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### OFFICIAL RECORD OF THE ONE HUNDRED AND SIXTH PLENARY MEETING

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on Monday, 26 September 1966, at 10.40 a.m.

President: Mr. SARASIN (Thailand)

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\* GC(X)/343.

#### GENERAL DEBATE AND REPORT OF THE BOARD OF GOVERNORS FOR 1965-66 [GC(X)/330, 341] (continued)

1. Mr. HAYMERLE (Austria) first extended a hearty welcome to the delegations of Panama, Jordan and Jamaica, which were attending the Conference for the first time, and observed that the membership of Uganda, Singapore and Sierra Leone, which was being approved at the present session, would further enhance the universal character of the Agency.

2. In line with Austria's desire to contribute to progress and development, his Government was gratified and proud that, nearly a decade previously,

Vienna had been chosen to become the centre for the efforts of mankind to co-ordinate the use of nuclear energy for peaceful purposes. In that, its appointed field, the Agency had achieved substantial results. The generation of electricity with the help of the atom, the use of nuclear power to desalt sea-water, and the application of isotopes in various branches of industry, medicine and agriculture — which had all been considered rather Utopian a few years previously — had now become everyday events. The reduction in the cost of nuclear power, which had been pointed out at the Third International Conference on the Peaceful Uses of Atomic Energy 1), had led to an increase in the number of power stations at present under construction;

1) Held at Geneva from 31 August to 9 September 1964.

Annex II to the annual report of the Board of Governors to the General Conference [GC(X)/330] clearly illustrated the situation in that respect.

3. As a corollary to efforts directed at the development of nuclear power, more attention should, his delegation believed, be devoted to applied nuclear technology. The time had come to co-ordinate the Agency's efforts with the economic requirements which could only be met with the help of the atom, and a study of the Agency's Programme for 1967-68 2) revealed that the Secretariat was conscious of that need. The Austrian Government noted with satisfaction the intended expansion of activities in connection with the applications of isotopes and radiation sources in industry, agriculture and medicine.

4. If his Government had any real criticism of the Agency's work, it related to the fact that, although budgetary increases now tended to range from 8% to 11% per year, the increase in the amount actually spent on operational activities was much less, and in the budget for 1967 would amount to 1.44% only. It would therefore seem necessary to devote more effort to securing a dynamic growth of the Agency's programmes.

5. After those remarks of a general nature, he now wished to make brief reference to some of the Agency's major fields of activity during the past year.

6. The adoption by the ninth regular session of the General Conference of the revised safeguards system 3) represented an important step, if not an actual breakthrough, towards the establishment of a universally accepted safeguards system. When the time came for far-reaching agreements on safeguards among the major nuclear Powers, the Agency must be prepared to assume all the possible functions which might be entrusted to it in that connection.

7. The work done since the preceding session of the Conference on the extension of the Agency's safeguards system to reprocessing plants was most valuable. The relevant resolution adopted by the Board of Governors in June 1966 constituted a first move towards the inclusion of nuclear facilities other than reactors in the safeguards system. Among the growing number of Safeguards Transfer Agreements was one between the Agency, Austria and the United States of America, which had come into force at the end of 1965. The first inspections of Austrian reactor facilities under that agreement had already taken place.

2) GC(X)/332.

3) INFCIRC/66.

8. Another subject which had occupied the Board of Governors during the past year had been the elaboration of a system of international co-operation to provide emergency assistance in the event of nuclear radiation accidents. The area of disagreement in respect of the system had been steadily narrowed, and a resolution adopted by the Board on 19 September 1966 called for completion of its deliberations on the subject before the eleventh regular session of the Conference.

9. Technical assistance was, as always, a vital feature of the Agency's work, and the Austrian Government was highly appreciative of the skill with which the Secretariat administered the resources available for technical assistance activities. Concern was, however, felt at the fact that, while requests for technical assistance were continually rising, the resources available to meet them remained virtually the same; indeed, Agency experts in the field would number only 323 in 1966 as compared with 373 in 1965. Similarly the Agency's fellowship programme, in spite of its great efficiency and utility, had unfortunately registered a gradual decline in scale since 1962. The consideration of ways and means of increasing the Agency's budget for technical assistance operations was therefore urgently called for.

10. On the other hand, the situation was extremely satisfactory as far as research contracts were concerned, the number of contracts awarded having risen from 132 in 1964 to 157 in 1965. It was particularly gratifying to note that research contracts on radioisotope applications in agriculture, food irradiation, medicine and biology had been given high priority in 1965. Good progress was also being achieved by the Austrian/ENEA/IAEA Programme on Irradiation of Fruit and Fruit Juices, which seemed to be a most encouraging example of successful collaboration between world-wide, regional and national organizations.

11. In both 1965 and 1966 the programme of conferences and symposia included a range of subjects indicative of the desire of the Director General and Secretariat to devote increasing efforts to the practical uses of nuclear energy in various scientific and industrial fields. Particular mention should be made of the Symposium on Magneto-hydrodynamic Electrical Power Generation held at Salzburg in July 1966, which might well represent an important contribution to the industrial development of that method of power generation.

12. The International Centre for Theoretical Physics at Trieste had been yielding some highly promising results, and at the Board's meetings in June there had been general agreement to increase the Agency's contribution to the cost of operating the Centre in 1967. However, the time had come to

make a thorough examination of all factors bearing on the future of the Centre, and the Austrian delegation favoured the six-Power draft resolution requesting the Director General to initiate negotiations with all the interested parties 4).

13. The Austrian Government greatly appreciated the excellent work done by the Director General and his staff during the past year. It was proud to be the host to an international organization which pursued such a noble aim and which served the interests of international co-operation so well. In his statement at the 101st plenary meeting the Director General had pointed out, in his friendly references to Austria, that the agreement between the Austrian Government and the Agency concerning the temporary headquarters of the IAEA had thus far operated very satisfactorily. The time might now have come to consider whether the present provisional arrangement should be transformed into a definitive one, and the Austrian Government was already in contact with the Director General on the subject.

14. The Agency had reached a vital point in its development. It was already playing a decisive part in ensuring that atomic energy became more and more a factor promoting the economic and social welfare of humanity, and it must now be ready to assume the responsible functions that might be entrusted to it in connection with general disarmament. The Austrian Government felt that, after nearly ten years of activity, the Agency had amply fulfilled the great hopes that had been placed in it at the time of its inception, and was certain that it would continue to merit the confidence reposed in it.

