PROGRAMME, TECHNICAL AND BUDGET COMMITTEE

OFFICIAL RECORD OF THE TWENTY-THIRD MEETING

Held at the Neue Hofburg, Vienna,
on Thursday, 1 October 1959, at 2.50 p.m.

Chairman: Mr. EL ANNABI (Tunisia)
later: Mr. MAKINEN (Finland)

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* GC(III)/88/Rev.2.

N.B. The list of delegations attending the third regular session of the General Conference was issued as document GC(III)/INF/25/Rev.2.
ASSISTANCE TO LESS DEVELOPED COUNTRIES WITH THE PRODUCTION OF NUCLEAR POWER
(GC(III)/76; GC(III)/COM.1/34, 36, 37, 38) (continued)

1. The CHAIRMAN drew attention to two amendments proposed by the United Kingdom delegation: the first (GC(III)/COM.1/37) was to the joint draft resolution submitted by Brazil, India, Indonesia, Pakistan and the United Arab Republic (GC(III)/COM.1/34) and the second (GC(III)/COM.1/38) was to the USSR amendment to that draft resolution (GC(III)/COM.1/36).

2. Mr. SAGANE (Japan) commended the Secretariat on the extensive studies it had undertaken and on the careful planning it had put into the programme for assisting less developed countries with the production of nuclear power. He feared, however, that the technical and cost studies were being carried out in such detail that they threw little light on the hardest problem of all, which was how and where to make a start. The programme was one of the Agency's most important activities and Japan was in a position to help, since it was one of the few countries which had already started on a long-range programme of nuclear power production.

3. Japan had been working on a plan to install a large gas-cooled commercial reactor and a small enriched-fuel demonstration reactor (a 10 MW water-moderated reactor), the second of which would be used to gain experience of power production and for demonstration and testing. Innumerable and unpredictable difficulties had arisen from the time the plan had first been mooted and it had been difficult to draw up even a tentative plan for initiating a nuclear power production programme. Responsibility for preparing the plan had been given to the Japanese Atomic Energy Commission, which had been deluged with suggestions and recommendations of all kinds from technical and political experts and salesmen from advanced countries. There had been endless disputes on timing and types of plant before agreement was reached on the first tentative plan. A group of Japanese economists and engineers had been consulted, and only after obtaining its unbiased opinion about the various suggestions and recommendations received by it had the Atomic Energy Commission been able to come to a decision on the long-range programme.

4. From Japan's own experience, his delegation could say that before a country was in a position to draw up a rough plan and time-table for the introduction of nuclear power production, it must have a clear understanding of its power
requirements in relation to prevailing technical and economic conditions, compare the probable future costs of nuclear power and conventional power and decide what financial arrangements were to be made and who was to be made financially and technically responsible. The necessary studies in that connection would clearly have to be carried out on the responsibility of the country concerned, though it would be desirable, in his opinion, for it to have assistance from the Agency, and possibly also from an independent group of economists, either individually or in conjunction with other countries similarly placed. It was essential that the country's general economic position should be determined first, and in the initial stage only rough technical and cost studies were required. The initial stage, however, was the hardest, and it was at that stage that the Agency's assistance would be of most value.

5. Some of the Japanese specialists who had worked on the Japanese plan were prepared to give assistance and advice to the Agency. Japan was also prepared to assist with the cost studies which the Agency was undertaking.

6. The Japanese delegation did not understand what the Agency's basic approach was to the question who was to take the initiative and full responsibility for carrying out nuclear energy programmes. In that connexion the question of civil liability, of which no mention had been made by the Secretariat, would depend on who was to own the nuclear facility installed in any country. The Agency should help countries make the necessary legal and practical arrangements.

7. His delegation wished to recommend that more emphasis be put on finding promising sites, on ensuring that Governments understood what kind of assistance the Agency could offer and, finally, on obtaining advice from local economists and engineers or scientists with a wide knowledge of technology and economics. Training of that type of specialist should have been mentioned in section F of the Board's report (GC(III)/76), as the need for such specialists came first.

