IAEA PROGRESS REPORT

HIGHLIGHTS OF REPORT TO ECOSOC

The International Atomic Energy Agency recently presented its first annual report to the Economic and Social Council of the United Nations. The report is designed primarily to inform the Council of those aspects of the Agency's development and programme which are of special interest to the Council, taking into account the Council's special responsibility for co-ordinating the activities of the United Nations family in the economic and social fields.

Although the report does not cover the full range of the Agency's activities, it provides an outline of its development within the framework of its broad Statutory functions and in the context of the concrete needs of specific situations. An account of some of the Agency's activities is given in other articles in this Bulletin, but the main points from the report may be useful in providing a synoptic view of some major aspects of the Agency's work and development.

Radioisotopes

The report notes that the application of radioisotope techniques to the general industrial economy is already well established in a number of the more developed countries, but because of rapid scientific and technical advance and the prospect of entirely new fields of utilization being opened up, the picture is continually changing with an increasing number of applications. In the highly developed countries, it is pointed out, the annual savings attributed to the use of radioisotope applications have been estimated at tens, and even hundreds, of millions of dollars. This is mainly achieved by the widespread use in industry of radiography and gauging of thickness and density of materials. Since these applications are non-destructive, there is a considerable reduction of wastage and a higher production rate is attained. The report also refers to the tracer uses of radioisotopes and points out that this method has been applied, for example, in the petroleum industry in detecting leaks in pipelines or in marking different grades of oil moving in the same pipeline. These examples represent only a small fraction of the varied applications of radioisotopes. IAEA is promoting the use of the relevant techniques by the dissemination of information and the provision of expert advice. The Agency's programme of conferences and symposia is expected to play a large part in promoting these applications. The whole question of the applications of large radiation sources, with particular reference to their use in the chemical industry, will be discussed at a conference in Warsaw to be convened by the Agency in September 1959. A conference on the use of radioisotopes in the physical sciences is planned for 1960 and another on the use of radioisotopes in the biological sciences is scheduled to be held in 1961.

The report states:, "The applications of radiation and radioisotopes in medicine and agriculture are most promising for the economic and social progress of the less developed countries, and the Agency, in consultation with WHO and FAO, is assisting in their promotion. Different local requirements and conditions have to be taken into account in the development of these new techniques. The preliminary surveys of the needs of Member States being made by the Agency in various regions enable these conditions to be studied at first hand. As far as agricultural research is concerned, the use of radioisotopes as tracers can be applied directly to problems of increasing crop yields. In co-operation with the interested specialized agencies, the Agency is rendering technical assistance to under-developed countries in radioisotope investigations of soil fertility, fertilizer application and nutrition of food plants. Ionizing radiations may be used to induce beneficial hereditary changes such as developing improved varieties of plant species".

As for the medical uses of radioisotopes, the report describes diagnosis as "a particularly important example of a complete change in the methods now being employed as a result of the use of radioisotope techniques". It draws attention to the seminar on medical radioisotope scanning held in February under the joint auspices of IAEA and WHO, and to the award of contracts by IAEA for research on the medical applications of radioisotopes. In consultation with WHO, the Agency is preparing a survey on the availability and use of radioisotope therapy units and supervoltage accelerators for medical applications. When this survey is complete, a meeting of experts will be convened to make recommendations regarding the physical aspects of the survey as well as the various uses.

Referring to the work being done in a number of advanced countries on the possibility of preserving food by irradiation, the report discloses that a survey of this work is being made by the Agency in consultation with FAO, in order to determine whether such applications would be economically feasible in the less developed areas of the world. "The use of large radiation sources could, for example, bring about large economic and social repercussions by the disinfestation of grain. This aspect is particularly important in a number of areas where as much as a quarter of

the stored grain is lost annually as a result of infestation by such pests as grain weevils".

Nuclear Power

The report says: "It is expected that in the long run, the development of nuclear power will be the most important peaceful application of atomic energy, and that the Agency's assistance to Member States in this field will become its leading or at least one of its major activities". It explains that the Agency's initial work is concerned with both the technical and economic aspects of the matter, with particular reference to the needs of the less developed countries. So far as the technical aspect is concerned, the work includes the collection, evaluation and dissemination of information on developments in reactors and other nuclear equipment, advice on reactor programmes and projects of Member States, the sponsoring of technical meetings and the carrying out of surveys. Similar activities are envisaged, in close co-operation with the United Nations, in regard to the economics of nuclear power.

Referring to the Agency's two-year work programme regarding the utilization of nuclear power in under-developed areas, the report says: "In conducting these studies and in the collection of relevant information, the Agency will require and seek assistance from the appropriate international organizations, particularly the United Nations, its regional economic commissions and the International Bank for Reconstruction and Development. In particular, the Council's invitation to the Agency to consider and recommend projects which might usefully be undertaken by the Council, its regional economic commissions or other subsidiary bodies of the Council in order to assist the Agency in carrying out its programmes in various regions of the world, will be borne in mind". The report also refers to the Agency's activities in connexion with the supply of nuclear fuel.

Technical Assistance

The report notes the importance of the Agency's work in the field of technical assistance and explains that its resources for carrying out these activities are of three kinds: (a) voluntary financial contributions to the General Fund, (b) donations in kind made by Member States in the form of the services of experts, of fellowships and scholarships at national institutions, and of equipment, etc., and (c) funds made available to the Agency as a result of its participation in the United Nations Expanded Programme of Technical Assistance (EPTA). In 1958 the resources available were the contributions (amounting to a total of US $129 140) to the General Fund, which had been specifically allotted for the setting up of a fellowship programme, and certain gifts in kind, in particular fellowships and the services of some experts for limited periods. In 1959, activities in this field have been initiated on a considerably larger scale. The resources available for this purpose this year include, apart from the contributions to the General Fund and the gifts in kind, an allocation of US $200 000 from the United Nations Technical Assistance Board. In addition, it has been indicated that the Agency will be allowed to draw upon the TAB Contingency Fund to a maximum of US $300 000.

The Agency's technical assistance activities, like those of other members of the United Nations family, consist primarily of (a) the provision of services of expert advisers, (b) fellowships, exchange and training, and (c) the provision of technical equipment. To ascertain the technical assistance needs of Member States the Agency has carried out certain preliminary surveys and more are expected to be conducted in future. In addition to these preliminary surveys, the Agency has provided expert advice on specific projects in Member States and has been assisting in their execution by various means. The report also gives an account of the fellowships programme of the Agency (described in the April issue of this Bulletin).

A joint IAEA/FAO training course is to be held at Cornell University from 20 July to 10 September 1959, in co-operation with the US Government and Cornell University. This will be the first international training course on radioisotope techniques designed specifically for the needs of the research worker in agriculture, fishery, forestry and nutrition.

Regarding equipment and supplies, the report states: "Owing to the highly technical nature of nuclear energy, a number of requests for technical assistance experts are supplemented by requests for equipment. In 1958 requests for scientific and technical supplies and equipment of an estimated value of $145 000 were received from four countries and institutions. On the basis of experience gained in 1958, it is anticipated that requests for equipment and supplies within the general framework of technical assistance projects will continue to be received throughout 1959 and subsequent years. The requests so far received by the Agency seem to indicate that the governments will often ask for equipment whose relative cost will be high, sometimes much higher than the cost of experts. Arrangements for the procurement of supplies will be made, where appropriate, in co-operation with the United Nations and the specialized agencies concerned, as is already being done in the case of equipment for a radiation laboratory requested by Brazil".