15. Mr. TÉTÉNYI (Hungary) extended his delegation's greetings to the delegations to the Conference and hoped that the tenth anniversary session would be a successful one.

16. An evaluation of the Agency's development, especially against the background of the circumstances that had attended its establishment, justified the impression that it had made positive progress. Considering the original efforts of one Power to maintain a monopoly in nuclear weapons for itself, the very fact of the establishment of the Agency represented the collapse of those endeavours and a significant advance in the peaceful uses of atomic energy. It had been for only a very short period that atomic energy had served as a means of blackmail in the "cold war". At present, and thanks in part to the activities of the Agency, it was emerging as a tool for improving the life of man.

17. The Hungarian People's Republic, one of the founding States of the Agency, was doing everything in its power to ensure that its activities were in line with the objectives laid down in the Statute. It was concerned only with the use of nuclear energy for peaceful purposes. The number of Member States with the same concern was increasing steadily. As a result of the liquidation of the colonial system, a number of new States were emerging and playing an ever greater part in the work of the international organizations. The Hungarian delegation wished to welcome the four new Member States: Jamaica, Jordan, Kenya and Panama.

18. One of the most important indices of the Agency's activities was the assistance it extended to developing countries in matters relating to nuclear technology and nuclear power.

19. The number of Member States had risen to 96 and the Agency could soon become a universal organization. However, owing to the discriminatory policy of certain Powers, a number of States were unable to take their places as Members of the Agency. As a result, the organization was deprived of the active collaboration of countries which had made significant achievements in the peaceful uses of atomic energy.

20. The use of atomic energy had to be controlled, and the Agency's safeguards system was being applied to prevent its use for military purposes. The extension of Agency safeguards to reprocessing plants was technologically defensible but the safeguards system had not yet been fully perfected and was not an adequate means for preventing further proliferation of nuclear weapons. However, application of the system could yield useful experience for the subsequent elaboration of a universal control system. It was very important to determine to what extent the system could be used to help to ensure general international security. That problem was particularly important in Europe. His delegation therefore welcomed the action of the Governments of Poland 5) and Czechoslovakia 6) which had offered to place their nuclear facilities under Agency safeguards on condition that the Federal Republic of Germany did so as well. More especially, it welcomed the telegram addressed to the President of the Conference by the Government of the German Democratic Republic, stating that in the interests of European peace and security and the development of intra-European co-operation, the Government of the German Democratic Republic deemed it necessary that both German States, on the basis of sovereign equality, should accept the Agency's Safeguards System (1965) and, on condi-

4) GC(X)/COM.1/98/Rev.1.

5) GC(X)/OR.103, para. 56.

6) GC(X)/Or.104, para. 13.

tion that the Federal Republic of Germany declared its acceptance of the system, was itself prepared to accept it, for which purpose it would have to be admitted to the membership of the Agency. 7)

21. There were certain individual aspects of the Agency's activities which he wished to discuss. The Board's annual report to the General Conference was concerned mainly with the question of nuclear power and rightly so, because in the period that had elapsed since the Third Geneva Conference nuclear power had been playing an ever greater part in the power-generation planning of certain countries. The Agency could play a significant role in that respect by lending assistance in specific economic calculations and by helping the developing countries in the choice of reactor sites and types and the training of scientists.

22. As a result of the growing number of nuclear power stations, the problem of radioactive waste was becoming acute. So far the problem had not been solved and it could not, of course, be solved by the Agency's small research group at Monaco. The Agency could set itself the task of acting as an organizer and co-ordinator of the very varied research work being carried on in that field by different countries and it could enlist the collaboration of the big nuclear Powers. It could also work towards the establishment of more specific international rules and regulations in that regard. The portion of the Board's report dealing with radioactive waste (paras. 166-176) made mention of important successes, but the measures which had been taken were still insufficiently related to the special requirements of nuclear power, even though methods of processing and storing waste were a significant factor in the economics of electric power stations.

23. The Hungarian People's Republic was devoting increasing thought to nuclear power, especially in view of the fact that preparatory work had begun on the construction of a nuclear power station which would have a total capacity of 800 MW and be powered by a water-cooled, water-moderated reactor of the Novo-Voronezh type. Studies on reactor designs and costing were also under way, some of them in conjunction with the Agency under the research contract programme.

24. A great deal of attention was being paid in Hungary to applications of isotopes and sources of radiation. In the opinion of his delegation, that was a subject in which the Agency could lend extensive practical assistance to the developing countries.

25. Significant progress had been made in Hungary during recent years in the production and use of isotopes. Some 200 different organic and inorganic isotopic preparations were being manufactured in the country. The figure for isotope shipments in 1965 had been about 5000 lots. Isotope production had received new impetus with the completion of construction work on a large laboratory, built in accordance with the latest health requirements. The laboratory had been visited and inspected by the Director General and other members of the Secretariat. Hungary was prepared to make available to any other country, through the Agency, the experience it had gained in the construction of the laboratory.

26. As far as isotope applications in medicine were concerned, much attention was paid to the further development of diagnostic methods. Isotopes were being used extensively in Hungary in research on diseases of the thyroid gland, the liver, the kidneys, the stomach and the spleen, and in studies on haemopoiesis, basal metabolism etc. The more extensive use of those methods was attributable to the successful production during the preceding two or three years of 34 preparations, involving 12 isotopes, for use in diagnostic work.

27. Hungary was prepared to lend assistance to the developing countries in matters relating to the medical uses of isotopes. But the Agency, too, was playing a growing role in that work by standardizing requirements with regard to preparations and by organizing controls to ensure compliance with those standards.

28. In the opinion of the Hungarian delegation, the Agency was not doing enough in the matter of the industrial uses of isotopes. In particular, too little consideration was given to lending the developing countries practical assistance in problems of nuclear geophysics. It was unlikely that the situation would improve during the coming years. The Budget for 1967 8) showed that considerable shifts were being made in funds allocated from the Operational Budget, but the additional funds which became available would be distributed exclusively between the agricultural and medical sectors.