8. It might be advisable to hold a special meeting to discuss how the proposed programme of assistance could be carried out in a more practical way and to find out the order in which various problems should be tackled. In his delegation's view, a rough time-schedule should be drawn up, as the usefulness of
specific technical and cost studies carried out in 1960 might depend entirely on timing. For example, some of those cost studies would be useful in 1965 only if a standard method of reducing the figures to allow for intervening discoveries and inventions could be introduced. The important thing was to ensure that the proposed programme was well balanced and well timed.

9. His delegation supported the joint draft resolution and the United Kingdom amendment thereto.

10. Mr. SUICA (Yugoslavia) said that the Board's report merited the appreciation and support of all Member States. A programme on the ambitious scale envisaged was indeed required but its successful conclusion would demand much perseverance and objectivity in view not only of the difficulties attached to any investigation of the economic and energy conditions characteristic of the less developed areas but also of the apparently non-competitive nature of nuclear power installations in such areas.

11. The work of the Agency's staff and the experts employed by it should be able to make a valuable contribution towards establishing, on the basis of a severely objective and rational investigation, a set of general criteria which less developed countries could use as a guide in drawing up their own detailed power development programmes.

12. Yugoslavia, for instance, was undertaking a series of analytical studies for the purpose of integrating nuclear power in the national energy system. The value of those studies could be greatly enhanced if they were evaluated in conjunction with the results of a more international enquiry to discover which types of reactor were most advanced and which had been most widely used industrially. In that field the Agency could do valuable work, with the aid of data obtained from the more advanced countries, in finding out which types of small and medium power reactor would be most suitable for use in the less developed countries, and in promoting their construction.

13. If the problem were approached in that way, both the Agency and the countries concerned would have a mutually complementary part to play in producing data which could serve in the preparation of guiding principles to determine the utility of developing nuclear power in a given area or country.
14. In the belief that the studies contemplated by the Agency would constitute a positive advance along those lines, the Yugoslav Government would continue to support, and participate in, the programme proposed by the Board of Governors.

15. Mr. RAJAN (India) said that, although his delegation thought the proposed programme was commendable, it felt that a more vigorous response should be made to resolution GC(II)/RES/27 and had, for that reason, joined with other delegations in submitting a draft resolution which stressed the necessity for accelerating the programme. If the General Conference collectively recognized the problem, it was up to it to find a solution and, if it felt that greater efforts to solve the problem were needed, it should see that the Agency made them. He hoped the General Conference would recognize the necessity for greater efforts by adopting the draft resolution.

16. The Indian delegation did not agree with the idea of "searches for promising situations" as advocated in the report (paragraphs 7, 10 and section B). Countries should themselves judge whether situations were promising or not. There might be various reasons why a country might want to develop nuclear power, none of which carried economic weight. It should itself judge whether the situation required study, the responsibility of the General Conference being to see that resources were available to carry the study out.

17. The Indian delegation particularly appreciated the steps which had been taken to cooperate with other United Nations bodies and felt that full advantage should be taken of the resources they had to offer. If those resources, and the internal resources of the countries concerned, were fully exploited, the burden on the Agency would not be so heavy.

18. He thought the Agency was very wise in its intention to study requirements for reactors on a case-by-case basis, but he did not believe it should restrict its studies of reactors to those of small and medium capacity. Although most of the less developed countries would need small or medium reactors, some might find that large power reactors would be more economic for their specific needs.

19. His delegation was prepared to accept the Soviet and United Kingdom amendments to the joint draft resolution.

20. Mr. PIERARD (Belgium) said that, in his opinion, resolution GC(II)/RES/27 had been intended to be for the common good and that any resolutions
adopted by the General Conference as a sequel to it should have the same aim. That being so, the Agency should make studies of cases which it thought were typical and therefore of general interest. Furthermore, the provision of certain types of assistance and advice, and the provision of equipment, did not properly come under resolution GC(II)/RES/27. The distinction between what should come under that resolution and what should come under technical assistance was not sufficiently clear.

