

SUPPLY OF NUCLEAR MATERIALS

Any large-scale atomic energy programme is inherently dependent on the availability of materials that can be used as fuel in reactors, and the International Atomic Energy Agency, at its inception, was intended to act as a bank for the flow of materials between Member States. According to its Statute, one of its primary functions is to provide materials "to meet the needs of research on, and development and practical application of, atomic energy for peaceful purposes, including the production of electric power, with due consideration for the needs of the under-developed areas of the world".

The total world reserves of uranium and thorium are now known to be larger than was believed a few years ago, and there seems to be no danger of a general world shortage of nuclear fuel. That, however, does not really reduce the importance of the role the Agency was intended to play in this field, because despite the vast world reserves, individual countries may still face the problem of inadequate indigenous supply. For, in the first place, the known deposits are not evenly distributed in all regions of the world, and secondly, only a few countries have so far developed the necessary technical and organizational facilities for the processing of these materials and their fabrication into fuel elements. Inevitably, therefore, atomic energy work in many countries will have to depend on the supply of nuclear fuel from outside. And this is a field in which an international organization can render significant assistance by channelling and co-ordinating supplies on a world-wide basis and in a manner that would best promote the prosperity and peace of the whole world.

Offers of Supply

If IAEA is to carry out this function, it must have sources of supply on which it can draw in order to meet requests for materials for atomic energy projects in Member States. Its Statute, therefore, envisaged that Member States which were in a position to supply nuclear materials would make them available to the Agency and notify the Agency of the quantities, form and composition of the materials that they were prepared to supply. Accordingly, at the Agency's first General Conference in 1957, offers of substantial supplies were made by several States. The offers included both source materials e.g. natural uranium and thorium, and what are called special fissionable materials, e.g. enriched uranium. The Agency was thus assured that there would be no difficulty in meeting requests for materials that it might receive from other States.

The first request came from Japan, which asked for three tons of natural uranium for use in a research reactor. The Agency invited tenders for supply and the material was secured from Canada, which made it available to the Agency free of charge. This procedure was evidently rather ad hoc in nature. If the Agency is to fulfil its Statutory function, it would be essential for it to have not only some ready sources of supply, but also an established framework of general terms and conditions on which it could secure the supplies. The latter would eliminate the need for going through elaborate procedural formalities whenever the Agency receives a new request for materials.

Signing of Agreements

Such a framework has now been established with the signing of broad agreements with three countries which had offered to supply various quantities of special fissionable materials to the Agency. These agreements, signed in Vienna on 11 May 1959, with the USSR, the UK and the USA, lay down the basic terms and conditions on which these three countries will make nuclear materials available when needed by the Agency.

At the signing ceremony, representatives of the three countries emphasized that the agreements reaffirmed the confidence these countries had in the Agency and its major function in the supply of nuclear materials. Professor V. Emelyanov (USSR) said the signing of the agreements was proof that the activities of the Agency created favourable possibilities for the development of international co-operation in the field of atomic energy. Mr. H. C. Vedeler, pledged the support of the United States for the Agency's growing programme, and Mr. J. C. Wardrop recorded the sober satisfaction of the United Kingdom at the conclusion of the agreements. The IAEA Director General, Mr. Sterling Cole, pointed out that the Agency could now draw upon sources of fissionable materials to the amount of more than 5 100 kg and said that the signing of the agreements with the three powers which were in a position to use atomic energy for destruction showed their desire to employ the power of the atom for the good of humanity.

The USSR has agreed to make available to the Agency 50 kg of uranium-235, the UK 20 kg and the USA 5 000 kg. The material will be supplied in the form of enriched uranium in any concentration up to 20 per cent; the amounts mentioned relate to the 235-isotope content of the materials. The UK and the USA have agreed that the parties to a particular supply agreement may decide on higher enrichment of uranium to

be used for research reactors, material testing reactors or for other research purposes. The USA has also agreed to make available to the Agency such additional supplies as would match in amount the total of all supplies by other Members of the Agency before 1 July 1960. Further supplies from time to time are also envisaged. Moreover, if the Agency so wishes, the USA will assist it in obtaining reactor materials (including source materials i.e. natural uranium, uranium-238 or thorium). If no commercial sources for these materials are available on reasonable terms, the US Government itself may make them available to the Agency.

Determination of Prices

The agreements do not specify the prices at which the nuclear materials will be supplied to the Agency, but they lay down the principles on the basis of which the prices will be determined. The USSR has agreed that its prices will be based on a scale of charges corresponding to the lowest international prices in force at the time of delivery. The prices of materials supplied by the UK will not be less favourable than those

offered by the UK Atomic Energy Authority to other external customers. The US prices will correspond to the US Atomic Energy Commission's published charges for the domestic distribution of these materials. The US Government may also supply materials without charge for research on peaceful uses or for medical therapy up to an annual quantity not exceeding \$50 000 in value.

The agreements do not open up any new sources of supply; as already stated, these supplies had been offered as early as 1957. But what they do provide is a broad framework for specific supply arrangements, a framework which may, furthermore, help in the establishment of international market prices for nuclear materials. Besides, they provide a stable and long-term basis for the availability of materials. The agreement with the USA will remain in force for a period of twenty years. The UK Government has stated that its offer will remain open until the end of any calendar year after 1960 in which notice of withdrawal of the offer is given. The agreement with the USSR will remain in force for one year after the day of its denunciation by the USSR Government or the Agency.



Signing of agreements at the Neue Hofburg palace in Vienna. Seated at the table, left to right, Mr. J.C. Wardrop (UK), Prof. V.S. Emelyanov (USSR), Mr. C.A. Bernardes, Chairman, IAEA Board of Governors, Mr. H.C. Vedeler (USA) and Mr. Sterling Cole, Director General. In the background, some members of the Board of Governors and Agency officials