29. The Hungarian delegation considered that a rational yardstick must be found for increasing the Agency's expenditures. The Agency's tasks and the scope of its activities were increasing steadily but that should not lead to an excessive and unlimited increase in outlay.

7) For the full text of the telegram see document GC(X)/INF/91.

8) GC(X)/333.

30. He had high regard for the Agency's work in organizing its various conferences, symposia and panels and found it contradictory that budgetary allocations for the organization of such meetings were being reduced while the number of staff members in the Secretariat was being increased.

31. The Hungarian delegation noted that the Agency had become an organic part of international life, a qualified body which played an indispensable part in regard to the peaceful uses of atomic energy. Great importance attached to improving the operations of the Secretariat, and especially to the leadership of the Director General. Fellowships, scientific undertakings, active participation in the organization of the Second and Third Geneva Conferences on the Peaceful Uses of Atomic Energy, the preparation and elaboration of vital international agreements relating to the uses of atomic energy, the initiation and co-ordination of international scientific research programmes — all those things were characteristic aspects of the Agency's work and demonstrated the value of its activities.

32. The Agency could perform effective work only on the basis of broad international co-operation in which every State could take part, regardless of its social and political structure. However, the prerequisite for such co-operation was mutual trust and a satisfactory international climate. The Moscow agreement of 1963 prohibiting the testing of nuclear weapons in the air, in space and under water had had a beneficial effect on every sphere of international life, including the work of the Agency. Events that had taken place since that time had led to a change for the worse in the international atmosphere. U Thant, the Secretary-General of the United Nations, had expressed concern in his message because he felt that the world was moving in the direction of a third world war. The aggression of the United States in Viet-Nam, along with the increasingly dangerous extension of the dirty colonial war, conjured up the spectre of a thermonuclear world war.

33. There was no need to provide any special proofs of the positive attitude of the Hungarian Government towards the work of the Agency. However, no one could fail to see that the facts which he had just mentioned could poison the atmosphere in the Agency as well. He hoped that the Agency would pass successfully through that difficult period. By promoting ever wider international co-operation in the peaceful uses of atomic energy, the Agency was contributing to better understanding among the peoples of the world.

34. Mr. CHOONHAVAN (Thailand) said that his delegation welcomed the growth in the Agency's activities since Thailand had joined the Agency and noted with satisfaction that the spirit of co-operation in the field of atomic energy among Member States

had become increasingly cordial, thereby undoubtedly facilitating the Agency's task.

35. It was well known that Thailand had endorsed the principles of the Agency's safeguards system from its inception. Thailand would support the extension of the Agency's safeguards to reprocessing plants. It also endorsed the Agency's valuable efforts to familiarize countries in the areas of South East Asia and the Far East with the economic aspects of the use of radiation and radioisotopes.

36. His delegation wished to state, as it had the year before, that some action should be taken to increase the Agency's Operational Budget so that its technical assistance programme would be of real benefit, especially to developing countries.

37. It had been a privilege for Thailand to act as host to the Agency's Regional Seminar on Health Physics and the Inter-regional Advanced Training School on the Medical Applications of Radioisotopes in Bangkok. His delegation supported the selection of Bangkok as an important base for the Agency's Regional Advisers and Regional Officer and would welcome the Agency's co-operation in making Thailand's Atomic Energy Centre serve the region. Thailand would continue to support the Agency in its programmes.

38. His delegation wished to congratulate the Director General and Secretariat on their very successful achievements in all aspects of their work.

39. Mr. McCORDICK (Canada) said that as it was two years since his delegation had contributed to the general debate, he thought it might be of some interest if he briefly outlined the more important recent developments in the Canadian nuclear programme, with special reference to those broad areas in which Canada's interests were related to those of the Agency and of developing countries.

40. The first Canadian nuclear power station on a fully commercial scale, situated at Douglas Point, Ontario, and using a 200-MW(e) pressurized heavy-water reactor, would be in service before the end of the year. In addition, the largest Canadian electric utility company had embarked on the construction, near Toronto, of a major nuclear power station employing two reactors of the natural-uranium, pressurized heavy water type, scheduled to go into service in 1970 and 1971. The design would permit expansion of the station from an initial capacity of 1000 MW(e) to at least 4000 MW(e). A second major public power utility, in the Province of Quebec, had also decided to enter the nuclear field. The proposed station, which was scheduled to enter into operation in 1971, would generate 250 MW(e) and would be based on a reactor using heavy water as moderator but boiling water as

coolant. In order to provide for the expanding needs of the Canadian nuclear power programme, two large plants for the production of heavy water were also under construction.

41. On the research front, important information about power reactors moderated by heavy water and cooled by organic liquids would be provided by a 40-MW engineering test reactor which had come into operation in 1965.

42. Altogether Canada had eight research and power reactors in being and four under construction or committed to construction, with a thermal rating totalling over 500 MW. Moreover, Canadian designed reactors were now widely recognized abroad as well suited for the needs of a good many countries that were on the verge of embarking on a nuclear power programme. Two such reactors were already under construction, one in India and the other in Pakistan. With those and the power reactors in Canada, the capacity of Canadian-designed reactors would soon exceed 1750 MW(e).

43. Turning to the Agency's own achievements, he felt there was every reason to congratulate it on a job well done. There was, he thought, general agreement that the Agency had amply demonstrated its capacity to serve the international community in a wide variety of ways in an area of vital and increasing importance, and that its usefulness and authority were growing steadily with each passing year. In his opening address <sup>9)</sup>, the Director General had made some excellent suggestions for working out a programme which would meet the priority needs of developing countries. The Canadian delegation would study those suggestions, as well as those made by other delegations, with great care, and looked forward to co-operating in formulating a constructive programme for the future. Without mentioning all those areas where the Agency was making an important contribution, he wished to single out a few specific activities to which his delegation attached particular importance.

44. In the first place he expected the Agency to have an increasingly worthwhile part to play in the field of nuclear power, particularly in helping Member States to determine when and how they should embark on a nuclear power programme. He believed the Agency had clearly recognized its uniquely important and sensitive position in that field. A related problem of particular importance to many developing countries, and one in which the Agency was properly becoming increasingly interested, was the use of nuclear power for desalting water.

