budget, but still more of reducing it, should be stressed. That could be achieved by reductions in the Agency's staff and by eliminating certain of the Agency's less important or less necessary current activities.

62. An analysis of the Agency's activities showed that they had been wide-ranging, diverse and successful, thanks to the efforts of all its Members, its administrative organs, its Secretariat and its Director General.

63. On the other hand, the principle of universality of the Agency had still not been translated into fact. Many countries, whose contributions to the Agency's work could be of great benefit to the international community, were still not members of the Agency. The Yugoslav delegation hoped that the existing barriers would soon be removed and that, through recognition of the realities of the modern world, the People's Republic of China, the German Democratic Republic and other countries could be welcomed as Member States.

64. Baron van BOETZELAER (Netherlands) said that the main task was to plan for the future. In particular, safeguards activities took up a great deal of the time and money of the Secretariat and it was most important that that time and money should not be wasted.

65. NPT was quite specific as to its aims but much less specific as to their implementation. Considering that the aims were to be achieved by a control system which thoroughly affected the sovereign rights of States, it was not to be

wondered at if those States wished to know exactly their new obligations and rights nor that the Board's safeguards committee had taken nine months and 82 meetings to reach agreement.

66. His Government wished to commend the persevering work of the safeguards committee and the excellent services provided by the Director General and his dedicated staff.

67. The formulation of the material on the structure and content of agreements required in connection with NPT [6] had been a most important step towards making NPT work, but it only provided a model and the next step was the conclusion of the agreements between the parties to NPT and the Agency required by Article III. As a Member of the European Atomic Energy Community (EURATOM) his Government would shortly negotiate that agreement through and with the EURATOM Commission, which had just received a mandate to that effect from the Council of Ministers of the European Communities.

68. His Government supported the view that the heavy responsibilities of the Agency under NPT should not hamper its other work and should not unduly burden countries with limited resources. For that reason it supported the solution for the financing of NPT safeguards elaborated by the safeguards committee and recommended by the Board to the Conference for acceptance.

69. The Netherlands Government also supported the proposal, made by the Board, to raise the target of the voluntary contributions to the General Fund to \$3 million, and had accordingly raised its 1972 contribution above the required level. It also welcomed the upward trend in the availability of UNDP funds for technical assistance.

70. For an extremely densely populated and highly industrialized country like the Netherlands, problems of environment urgently required solutions and the Agency's role in regard to the United Nations Conference on the Human Environment in Stockholm in 1972 was much appreciated.

71. The Fourth Geneva Conference had made it clear that by the end of the decade nuclear power would cover an important percentage of the power requirements of both advanced and developing countries.

72. His Government was contributing to that development in several fields, such as the development of sodium cooled fast breeder reactors, other types of breeders, partly thorium based, and uranium enrichment facilities. Government-financed research in plasma physics was carried out in close co-operation with other countries, in Europe mainly with EURATOM countries.

73. The establishment of an International Fusion Research Council had been warmly welcomed by his Government.

[6] INFCIRC/153.

74. In order to maintain the high standard of the symposia and seminars organized by the Agency and in order to select new subjects on which others were to be held, the Director General would have to rely more and more on the advice of SAC. In the opinion of his Government the only guideline in selecting members of SAC should be the high scientific qualifications of the incumbents.

75. Mr. URSU (Romania) said he wanted, first, to stress the importance Romania attached to the complex activities of the Agency, bearing in mind the significance of the peaceful uses of atomic energy in the development of his country. The high economic growth rates, achieved in Romania during the preceding two decades, required an approach based on contemporary science and, in particular, the peaceful uses of atomic energy. The main task of Romania's State Committee for Nuclear Energy was to introduce the higher stages of technological research in order to achieve the basic objectives of the atomic energy industrialization programme.

76. By utilizing the results of research it had been possible to put various nuclear facilities at the disposal of the national economy. Industry had received designs for the construction of critical and sub-critical assemblies; progress and expansion had been achieved in the industrial applications of radiations and isotopes, chemical extraction, pharmacology, metallurgy, agriculture, medicine and biology, and the results obtained had been presented at the Fourth Geneva Conference. The various items of equipment that had been developed in Romanian institutes included level gauges, multiple relays for checking furnace lining wear, defectoscopes, humidity meters, etc.