21. The USSR amendment to the joint draft resolution did not seem to follow naturally on paragraph 3(a).

22. **Mr. GOLDSCHLAG** (Canada) said that the joint draft resolution was acceptable, although he would like to have an explanation of the term "possibility of collective action" in paragraph 3(a) before voting for it.

23. Although the USSR amendment seemed to go far beyond the proposed programme, he was likewise prepared to accept it together with the United Kingdom sub-amendment.

24. **Mr. RAJAN** (India) explained that, in referring to "the possibilities of collective action", the co-sponsors of the joint draft resolution had had in mind joint action by groups of States not necessarily in the same area. To satisfy the United Kingdom and Canadian delegations, the phrase "joint action by groups of States not necessarily in the same area" could be used instead, if the other sponsors agreed.

25. **Mr. FATHY** (United Arab Republic) said that, ever since the proposal to assist less developed countries with the production of nuclear power had been made at the second regular session of the General Conference, his Government had shown a lively interest in the problem and had expressed its readiness to co-operate with the Secretariat in studying it. His country was trying to determine how such assistance could be of most benefit to its programme. It was particularly interested in finding out how it could best install a medium nuclear power reactor and fit it into its power network.

26. For those reasons his delegation, which had been one of the original sponsors of resolution GC(II)/RES/27, had also co-sponsored the joint draft

\[1/\] GC(III)/COM.1/OR.22, paragraph 81.
27. In the general debate his delegation had voiced some misgivings regarding the Board's approach to the matter, and it hoped that the Board would in fact intensify its efforts to implement resolution GC(II)/RES/27, both by acceding to the wishes of the less developed countries who requested the Agency's assistance in that field and by giving the Secretariat the financial resources and staff it needed to implement the programme set out in the Board's report. In that connexion, he fully endorsed what was said in paragraph 33 of the report.

28. He had no objection to the amendment proposed by the Soviet Union.

29. Finally he wished, on behalf of the Atomic Energy Establishment in Cairo, to express its readiness to play an active part in studying the matter under discussion and to give any help required in the preparation of such studies. When the Board came to discuss the programme for 1961, the Governor from the United Arab Republic would spare no effort to ensure that resolution GC(II)/RES/27 was implemented in the most appropriate way.

30. Mr. AHMAD (Pakistan) said his delegation was very pleased that resolution GC(II)/RES/27, of which it had been a co-sponsor in 1958, had produced fruitful results which could be of great value to Member States, particularly to less developed countries. It was also glad that the draft resolution under discussion, of which it was likewise a co-sponsor, had been so well received.

31. The developments which had taken place and the knowledge and information acquired during the past year revealed the increased potentialities of nuclear power. Mr. de Laboulaye had referred at the previous meeting to work that was being done on the development of small and medium reactors which would be

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2/ GC(III)/OR.31, paragraph 19.
technically suitable for use in most parts of the world. The leader of the United States delegation had also said that the development of such reactors was one of the objectives of the United States Atomic Energy Commission and had kindly offered to associate the technical staff of the Agency with the development work carried out before the start-up of those reactors. Such an offer was a clear indication of confidence in the success of those experiments, Similarly, during a public debate held at the beginning of the present session, Sir John Cockcroft had said that, with nuclear plant, there were even fewer accidents and loss risks than with other types of plant. Such statements by responsible persons would dispel any lingering doubts regarding the technical feasibility of small and medium reactors or undue hazards involved in their installation and operation.