45. He also believed the Agency had an important contribution to make in regard to the extremely

complex problems created by the "information explosion". New methods, such as those provided by the computer sciences, were essential if the storage and retrieval of technical information were to be organized in the most rational and effective manner. The major technically advanced countries had already made considerable efforts to transfer to other countries the fruits of their conventional information systems. The Agency could play a key role in harmonizing and co-ordinating those efforts with a view to avoiding duplication of effort between Member States and between individual scientists. On the other hand, great care must be taken in deciding how far it was appropriate for the Agency to play a major operational role in that field and how much of its resources could reasonably be devoted to it.

46. A related field where there was a worthwhile job of international co-ordination to be done, likewise requiring wisdom and discretion, was the international exchange of nuclear data. There too the Agency had already begun to make a definite contribution, which would become increasingly important, given continued co-operation from all concerned.

47. In accordance with its general policy of support for international efforts to avoid the proliferation of nuclear weapons, Canada had undertaken to supply nuclear materials to other countries for peaceful purposes only, and subject to proper safeguards. It had therefore derived particular satisfaction from the manner in which the Agency was fulfilling its statutory responsibilities in regard to the development and application of a system of international safeguards and was encouraged by the growing extent to which Members were resorting to the Agency's services in that respect. It believed that with the great expansion in the use of nuclear energy which was bound to occur soon throughout the world, that aspect of the Agency's work would assume ever greater significance. It should also be borne in mind, as the Director General had indicated, that the progress made with regard to safeguards was of direct relevance to the attainment of the objectives towards which the Eighteen-Nation Committee on Disarmament was striving in Geneva.

48. In accordance with its policy of transferring to the Agency responsibility for administering the safeguards embodied in bilateral arrangements to which it was party, Canada had on 20 June 1966 signed the first such transfer agreement with the Agency and the Government of Japan. In order to assist the Division of Safeguards and Inspection in carrying out its duties, it had also informed the Director General that it would henceforth notify him on a regular basis of Canadian transfers of nuclear material to other countries, and hoped that other States would find it possible to take similar action.

9) GC(X)/OR.101, paras. 28 to 54.

49. The Agency was to be commended for its efforts to refine the safeguards system to meet the practical requirements of the expanding nuclear power industry. It should be encouraged to continue the technical side of its safeguards work, with particular emphasis on the development of methods for applying safeguards with the maximum efficiency and effectiveness, so as to ensure that existing techniques did not become outdated or prove inadequate in the light of experience and the rapidly increasing commitments with which the Division of Safeguards and Inspection would be faced.

50. Canada fully supported the Budget for 1967 and the Director General's efforts to avoid wasteful expenditures. It was, however, anxious lest undue budget paring be carried out at the expense of a desirable measure of health and growth in the programme. It believed that the programme of every organization within the United Nations family should be assessed on the basis of its content, its quality, the priorities assigned to various activities in relation to the overall objectives and the organization's capacity to execute the programme. The Agency was to be commended for attempting to plan ahead, since that enabled Member States to ensure that the most effective use was made of both human and material resources. The Canadian delegation would always be willing to give sympathetic consideration to constructive ideas for improving the programme and enabling the Agency to play an even more realistic and fruitful role than in the past.

51. In conclusion he wished to express his Government's appreciation and gratitude for the helpfulness and generous hospitality displayed by the Austrian authorities.

52. Mr. YUN (Republic of Korea) expressed his delegation's appreciation to the Director General, the Secretariat and the Members of the Board of Governors for the efforts they had made.

53. The Korean Office of Atomic Energy now comprised three institutes. The Atomic Energy Research Institute, established in 1959, had undertaken fundamental and applied research with a TRIGA Mark II reactor, which had gone critical in March 1962. The Radiology Research Institute, established in November 1963, had made a remarkable contribution to cancer treatment with its cobalt-60 therapy unit. Finally the Radio-Agricultural Institute, previously a division in the Atomic Energy Research Institute, was assisting with the Government's agricultural modernization programme. As far as nuclear power was concerned, a preliminary survey mission for the Agency had visited Korea in October 1963, and a further Agency mission had been invited in June 1965 to advise on the siting of a nuclear power station. As a result of the mis-

sion's work, the conclusion had been reached that nuclear power would be competitive in Korea, and three locations had been chosen as promising sites. A power survey mission had consequently been sent from the Korean Office of Atomic Energy to various countries from May to July of the current year with a view to presenting recommendations on the basis of which the Government could draw up a more detailed project. If it was to succeed in its aim of constructing a 300-MW power reactor by the mid-70's, it would still need a great deal of assistance and co-operation from other Members of the Agency.

54. His first suggestion regarding the Agency's work was indeed that it should pay special attention to nuclear power so as to help meet the growing gap between power supply and demand, particularly in the developing countries, where local power resources were for the most part inadequate and living standards were rising rapidly. For instance it might be advisable to set up some sort of standing technical commission to promote and co-ordinate technical assistance in that field.

55. Secondly, the Agency should also promote co-operation in regard to the use of nuclear energy for water desalination and the utilization of underground water.

56. Thirdly, his delegation appreciated the various forms of technical assistance which developing countries received through the Agency, but pointed out that it was essential that any equipment which was to be used by an expert should arrive at the same time as he did.

57. While the services of foreign experts were valuable, it was even more important to train national scientists and engineers, and retain their services once they were trained. In that connection he suggested that trainees accepted for training abroad should be notified of their acceptance, and where they were going, far enough in advance for them to be able to brush up the foreign language they would be using.

58. Korea had already been awarded eight contracts under the Agency's research contract programme and had applied for a further five. There was no doubt that the award of contracts to the developing countries provided valuable encouragement to their research laboratories and other academic institutes.

59. Finally he suggested that to facilitate the exchange of technical information in that area, the Agency's Regional Office for Asia and the Far East be given more money, a larger staff and wider powers.

60. Mr. PASECHNIK (Ukrainian Soviet Socialist Republic) said that his delegation warmly congratulated the Agency on the occasion of the tenth anniversary session of the General Conference and wished it great success in its future activities.

61. During the past decade the Agency had taken a definite step towards achieving its basic aim. Its work in convening international scientific conferences, symposia, courses and seminars, publishing conference proceedings and review articles and taking measures to promote the flow of scientific information deserved special attention.

62. The fact that in recent years the Agency had doubled its membership indicated the growth in its international authority. His delegation welcomed the admission to the Agency of developing countries in Africa, Asia and Latin America.

