THE IAEA MOVES FORWARD

At the opening of the Ninth Regular Session of the Agency's General Conference in Tokyo on 21 September, the Director General, Dr. Sigvard Eklund, made a brief survey of some of the current developments in the Agency's activities.

****

I have endeavoured to initiate a new form of assistance whereby research institutions in developing countries enter into reciprocal arrangements with similar institutions in the more advanced countries on a continuing basis. Such arrangements should be developed to an increasing extent, since I consider that it holds more lasting benefits and would probably enable a more efficient use to be made of the limited funds available for technical assistance. It is my hope that donating Member States will find it possible to support this scheme by providing necessary fellowships and equipment.

It might be appropriate at this stage to refer to the increased recognition of the Agency in Special Fund projects. Delegates will be aware of the projects which were already in operation last year in Yugoslavia and in the Philippines. The former which is related to the establishment of research and training in atomic energy applications in agriculture will be completed next year. The first phase of the Philippines project which is concerned with investment studies of power, including nuclear power, has been concluded and the Agency has been authorized to proceed with the consideration of nuclear plants in planning an optimum power expansion. A detailed cost analysis is now being made of alternative expansion patterns based on conventional and nuclear plants, the results of which, and the methods of analysis employed should be of interest to other countries in similar situations.

The implementation of the Special Fund project for the eradication in Central America of the Mediterranean Fruit Fly by using the sterile male technique has commenced. This project is technically directed by the Joint IAEA/FAO Division of Atomic Energy in Agriculture. This division to which I shall refer later, will also implement the latest project entrusted to the Agency by the Special Fund concerning the establishment in Turkey of a pilot plant for grain disinfestation by radiation. It is anticipated that this pilot plant will demonstrate successfully the feasibility and economic practicability of using radiation on a commercial scale to eliminate considerable losses of stored grain by damage inflicted by insect pests.

The value of Special Fund projects for which the Agency is the executing organization now exceeds $6 million. A further project in a similar field in which the Agency is participating is the Austrian/ENEA/IAEA international programme on irradiation of fruit and fruit juice which is being carried out at the Austrian Seibersdorf Laboratories.

The Joint IAEA/FAO Division which came into being on 1 October 1964, having started with a minimum of teething troubles, this division is operating now harmoniously and effectively and demonstrates the advantages

of this form of close co-operation on subjects of mutual interest by two organizations, members of the UN Family of Organizations. This form of co-operation provides the best possibility for avoiding wasteful duplication and eliminating conflicts of rivalry.

NUCLEAR POWER PROGRESS

The Agency's technical operations have continued and here greater efficiency has been achieved by an organization of the divisions into sections. For example, the Division of Nuclear Power and Reactors operates in units dealing with nuclear power and desalting economics and reactor physics and research reactor utilization.

During the past year, several important new nuclear power projects have been initiated, and the competitive position of nuclear power has significantly improved. In the United Kingdom, it is estimated that an AGR (Advanced Gascooled Reactor) station will generate electricity at a lower cost than from coal-fired station, while in the USA private utilities have ordered light-water nuclear power plants in preference to conventional plants in competitive bidding. Developments in several other countries have shown similar encouraging trends for nuclear power.

More countries are giving serious consideration to the possibility of using nuclear plants to supplement their available energy resources and this has led to an increasing call for the services of the Agency in analyzing the prospects of nuclear power in given areas, in power reactor feasibility studies, site evaluation and assessment of bids. During the current year, the Agency despatched nuclear power missions to Turkey and Argentina and another is expected to visit Peru, Chile and Brazil.

The rapid development of nuclear power will be accompanied by an increasing rate of plutonium production from power reactors. The Agency organized a panel to discuss the utilization of plutonium in power reactors which indicated that the technical bases for using plutonium in thermal reactors were established and would be improved in coming years. The Agency is also interested in the utilization of thorium, in view of the large thorium reserves in several developing countries and its possible utilization in convertor and breeder plants.

Our experience in connection with international co-operative projects has been very encouraging. The projects relating to basic reactor physics and neutron diffraction have progressed satisfactorily.