32. The problem of costs was more complex and its solution would be made even more difficult if hypothetical or unrealistic factors were taken into consideration. If all possible variations of types of fuel and fuel-cycling, moderators, coolants, reflectors, etc., were taken into account, a very large number of reactor types was theoretically possible. It would, however, be inappropriate and contrary to the spirit of resolution GC(III)/RES/27 for the Agency to undertake the long and arduous task of examining all those possibilities. Its approach should be more direct and realistic. It should take the promising reactor systems which had been developed at a cost of millions of dollars, like the boiling-water reactor, or the organic-moderated reactor, and attempt to work out their economics in relation to specified areas. Moreover, the less developed countries could not wait for the 20 or 30 years which would elapse before certain factors, such as accounting charges, were precisely known.

33. In his view, not enough attention had been paid to the economics of nuclear power production in the less developed countries. In the first place, the cost of power from conventional sources in the advanced countries was of the order of 5-8 mills a unit and, generally speaking, nuclear power costs had to be considered in relation to those figures. In the less developed countries, on

2/ GC(III)/COM.1/OR.22, paragraph 72.
4/ Ibid., paragraph 92.
the other hand, the cost of power from conventional sources was sometimes much higher than 8 mils a unit. Secondly, in many areas the choice was simply between having power from some source or no power at all. Thirdly, due consideration should be given to the perpetual drain on foreign exchange which the use of conventional fuels often entailed.

34. His delegation appealed for a more sympathetic approach than that reflected in the opening paragraph of the Board's report, which stressed that the question of power, including nuclear power, was of very great interest to the more developed countries for maintaining their industrial output, high standard of living, etc., adding, almost as an afterthought, that the less developed countries were also interested in it. There should also be a more diplomatic approach than that adopted in paragraph 15, in which the reactor systems which were unsuitable, for one reason or another, were listed and discussed before those which were promising; such an approach had a psychologically depressing effect since it stressed the difficulties rather than the possibilities. His delegation would also prefer a more sympathetic approach than that portrayed in paragraph 30, where consideration was given to such extreme cases as a load factor of 20%, very small reactors of 5 MW capacity and twice the lowest rate of financing charges.

35. In commending the joint draft resolution he would like to stress three points. First, it was the main purpose of the study to help the less developed countries which lacked the facilities, financial resources and staff for carrying out such studies themselves. Secondly, the work should be speeded up, which could be done by adopting a more direct, realistic and sympathetic approach. Thirdly, in the case of paragraph 3(b), the possibility of joint surveys by the Agency's experts and personnel from the country concerned should be explored, since the Agency might not be in a position to carry out all the surveys itself.

36. Mr. PAPADIMITRIOPOULOS (Greece) said that the Greek delegation wished to express its satisfaction at the Board's report, which gave an up-to-date picture of the situation regarding the implementation of resolution GC(III)/RES/27. It was very encouraging to find that the Agency was providing assistance to less developed countries in a field where their needs were urgent. Greece, which was one of those countries, was well aware of the difficulties
involved in power reactor projects, and was therefore in a position to appreciate the effort involved in the preparation of the report and the need for detailed examination of every factor involved.

37. His delegation believed that, with the steady progress that was being made in the technology of reactors and with the lowering of their attendant costs, it was better to take some risks in the interests of speeding up the introduction of nuclear power where conditions were reasonably promising rather than waste valuable time waiting for exceptionally favourable conditions.

38. His delegation had been glad to note from the report that contacts had been established with the United Nations Special Fund and the International Bank for Reconstruction and Development, with a view to giving financial assistance to less developed countries in developing nuclear power. He hoped that the Agency would make every effort to bring about the closest co-operation in that field.

39. His delegation fully supported the joint draft resolution, but could not agree with the modification introduced by the United Kingdom amendment to paragraph 5 (GC(III)/COM.1/37). In his view, it was essential that a report on the question be submitted annually to the General Conference to enable it to follow year by year the progress made in a field which was of the utmost importance for most Member States.

40. The Greek delegation welcomed the announcement by the United States delegate that his country was now embarking on a large-scale programme for the construction of small and medium-size power reactors. Such a programme would be of the greatest benefit to the Agency's work.