63. During the past decade a number of countries had accumulated vast technical experience in the use of atomic energy, and the economic justification for building atomic power plants had been fully proved not only in remote areas and areas poor in fossil-fuel resources, but also in advanced industrial centres. The peaceful atom was moving across the world with gigantic strides. Whereas at the time of the First International Conference on the Peaceful Uses of Atomic Energy 10) only one atomic power station, with a capacity of 5000 kW, had been operating — that first atomic power station in the world had been in the Soviet Union —, by the beginning of the Third Geneva Conference the installed capacity of atomic power stations had attained almost 5 million kW; and now it was 8 million kW. A good deal of experience had been accumulated in the use of atomic energy for transport purposes and for providing heat; large atomic installations had been constructed for water desalination, an example of which was the plant in the Soviet Union near the fort named after the Ukrainian poet, T.G. Shevchenko. It could be said with confidence that the use of nuclear energy in spacecraft would also lead to a revolutionary leap forward in the conquest of outer space.

64. The work done in the Ukrainian Soviet Socialist Republic showed what a huge saving was secured by the application of isotopes in the mining, iron and steel and shipbuilding industries, and in the production of synthetic materials.

65. That was all evidence of the fact that nuclear scientists had not only opened the door to vast power resources, new materials and means of automation and control, but had also acquired the

practical know-how and overcome the technical obstacles to the extensive use of the energy from nuclear fission to improve the well-being of nations and to satisfy man's material and spiritual needs. The time was not distant when man would also be able to use the energy of nuclear fusion to satisfy his power requirements.

66. He noted with regret that the use of nuclear energy in the interests of peace and prosperity was considerably impeded by the nuclear arms race.

67. On the basis of its peaceful policies, the Government of the Ukrainian SSR emphatically supported the banning of atomic weapons and the destruction of all stockpiles thereof. The Ukrainian delegation associated itself with those delegates who in their statements had emphasized that the task of prohibiting atomic weapons was particularly urgent at the present time, when the United States militarists were expanding the aggressive war in Viet-Nam and when peace was being seriously threatened by the aggressive forces of the United States.

68. The prevention of the further proliferation of nuclear weapons and the achievement of agreement on the prohibition of underground nuclear weapon tests would open up new opportunities for a still broader development of international co-operation in the use of atomic energy for peaceful purposes.

69. In the Ukraine great importance was attached to the development of nuclear power as the power of the future. However, the special features of the national economy had to be taken into consideration at the same time.

70. As was well known, the Ukrainian SSR possessed vast power resources. Its industry was based on the use of its own coal, oil and gas. Thus, under the current Five-year Plan, it was not intended to increase the power resources of the Ukraine through the construction of new nuclear power stations.

71. Attention was being focussed above all on basic research as the foundation of the new technology and also on the extensive use of isotopes and nuclear radiations in the national economy.

72. Ukrainian scientists considered that further progress in the use of intra-nuclear energy was linked with the development of nuclear theory and the study of the nature of nuclear forces, the structure of the nucleus and the interaction of neutrons with nuclei and matter. The Ukraine's research programmes embraced a wide range of problems in that field. To fulfil those programmes, Ukrainian scientists and engineers had devised and

10) Held at Geneva from 8 to 20 August 1955.



brought into operation a 2-GeV electronic linear accelerator. They had electrostatic generators, proton linear accelerators, multiply-charged ion accelerators and powerful gamma-radiation sources; a large isochronous cyclotron and other nuclear facilities were being built.

73. The VVR-M research reactor with a neutron flux of  $10^{14}$  neutrons/cm<sup>2</sup>.sec, introduced in 1960, was being used primarily for research in neutron physics, radiation biology and chemistry, solid-state physics and the study of materials and reactor physics.

74. The Ukraine was glad to provide foreign scientists with the opportunity to work in its installations, and at the recently established Institute of Theoretical Physics of the Ukrainian SSR Academy of Sciences in Kiev half of the total staff would consist of foreign scientists.

75. Great importance was attached to exchanges of scientists. In recent years a number of joint projects had been carried out by Ukrainian scientists and scientists from France, Italy, the United Arab Republic and the United Kingdom, in both Ukrainian and foreign laboratories. Scientists from the Ukrainian SSR had, as was well known, taken an active part in scientific conferences convened by the Agency. They expected to continue their active participation in the Agency's projects.

76. After examining the Board's report on the Agency's work in 1965-66, the Ukrainian delegation substantially approved the main trend of the Agency's activities, which were playing a definite part in providing countries with assistance in the peaceful uses of atomic energy and facilitating the international exchange of experience in the realms of pure science and industrial practice. At the same time he wished to stress that the Agency's activities would be much more successful if the atom finally cast off its military uniform and imperialistic aggression were abandoned for ever.

77. It would be incorrect, however, to attribute the defects in the Agency's activities solely to the aggravated international situation. Many defects could be avoided if the Agency and its Secretariat were guided strictly by the Statute and the relevant decisions of the General Conference.

78. His delegation considered it inadmissible for example, that in a number of cases the Secretariat had taken action without obtaining specific instructions from the Board of Governors. The Statute dealt in unequivocal terms with the question of the relations between the Board and the Secretariat, on the basis that it was the Board which, in the period between sessions of the General Conference, bore the entire responsibility for the

Agency's actions. That was an important matter of principle.

79. The Ukrainian SSR, like all the socialist States Members of the Agency, had attached and was continuing to attach great significance to the provision of technical assistance both within the framework of the Agency and under bilateral agreements between countries. The Ukraine, as was well known, was participating in the joint programme of assistance under which the socialist countries were making medical radiological centres available through the Agency. Such centres were being supplied to Morocco, Pakistan, Iraq, Burma, Algeria and Afghanistan. Deep satisfaction could be felt that that specific kind of technical assistance had aroused such interest on the part of the developing countries. However, no less profound surprise was aroused by the fact that some members of the Agency's Secretariat did not acknowledge the provision of equipment as constituting technical assistance. That much emerged from the report on the technical assistance provided by the Agency from voluntary contributions. In that report there was no mention of the assistance offered or even already provided by the socialist countries. The report only considered assistance in the form of money. No formalistic pretexts could justify such an approach to technical assistance. That approach was leading in practice to a diminution of the opportunities for developing countries to obtain technical assistance through the Agency, was in effect worsening the conditions for obtaining such assistance, and was impeding the economic progress of the countries in question. It was absolutely impossible to agree with such an approach.