77. The wide range of basic research problems dealt with would ensure the further development of nuclear physics in his country. A tandem accelerator would soon be put into operation, enabling researchers to conduct further work on medium energies and the collaboration of other countries would be invited. Technological research had been concentrated mainly on nuclear fuels and other nuclear materials. To accelerate the development of that important activity, a National Nuclear Programme had been elaborated. All branches of industry and many other economic and social sectors would co-operate within the framework of the Programme, whose main aim was to industrialize nuclear energy by installing about 1000 MW(e) of nuclear capacity before 1980 and by establishing related industries; the underlying basic research would also be fostered. To carry out those tasks the State Committee for Nuclear Energy was co-ordinating the work of research, design and production units, education and information centres, enterprises dealing with the development of nuclear power plants, and other related institutions.

78. Nuclear energy and its applications called for special measures beyond the capabilities of smaller countries, which led to the practical necessity of strengthening co-operation between all countries in the nuclear field. International

co-operation, both economic and scientific, should be for the benefit of all countries and should aim at reducing the gap between them.

79. Reflecting the interests of its people, Romania's foreign policy aimed at establishing a climate of peace, understanding and co-operation between all nations. His country favoured an open foreign policy, carried out under the control of the people, to ensure that the relations between all States were based on the principles of national independence and sovereignty, non-interference in internal affairs, abstention from the threat or use of force, equality of rights, and mutual advantage. His country regarded the strengthening of friendships, alliances and co-operation with all socialist countries as the centre of its international activity, and at the same time, it wanted co-operation with all countries, regardless of social systems. Romania believed that participation in the exchange of material and spiritual values was an essential condition for establishing world peace and security. As a European country, Romania was vitally interested in security in Europe. Now that conditions were favourable for preparing a general European conference, with the participation of all interested States, Romania would act firmly in that direction. His country believed that it was essential to remove all hotbeds of tension and conflict that existed throughout the world: foreign intervention in Indochina must be stopped, the rights of the Viet-Nameese, Laotian and Cambodian peoples to decide their own destiny must be respected, and the conflict in the Middle East must be settled on the basis of the Security Council resolution of November 1967. The total liquidation of vestiges of colonialism, and of all forms of national oppression and racial discrimination was an imperative requirement, and the younger States should be assisted on their way to economic and social progress.

80. His country was a firm advocate of general disarmament, starting with nuclear weapons and other mass-destruction weapons, and it had actively participated in the negotiation of NPT. When that Treaty came into force, Romania would support it to the full in both letter and spirit. His Government had stated its willingness to negotiate with the Agency the safeguards agreement specified under Article III of NPT.

81. If the Agency was to fulfil its mission completely, it would have to become really universal. In reaffirming the consistent position of its Government, the Romanian delegation wanted to stress that China should be represented in all international organizations within the United Nations system by the People's Republic of China. It was urgently necessary to restore the lawful rights of the People's Republic of China in the Agency. Any attempt to prevent the participation of the People's Republic of China in United Nations activities, as a Member State, was an act against the cause of peace and international co-operation. At the same time, the Romanian Government considered that the German Democratic Republic - a country with important achievements in the peaceful uses of nuclear energy - should be a

Member of the Agency, and all obstacles which hampered the participation of other States in the Agency's activities should be removed.

82. As an international organization in the United Nations family, the Agency could and must contribute to ensuring peace and international co-operation. At last year's session of the General Conference, His Excellency Mr. Nicolae Ceaușescu, President of the State Council of the Socialist Republic of Romania, had said that the Agency could contribute, through its activities, to the great benefits that were to be derived from the application of nuclear energy and could help in eliminating under-development and raising the levels of civilization of all peoples. Mr. Ceaușescu had said that particular importance was attached, in that connection, to the Agency's role in promoting co-operation in research and in the use of nuclear energy for peaceful purposes, and in intensifying the efforts of Member States to overcome their handicap in that field. He had pointed out that, in that way, the Agency could greatly contribute to an international détente, to understanding among peoples, and to the cause of peace in the world. [7] In that spirit, his delegation wanted to make some appreciative comments on the annual report of the Board.

83. The report reflected the Agency's achievements, and the inherent difficulties that arose from its multilateral activity, difficulties which had so far been surmounted. The report confirmed his delegation's opinion that the Agency was playing a useful role for the Member States. He did not doubt for a moment that the Agency would continue to carry out its task successfully. Romania had taken an active part in the elaboration of the safeguards agreement, which had been submitted to Member States for examination, and believed that bilateral agreements taking into account the specific interests of States would be reached. At the same time, his delegation thought the Agency realized the necessity of multilateral examination of its increased tasks in international co-operation and technical assistance so that it could contribute to the development of the non-nuclear-weapon States, in accordance with NPT.