41. Mr. Novikov (Union of Soviet Socialist Republics) said his delegation had no objection to the United Kingdom sub-amendment.

42. Mr. Tacar (Turkey) said that his delegation endorsed the Board's report and also the suggestion of Mr. de Laboulaye that the scope of studies be extended to include 100 MW(E) reactors, which were of interest to the less developed countries with areas of high power consumption. The Turkish delegation would like fellowships for training in reactor technology and utilization to be granted for two years.

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2/ GC(III)/COM.1/OR.22, paragraph 90.

6/ Ibid., paragraph 74.
43. His delegation supported the Soviet Union and United Kingdom amendments to the joint draft resolution. With regard to paragraph 3(c), he proposed that the words "in accordance with the Charter of the United Nations and the Statute of the Agency" be added at the end.

44. Mr. SAHAR (Israel) agreed with previous speakers that the reference to "collective action" in paragraph 3(c) of the joint draft resolution was ambiguous. His delegation shared the desire of the delegate of Turkey that such action should be carried out in accordance with the United Nations Charter and the Statute of the Agency, and thus supported the Turkish amendment.

45. Mr. BENCHEKROUN (Morocco) said that he wished to congratulate the Secretariat and the Board for the work they had done in implementing resolution GC(II)/RES/27. Although the Board's report was on somewhat theoretical lines, it was promising, and he hoped that it would be possible to include more concrete data in subsequent reports.

46. His delegation supported the joint draft resolution and had no objection to the United Kingdom sub-amendment to the Soviet Union amendment. It was, however, opposed to the United Kingdom amendment to paragraph 5 of the joint draft resolution. He feared that implementation of resolution GC(II)/RES/27 would be held up if the Board of Governors, acting under the latter amendment, were to decide that it was not desirable for further reports on the economics of nuclear power to be submitted.

47. Mr. SOEBAGIO (Indonesia) said that his delegation, as a sponsor of resolution GC(II)/RES/27, was deeply aware of the importance of nuclear power production, especially in countries with scanty conventional fuel resources. Although Indonesia was not yet at the stage at which it needed nuclear power, it was following progress in that field with the greatest interest with an eye to its future needs, and had for that reason decided to sponsor the joint draft resolution.

48. He accepted the United Kingdom amendment to paragraph 5.

49. Mr. RAJAN (India) recalled the alternative rendering which he had suggested for the words "collective action" in paragraph 3(c). Since the expression he advocated was in accordance with the language used in the Statute, adoption of his suggestion would render the Turkish amendment unnecessary.
50. Mr. Makinen (Finland) took the chair.

51. The CHAIRMAN said that he would put the joint draft resolution and the various amendments to it to the vote.

52. The United Kingdom sub-amendment (GC(III)/COM.1/38) was adopted by 52 votes to none.

53. The Soviet Union amendment (GC(III)/COM.1/36) was adopted as amended by 53 votes to none.

54. The United Kingdom amendment (GC(III)/COM.1/37) was adopted by 52 votes to 3.

55. The amendment submitted orally by the Turkish delegation was adopted by 20 votes to 6, with 26 abstentions.

56. The joint draft resolution submitted by Brazil, India, Indonesia, Pakistan and the United Arab Republic (GC(III)/COM.1/34), as amended, was adopted by 56 votes to none.

57. The CHAIRMAN suggested that, for the purposes of its report to the General Conference, the Committee leave it to Mr. Arnott (Australia), acting in place of the Rapporteur, to prepare a brief and purely factual account of the Committee's deliberations on the item as a preface to the draft resolution just approved.

58. It was so agreed.

COMPLETION OF THE COMMITTEE'S BUSINESS

59. The CHAIRMAN announced that the Committee had completed its consideration of the matters referred to it by the General Conference. He thanked the delegate of Tunisia for the admirable way in which he had presided over the Committee's deliberations.

The meeting rose at 4.25 p.m.