80. In that connection he wished again to raise objections to the grant of technical assistance to South Korea, South Viet-Nam and Taiwan. Such action was all the more inadmissible now that those countries were taking a direct part in the United States' aggression in South-East Asia, and thereby sharing the responsibility for the dangerous increase of tension in the world. Under such conditions the Agency's assistance served aims directly opposed to those laid down in the Statute and involved the Agency in the suppression of movements of national liberation, what amounted to undermining the very basis of peaceful co-operation between States.

81. His delegation would urge the Agency's Secretariat to submit to the General Conference documents which gave not merely a factual account of the current position with regard to the matters in question but showed how the directives contained in the Statute and the decisions of the General Conference were being implemented in practice. That applied above all to the staffing policy pursued by the Secretariat. It would certainly be interesting

for the Conference to know how, in particular, Agency inspections were carried out, who was conducting them, and what Members of the Agency provided inspectors for that responsible work. In the recruitment of inspectors it was particularly important to observe the principle of equitable geographical representation, so as to secure maximum impartiality in the conclusions reached by inspectors.

82. His delegation could in no way agree to the Ukraine being without a single post in the Secretariat. He would recall, in that connection, Article VII.D of the Statute, which stated that in the recruitment and employment of staff and in the determination of the conditions of service, in addition to professional competence, "due regard shall be paid to the contributions of Members to the Agency and to the importance of recruiting the staff on as wide a geographical basis as possible". He hoped that the Director General would take the necessary action to rectify the position.

83. In conclusion, he wished to refer to certain proposals put forward by delegates. Great importance was attached to the initiative taken, in connection with Agency safeguards, by the Czechoslovak Socialist Republic and the Polish People's Republic.

84. His delegation also associated itself with the request by the Czechoslovak and Hungarian delegations that the Secretariat circulate as a General Conference document the text of the telegram addressed to the President by the Government of the German Democratic Republic on the subject of Agency safeguards.

85. Sir William PENNEY (United Kingdom) said he would not comment on the political issues raised by some delegates, since such matters did not lie within the province of the Agency. The tenth anniversary was important: it had provided the opportunity for distinguished men to survey the Agency's progress. The steady increase in membership showed the confidence inspired by the Agency's activities, and he welcomed Uganda and Singapore as new Members.

86. Within the limited funds available the Agency had achieved a great deal. It had wisely decided to disseminate knowledge and promote techniques and skills in as many countries as possible. The training of scientists and the provision of the services of experts, equipment and impartial advice on a wide variety of subjects had been of great benefit. In using atomic energy, particularly for power production, great care had to be taken to ensure that radioactivity did not lead to harmful consequences. Since that had been generally realized, there had been remarkably few accidents in the nuclear industry

and the Agency's health and safety standards had played a very useful role in that respect. Its regulatory functions, developed with the assistance of many Member States, had gained wide acceptance.

87. A particularly notable achievement was the development of a rational and flexible safeguards system which would meet gradually changing requirements; the United Kingdom would continue to support the system and to co-operate with the Agency in improving, when necessary, the procedures involved.

88. Commenting on the progress made in the United Kingdom, he pointed out that power stations were now an accepted part of the electricity generating system. The total operating nuclear generating capacity was nearly 4 million kW and a further 3 million kW of capacity was under construction. By 1975, nearly one quarter of the electricity used would be generated in nuclear power stations. For the most part, gas-cooled graphite-moderated reactors were used, but within the next year a 100-MW(e) SGHW reactor would be operating at Winfrith. The reactor was a pressure-tube, heavy- and light-water system whose design, embodying a number of interesting features, would allow flexibility in the choice of fuel cycle. Also at Winfrith was the High Temperature Reactor Project, "Dragon", in which a number of countries participated under the auspices of the European Nuclear Energy Agency. In the previous month, the "Dragon" reactor had successfully completed its first long run of fullpower operation at temperatures substantially higher than those so far attained by any other power reactor in the world.

89. Two very important decisions, which reflected confidence in the future of nuclear power, had been taken in the United Kingdom within the past year. First, the Government had decided to re-activate and modernize the diffusion plant at Capenhurst in order to ensure an adequate supply of enriched uranium for the next generation of civil reactors. Secondly, it had been decided, as a result of experience gained with fast-breeder reactors, to construct a prototype fast reactor at Dounreay, and it was expected that that 250-MW(e) sodium-cooled prototype would reach criticality in 1971. Sub-assemblies, each containing 77 fuel pins, with a mixture of plutonium and uranium oxide clad in stainless steel, had been irradiated to peak burn-ups of 7%; sub-assemblies designed to achieve higher burn-ups were already being tested. Good progress was also being made with regard to core physics, sodium technology and components. The economic benefits of incorporating a well-engineered breeder reactor into a nuclear power system needed no emphasis.

90. A special-purpose cyclotron was now being used in the United Kingdom exclusively for the

production of neutron-deficient isotopes, and its ancillary equipment permitted rapid and safe handling of the radioactive products. The production of sodium-22 and several other isotopes, started in May, was steadily increasing. Progress was also being made in the use of scanning agents for medical purposes, low-energy gamma-emitters for gauging and non-destructive testing in industry, and labelled nucleic-acid components and other compounds for research in molecular biology.

91. Turning to the Agency's achievements during the past year, he said the devising of special procedures for safeguarding reprocessing plants was an important step, and he congratulated all concerned, particularly Dr. Randers, Chairman of the Working Group which had drafted the necessary provisions. It was gratifying that the Agency was dealing with the difficult problem of safeguards in a realistic and scientific manner. In that connection the agreement between the Agency and the United Kingdom on the safeguarding of the Bradwell Nuclear Power Station — the largest plant in the world subject to safeguards — would provide the Agency with very valuable experience; one of the interesting problems for inspectors was the fact that fuel could be changed at any time without taking the station off load.

92. He was pleased to note that in 1965 nearly 60 countries had been provided with technical assistance. The United Kingdom had made voluntary contributions every year for that purpose and had accepted many Agency fellows — 37 during the past year. The United Kingdom was pledging a voluntary contribution of \$110 000 for the coming year and would continue to provide experts and places for fellows.