84. He was confident that the Agency would receive the necessary assistance from all its Members, and said that Romania would endeavour to play its part.

85. The year just elapsed had seen a broadening of the Agency's sphere of activities. For example, the industrialization of atomic energy had been given more attention and the Agency's activities were beginning to extend to the entire fuel cycle. It would be very useful for Member States if the Agency also devoted some attention to uranium enrichment.

86. To give only one example of the efficient assistance provided by the Agency in the technological domain, he wanted to mention the important

role played by a team of Agency experts in establishing the basis of a project for an institute of nuclear technology, to be established in Romania. The Agency's activities in regard to peaceful nuclear explosions should be continued.

87. The Agency now acted as an executing agency for an increasing number of UNDP technical assistance projects and his delegation wanted to congratulate the Agency for that additional achievement.

88. Certainly, one should not ignore the results obtained by granting technical assistance under established forms, but the progress registered was slow, especially compared with other Agency activities. In that context, his delegation supported the proposal of the Board to raise the target of voluntary contributions to the General Fund to US \$3 million and would make its contribution in accordance with the established level. In addition, his country would offer the Agency fellowships tenable in Romanian scientific institutes in 1972.

89. In reviewing the Agency's activities during the preceding year, he wanted to stress that his Government appreciated the results achieved. On behalf of his delegation he had pleasure in extending thanks to the Agency's Secretariat and to its Director General for the efforts they had made in assisting the Agency's Member States to develop international co-operation in the peaceful uses of nuclear energy.

90. Mr. SARABHAI (India) wished to express his country's appreciation to the Director General and the staff of the Agency for their successful work during the past year and particularly for the very efficient manner in which the Agency had shouldered the responsibility of organizing the Fourth Geneva Conference on behalf of the United Nations.

91. During the last two years the Agency had gone through a difficult period of adjusting to new circumstances and new responsibilities. The enlargement of the Board of Governors, the new basis for meeting the expenses arising out of safeguards and the development of a new framework for the implementation of safeguards were measures that were clearly overdue. However, it was tragic that progress in those directions had been accompanied by a steady erosion of the Agency's activities in promoting the peaceful uses of atomic energy. It was a primary responsibility of Member States to manage the affairs of the Agency in such a way that those promotional efforts were expanded or at least maintained at a uniform level and not allowed to diminish in real terms through inflationary rises in costs.

92. In principle, there must be a change of relative emphasis in the activities of any dynamic organization over a period of time. However, he was alarmed over the conversion of many posts in several Divisions to posts for safeguards activities. In his opinion, subjects which merited special emphasis included such activities as training, demonstration and technical assistance,

[7] See document GC(XIV)/OR.139, paras 9 and 10.

particularly for scientists from the large number of developing countries which were at present not yet participating in any significant manner in the benefits of the peaceful uses of atomic energy. There had recently been a tendency to limit the number of scientific meetings held by the Agency in places other than Europe. Holding more panel meetings in developing countries, even if that meant additional costs for travel, and providing more facilities for training in laboratories and institutions associated with the Agency were perhaps the most cost-effective methods of promoting atomic energy. In the area of soil fertility, plant breeding and entomology, in particular, there was scope for increasing the admission of trainees to the laboratory at Seibersdorf. That could be done by providing fellowships and, if necessary, additional staff for training.

93. The centres of the Atomic Energy Commission in India offered valuable opportunities for training and demonstration in fields such as reactor operations, radiation medicine, radiation protection, management of radioactive wastes, food preservation by irradiation, and neutron activation analysis - all subjects of great practical value. Facilities for research and training in the basic physical and biological sciences were also available. The establishment at Trombay of a documentation service related to the International Nuclear Information System opened up the prospect of a regional centre which could also provide training in the specialized field of documentation on atomic energy.

94. The Nuclear Research Centre for Agriculture, which had been set up as a joint UNDP/IAEA/FAO-supported programme in India, was now developing into an active centre of great significance to many nations of Asia which had to cope with problems of the same type as those found in India. The Centre would be formally inaugurated by the Prime Minister of India in November 1971, but research activities had been going on there for the past two years. Supported by efforts of the Bhabha Atomic Research Centre, the National Dairy Research Institute and the Indian Veterinary Research Institute, the Centre's laboratories served as a national facility for augmenting productivity in agriculture and animal husbandry through the use of nuclear techniques.