93. The best use of Agency funds was of concern to all. Sometimes a regional or international centre — such as the Centre for Theoretical Physics at Trieste — was the best means of meeting a particular need. A centre of that kind, assisted by Agency funds, could attract high-quality staff from the outset. As regards future financial support for the Trieste Centre, the United Kingdom reserved its position until the Board had received a report on the first two years' work at the Centre and the Director General had reported on alternative sources of finance. With a view to using funds to the best advantage the Agency should also continue to increase its co-operation with the specialized agencies; that had been borne out by the work done by the Joint FAO/IAEA Division of Atomic Energy in Food and Agriculture.

94. He hoped serious consideration would be given to the suggestions made by the Representative of the Secretary-General of the United Nations and by several delegates to the effect that biennial bud-

geting should be introduced, and that the General Conference should be held every two years. The Statute would need some amendment, but biennial programming was already established, and the Secretariat had been asked to incorporate in each year's draft budget a preliminary estimate of expenditure in the following year. He questioned whether it was necessary, at the present stage in the Agency's development, to spend 2 1/2 % of the Regular Budget and ask delegates and the Secretariat to spend so much time on the present type of annual conference.

95. The United Kingdom fully supported the Agency's important task of stimulating the acquisition and dissemination of new knowledge and indeed had contributed about an eighth of the papers submitted to Agency conferences and symposia over the last five years.

96. With regard to the future he was confident the Agency would play an important part in promoting the peaceful uses of atomic energy. Its programme for 1967-68 set out activities which the Agency could properly carry out during that period and the resources available had been sensibly apportioned between them.

97. The Director General and the Secretariat deserved praise for their past achievements, and the United Kingdom would help them to continue the good work; it would examine their proposals in a constructive spirit and was confident that, during the next decade, the Agency would maintain its paramount position as the international focal point in all matters pertaining to the peaceful uses of atomic energy.

98. Mr. GANEV (Bulgaria) expressed his delegation's gratitude to the Austrian Government and the Vienna municipal authorities for their hospitality.

99. Tribute must be paid to the efforts made by the Agency to disseminate the scientific and technological advances made in the peaceful uses of atomic energy.

100. The Agency should regard it as its abiding task to fight for a ban on nuclear weapons. His delegation would therefore welcome any step taken in the spirit of the Agency's Statute to contribute to a solution of that problem.

101. The initiative taken by the Polish and Czechoslovak Governments in regard to safeguards was designed to introduce important new factors into the Agency's safeguards work which would help to prevent the use of nuclear energy for military purposes. The socialist countries' proposal in that respect had found a positive response throughout the world. It was however a striking fact that the

reaction in Bonn had been unfavourable. It had been stated in the Press that the Government of the Federal Republic of Germany considered that it was unnecessary and inopportune to raise the question of placing the Federal Republic's nuclear facilities under Agency safeguards. The fact that it had adopted that attitude to the socialist countries' proposal showed that ruling circles in the Federal Republic still wished to have access to nuclear weapons and did what they could to prevent an agreement on the non-dissemination of such weapons.

102. The Bulgarian delegation associated itself with the Soviet and Czechoslovak delegations' request that the President should circulate the German Democratic Republic's important declaration on safeguards.

103. The Agency's programme, which had been drawn up on the basis of the long-term programme that had been adopted (11), had also taken into account subsequent developments in nuclear science, nuclear technology, physics and chemistry. The Agency was now devoting greater attention to questions of nuclear power, water desalination and the use of radioisotopes in industry.

104. He welcomed the Agency's efforts to intensify and extend the use of radioisotopes in various branches of science and attached great importance to its work in spreading knowledge on the progress made in the use of radioisotopes in industrial undertakings in the Soviet Union, Czechoslovakia, France and the United Kingdom.

105. In Bulgaria radioisotopes were used in several branches of industry and, more particularly, in geological surveying. Great attention had recently been paid to the use of radioisotopes in agriculture and a national conference on that subject would be held on 29 and 30 November.

106. In view of the ever wider use made of radioisotopes and the increasing number of power and research reactors it was essential that the Agency should give the most careful attention to the question of nuclear safety. It had indeed already done useful work in regard to the transport of radioactive materials.

107. Another important question was the storage of radioactive waste, particularly now that many States, including Bulgaria, were planning to build nuclear power stations. As was well known, the treatment of radioactive waste from nuclear power stations differed from the treatment of radioactive waste from nuclear research centres. In that con-

nection his delegation could only congratulate the Agency on its efforts to make effective methods of radioactive waste treatment known to a number of Member States. The increased quantity of highly radioactive waste confronted the Agency with another problem, that of waste disposal.

108. The Bulgarian delegation reaffirmed its view that the Agency's Laboratory was carrying on work that had no direct connection with the aims and purposes of the Agency. Such work resulted in an exceptional increase in the Laboratory's budget, which was 15.5 % higher than in the previous year.

109. Scientific conferences and symposia were of great benefit, though closer co-ordination of the Agency's activities with those of certain of the specialized agencies of the United Nations would obviate some duplication and make for a more coherent programme.

110. The Agency's work on the training of scientists, the dispatch of experts and, more especially, the supply of equipment and material was also useful. It must be pointed out however that the demand for technical assistance was growing faster than the funds available to satisfy that demand. Clearly some satisfactory solution of that problem must be found, particularly in view of the fact that assistance was most useful when it took the form of the supply of equipment and material. Several of the developing countries already had trained scientists and it was not always necessary to send experts at the same time as supplying equipment. Even if experts were needed, the duration of their missions could be substantially reduced; that would make it possible to increase considerably the amount of equipment and material supplied. In that connection his delegation considered that the Agency should increase the allocations for the supply of material and equipment rather than reducing them as was proposed in the budget, where they were reduced from 22 % to 14 % of the whole.

111. Though his delegation had no doubt that in drawing up the Agency's programme the Secretariat had tried to cut down on unnecessary expenditure, it could not avoid noticing that a considerable increase in staff was proposed.

112. Almost one-third of the administrative posts were held by staff members with permanent contracts, and many others had signed long-term contracts. He feared that in such circumstances the principle of equitable geographical distribution was not fully observed.