95. An important milestone in the development of atomic energy in India had been the acceptance by the Government of a ten-year programme involving not only the installation of 2700 MW of nuclear power by the end of the decade but also provision of a whole set of support facilities and back-up research and development work. In addition, the Indian Atomic Energy Commission had recently decided to set up a National Atomic Energy Regulatory Authority having responsibilities not only in accounting for fissile material but also in the field of health and safety.

96. In collaboration with France, India had recently embarked on a programme for the design and construction of a fast breeder reactor. A test reactor of that type, along with other facilities,

such as processing and reprocessing plants, were under construction at the newly created Reactor Research Centre at Kalpakkam, Madras with the objective of exploiting the country's extensive resources of thorium. A zero-energy fast reactor was scheduled to go into operation at Trombay before the end of the year.

97. The Director General had referred in his statement to the need for increased support of the International Commission on Radiation Units and Measurements and the International Commission on Radiological Protection in work connected with safety standards and environmental pollution. [8] India would like to endorse that proposal.

98. The Director General had also referred to a proposal to increase support of the International Centre for Theoretical Physics at Trieste during the years ahead. [9] While appreciating the work of the Centre - which had helped young scientists from developing countries - India felt that at a time when programmes of practical use were so sorely handicapped for lack of adequate support, such an increase in support might create an imbalance.

99. For several years India had participated actively in the Agency's programme of bringing together countries of a given region to collaborate in various developments related to the peaceful uses of atomic energy. At the last Study Group meeting on the Utilization of Research Reactors held in Bandung, Indonesia in 1971, it had become clear that the earlier collaboration between countries in the South East Asian region was beginning to yield significant results. The Agency had always attached a great deal of importance to that type of promotional activity and he earnestly hoped that it would continue to support such efforts. Several countries had proposed that there should be an umbrella agreement between those countries and the Agency to ensure that various projects of joint interest could be taken up at appropriate times. His Government suggested that such an agreement be submitted to and approved by the Board as early as possible. A step along those lines would represent a new pattern in international co-operation between developing countries.

100. The Indian delegation would like to commend the Director General's proposal to raise the target for voluntary contributions to the General Fund from its present level of US \$2.5 to US \$3 million. He took pleasure in announcing his country's contribution of US \$42 500 to the technical assistance programme of the Agency for the year 1972. That contribution was a token of India's wholehearted support of the Agency and its activities.

101. The Fourth Geneva Conference had left participants with the firm conviction that atomic energy was an essential ingredient not only for maintaining the standards of the economically

[8] GC(XV)/OR.144, para. 17.

[9] Ibid., para. 25.

advanced nations but also for enabling the developing nations to shed their poverty. However, if the benefits of atomic energy were to be enjoyed by the world at large, it was necessary to ensure a free exchange of information and wholehearted co-operation in atomic matters, and not a parochial spirit of secrecy, a policy of sharing rather than of commercial and national acquisitiveness. That was the spirit in which science could develop. He realized, however, that in the world of reality, that was a most difficult dream to achieve.

102. Mr. CHENG (China) said that a major development in the year now ending had been implementation of NPT, a process in which the Republic of China had also played a role. NPT required that non-nuclear-weapon States which had deposited their instruments of ratification should negotiate a safeguards agreement entering into force not later than March 1972. For that reason, a committee had been set up to advise on the drafting of a model agreement, and nearly 50 States had participated in its work. The Republic of China had been one of the nations to serve on the Committee. The Chinese Government had ratified NPT and was now engaged in negotiations with the Agency with a view to concluding a safeguards agreement.

103. Sub-structure and auxiliary civil engineering work on the country's projected 600-MW(e) nuclear power plants had already been started and everything was proceeding according to schedule. The first unit was expected to go into commercial operation in 1975. The second unit, which was a duplication of the first, was scheduled for the subsequent year. A third and a fourth unit, with capacities of the order of 800 MW(e), were being planned for 1978 and 1979. In that connection, the Republic of China felt an obligation to express its deep appreciation to the Agency for the assistance it had received at every stage in the development of those plans. It was particularly indebted to the Agency for having sent a team recently to assist in the safety evaluation of the plant under construction.

104. Construction was also going forward on a materials testing reactor of the heavy-water type. That project, too, was proceeding according to schedule and it was hoped that it would be completed by 1973.

105. In conjunction with the latter installation, a 10-kW swimming-pool reactor using the spent fuel of the existing Tsing Hua Open-Pool (THOR) facility had been completed and initial operation had begun on 2 February 1971. The reactor would be used for the testing of loops before they were placed in the materials testing reactor. At present, it was being used for the preliminary training of personnel. The reactors which he had mentioned had already been evaluated in accordance with safeguards procedures and had already been placed under Agency safeguards.

106. During the past year his country had made steady progress in the peaceful applications of

nuclear energy. In medicine and agriculture particularly, the use of nuclear techniques had become more and more common. Industrial applications were also becoming quite popular. To improve public knowledge of the progress made in nuclear science and to stimulate its further development, a special "Atoms for Peace" exhibition had been held in Taiwan. The exhibition had been a great success and had been attended by more than 330 000 persons. It was felt that such exhibitions contributed greatly to public education and made the public more fully aware of the benefits that could be derived from peaceful applications of nuclear energy and of the safe character of those applications.

107. His Government wished to express its deep appreciation for the many technical assistance projects which the Agency had carried out on behalf of China during the previous years and which had played a key role in the continuous development of the peaceful uses of nuclear energy in the country.

108. His delegation was glad to note that a suitable solution of the problem of financing the safeguards programme had been found. The Republic of China was in full agreement with that solution and wished to congratulate the Board's safeguards committee for having found such an equitable and workable formula.

109. The question of enlarging the Board and re-apportioning regional representation had also been solved. The amendment to Article VI of the Statute [10] had been ratified by the Chinese Government and the instrument of ratification had recently been deposited. His delegation felt that the amendment represented a balanced and fair readjustment.

110. An increasing part was being played by Agency-sponsored projects of regional co-operation in nuclear science. Such projects had made possible the exchange of experience and mutual co-operation of a practical nature among the participants. In that connection, he wished to mention the recent Study Group meeting on the Utilization of Research Reactors held in Bandung, Indonesia. Meetings of that kind of the nations of a particular region having similar problems were of immense advantage. Now that the production of power through the use of nuclear energy was no longer a theoretical possibility but a practical fact, exchanges of information on common problems and experience in that field assumed increasing importance. Other problems suitable for discussion by nations of a given region included those of engineering, safety precautions, waste disposal and so on. The Chinese delegation was convinced that the pooling of information and the interflow of practical assistance within regions would contribute to the progress of all concerned.

111. With regard to the budget estimates of the Agency for the coming year, his delegation, while reserving the right to comment on certain details,

[10] Set forth in Resolution GC(XIV)/RES/272.

nevertheless considered that the proposed increases were based on reasonable grounds. As in previous years, the Government of the Republic of China intended to make a voluntary contribution of US \$10 000 to the General Fund for 1972. It had also placed at the disposal of the Agency a nuclear electronic demonstrator for use in training personnel. The equipment in question had arrived in Turin about a week before. An expert had been sent to the Turin training centre to supervise the assembly of the unit and to give initial instructions concerning its use. All the expenses involved, including those for the expert, were being met by the Chinese Government. Two more training devices of the same type were now under construction and would be placed at the Agency's disposal during the present year and the year following.

112. Mr. FREIER (Israel) said that his country had placed at the Agency's disposal expertise or experts in food preservation by irradiation, insect control by irradiation, uses of radiation and isotopes in human and veterinary medicine, the use of tracer techniques in industry and the study of environmental pollution, hydrology, reactor physics, health physics, the study of agro-industrial complexes, the storage and organization of nuclear data, and in a number of scientific fields of less immediately practical application. The range of Israel's professional contributions to the Agency might extend to other areas, as well, such as radiobiological research and the interaction of radiation with the solid state.

113. There might also be interest in the Agency or in individual Member States in Israel's study of the introduction of nuclear power. They were considering dual-purpose plants for the generation of electricity and the desalination of water, as well as the phasing-in of single-purpose nuclear power plants into the electricity grid.

114. He had been interested in Mr. Seaborg's suggestion that plants of up to 300-MW capacity deserved study for the benefit of developing countries, [11] but feared that even in the range of 400-500-MW installations sufficiently reliable data were not available for a country to entrust to them a good portion of its electricity production at reasonable cost towards the latter half of the decade.

115. Israel would be placing at the disposal of the Agency 45 man-months of fellowships in 1972. In addition, it had pledged its voluntary contribution to the General Fund, as assessed, and would fulfil its pledge as it had done in the past.

116. However, in regard to voluntary contributions Israel had certain misgivings about the weight given to political and extraneous considerations in the councils of the Agency.

117. In conclusion, he thanked the Agency for the assistance Israel had received during the past year.

● The meeting rose at 12.55 p.m.

[11] GC(XV)/OR.144, para. 53.