113. In his delegation's view the budget increase, amounting to more than 8 %, was a considerable one. It was due mainly to an increase in the

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expenditure for the Laboratory, an expansion in its activity and the salary increases for the staff. Other expenditures which his delegation regarded as incompatible with the aims and purposes of the Agency were those arising from the application of Agency safeguards in relation to bilateral arrangements. His delegation was not in principle opposed to such safeguards. However, expenditure resulting from their application should be borne by the two countries concerned.

114. To conclude, the Agency, notwithstanding its narrow specialization, could fulfil its purpose only in conditions of peaceful co-existence and observance of the principle of non-intervention in the internal affairs of other States, not in conditions where one great Power was engaged in aggression against a peace-and freedom-loving people. He was deeply convinced that the Agency must inevitably accept, the view that it must adopt a clear and definite attitude to the question of nuclear weapons, and that that attitude was unambiguously expressed in the Statute, which laid down that atomic energy must be used for the welfare and benefit of mankind.

115. Mr. OTERO NAVASCUES (Spain) congratulated Sierra Leone, Singapore and Uganda on their admission to the Agency.

116. During the past year, collaboration between the Agency and Spain had continued. In particular fellowships had been made available to the Agency, and had been used by students from four countries, and Spanish scientists and technicians had acted as Agency experts in various countries. His delegation would be glad if that collaboration could be extended to the scientific and technical staff of the Secretariat. As things stood, there was a tendency for particular areas and countries to have an excessive number of posts allotted to them. As for Spain, it had had only one of its scientists working for the Agency during the past four years.

117. Spain had agreed to accept the application of the Agency's safeguards system in relation to the bilateral agreement which had been concluded with the United States of America and which was shortly to be applied for the first time to the construction and operation of two power plants with a total power of 613 000 kW. His country considered that the acceptance of safeguards, in relation to both bilateral and multilateral arrangements, constituted a first step on the part of the smaller countries, which agreed to accept the absence of reciprocity in the hope that the major Powers would soon be able to reach agreement on the universal application of safeguards to all nuclear installations with the aim of ensuring that the latter were used exclusively for peaceful purposes.

118. Like other delegates, he considered that the Agency should place less emphasis on the establishment and maintenance of laboratories and on the convening of conferences, and more on technical assistance in the form of experts and materials, technical advice to Member States in connection with siting evaluations and technological assessments of different types of nuclear power plants, studies on safety problems, and information and experience on the subject of desalination, a subject of considerable interest to Spain.

119. In Spain, satisfactory progress was being made in connection with the construction of the first Spanish nuclear power station at Zorita de los Canes, 100 kilometers to the east of Madrid, which was due to go into service at the end of the coming year; the plant was of the PWR type and would have a capacity of 153 000 kW. In 1966, work had been started on the construction of a second PWR plant, of 460 000 kW capacity, in the upper part of the Ebro valley 60 kilometers from Bilbao. A final agreement on a third plant, of 520 000 kW, was due to be concluded in the next few days between the French and Spanish Governments; the station would be a joint undertaking by Electricité de France and four regional Catalan groups, one of which was mainly a State concern and the other three private. The agreement in question, the conclusion of which had been greatly facilitated by the collaboration between the Commissariat à l'énergie atomique (French Atomic Energy Commission) and the Spanish Nuclear Energy Commission, constituted an excellent example of international co-operation. There were also plans for a fourth power station with a capacity of 400 000 to 500 000 kW, for which tenders would be invited on an international basis and which would be constructed on the Mediterranean coast near Valencia. Thus by 1970-71, Spain would have a nuclear generating capacity of 1 500 000 kW.

120. Although all the contracts relating to the above agreements had been accompanied by research and development agreements between the suppliers, the Spanish buyers and the Spanish Nuclear Energy Commission, work had also been going on in Spain for some time on the development of a type of power station that could form the basis for a second generation of nuclear stations. The project in question — the so-called DON project — was based on a reactor moderated with heavy water and cooled with organic liquid, which it was hoped to start building in the coming year. His delegation wished to take the opportunity of expressing its appreciation to the United States Atomic Energy Commission for its co-operation in connection with that project.

121. The production and use of radioisotopes had continued to grow at an increasing rate. The number of isotope users in medicine, industry,

agriculture, hydrology and research was now increasing by 20 % each year.

122. The year had seen the establishment of the Institute of Nuclear Studies, the purpose of which was to make available, for higher education and research, the technical staff and resources of the Spanish Nuclear Energy Commission. Another centre, the Juan Vigón National Nuclear Energy Centre, now had a staff of 280 scientists and engineers, as well as 1000 technicians and laboratory and auxiliary staff.

123. Spain was extremely interested in the problem of desalination. An inter-ministerial commission was studying the problem and research and development work was being conducted by the Spanish Nuclear Energy Commission.

124. A small plant for desalination and generation of electricity by conventional means had come into service in 1965 on the island of Lanzarote. Another plant, designed to supply water to the town of Ceuta, had gone into operation in the same year, and advanced studies were now proceeding in connection with a third, larger installation which would supply water to the island of Gran Canaria. In the future, however, desalination work would be geared to large-scale projects involving nuclear energy. It was very possible that the DON plant would be employed as a dual-purpose prototype, i.e. as a plant for desalination and the generation of electricity.

125. It was obviously important, therefore, that the Agency should intensify its work in desalination and that it should serve as a forum for the interchange of information on the subject.

126. Another fact of general interest was that Spain had now completed the final stage in the commissioning of an irradiated fuel reprocessing plant. The facility would be able to regenerate the nuclear fuel from Spain's four research reactors, the last of which had been completed in 1966 using exclusively Spanish technical resources. The fuel reprocessing plant itself had been designed and constructed in Spain by Spanish engineers.

127. He also wished to mention the zero-power fast-reactor project known as the Coral project, the highly enriched uranium fuel for which would, it was hoped, be supplied through the Agency. He expressed appreciation of the Agency's co-operation in connection with the safety studies relating to the project and noted that the experience gained in that case clearly indicated the necessity of simplifying the procedures used. At the moment the procedures took far too long because each project had to be approved in detail by the Board of Governors, which only met very occasionally. It would be useful if the Board could approve projects in the initial stage and thus help to avoid regrettable delays.

*The meeting rose at 12.55 p.m.*