The NPY (Norway, Poland, Yugoslavia) Project is receiving enthusiastic reports from the scientists involved from the three countries. The IPA (India, Philippines, Agency) Project consisting of a crystal spectrometer at the new research reactor at Manila has made a promising start. Scientific results already achieved have been published and a second spectrometer is now under construction. The success of these two projects supports my conviction about the importance of regional projects.

HEALTH AND SAFETY

In the health and safety field, a great deal has been done in establishing international services and co-operation, and the publications in the Safety Series outlining codes of practice for personnel monitoring, radiological safety in mining and milling and waste management have continued to receive ready acceptance by Member States. The revision of the Basic Safety Standards and Transport Regulations has been undertaken. A regional study group meeting in health physics is planned for November this year in Bangkok. The establishment of an Advisory Service at Agency Headquarters jointly with FAO and ILO will provide information and advice to Member States on radiation protection and the management of radioactive wastes. Several Member States have provided the Agency with reports on research projects which they are carrying out in radioactive waste management. The publication of abstracts of these reports will enable the benefits of the research to be more widely shared by the Member States of the Agency. A similar scheme on selected topics of Health and Safety should be instituted in the coming year. An advanced training seminar in radioactive waste management is scheduled next month at the Tokai Mura establishment here in Japan.

In the general field of health and safety I cannot too strongly urge the need for the early establishment of an agreed scheme of emergency assistance in the event of radiation accidents. Emergencies will not wait and we should not be too complacent about the excellent safety record of the nuclear industry. We should perhaps express our gratitude for this by ensuring that if despite this good record an emergency situation should arise we should be ready to meet it, remembering that public confidence so carefully built up over the years could be destroyed overnight by a single emergency over which we have no proper control. For this reason, it is my fervent hope that the discussions in the Board of Governors over the past years will soon result in some acceptable international or regional arrangement.

Before leaving technical operations, one should not overlook the important role being played by the Division of Scientific and Technical Information in the organization of scientific meetings and the production of scientific publications which this year is likely to reach a record level. The publication of the proceedings of the Third Geneva Conference, however, is being done by the United Nations which expect to have all 16 volumes out by October this year.

Preparations have proceeded throughout the year for computer processing of Agency operations. In-service training of staff and the programming of work has ensured that the computer, an IBM 1401, when installed next month will be effectively employed. It may be possible at a later stage to provide some computer services for Member States.

RESEARCH AND ISOTOPES

Turning now to the Agency's work in research and isotopes, I have already referred to our work in agriculture and would further report on the

continued progress in co-ordinated programmes relating to rice and maize cultivation, soil moisture and water-use efficiency studies. In the medical field progress is also being made in co-ordinated programmes relating to protein deficiency, endemic diseases, etc. We are hopeful of introducing a co-ordinated programme involving the application of radioisotopes for industrial purposes.

I have been greatly encouraged over the past year by the readiness of certain Member States to carry out programmes of research of interest to the Agency at no cost to the Agency. Countries which have assisted in this way include Australia, Hungary, India, Israel, Japan, Sweden, USA, USSR, Yugoslavia. It is particularly gratifying to see developing countries who are entitled to receive assistance and are receiving assistance so ready to provide something in return. I should here also acknowledge the value of reports of research made available by USSR, Poland and Hungary.

Time will permit only passing reference to the work of the Agency's laboratory whose activities in the preparation of standards has been so well received. In the Laboratory at Seibersdorf, the distribution of standardized radioisotope sources has continued to expand. In 1964, some 2600 sources and samples were sent to 114 institutes in 43 countries. The laboratory has also provided services to the agricultural programme, which now includes 11 countries in the co-ordinated rice research programme, 4 countries in the maize programme and 12 countries in the disinfestation programme using the sterile male technique.

The Monaco laboratory has continued its research on dispersion, release and biological uptake of radioactive waste disposal into the Sea.

The Agency has recently begun activities in the international exchange of nuclear data. The technical area covered by this exchange is that of generally measured quantities, such as the cross-sections of various reactor components (including fuel isotopes), for the reactions which are induced by neutrons of various energies. Quantities such as the yield of neutrons in fission are also covered, but not those derived constants of any one reactor or type of reactors. Such data now exist in such detail that they are best handled using computer techniques, and it is felt that such an exchange of data will be of general assistance in the development of atomic energy.

The International Centre for Theoretical Physics commenced operations in October last year with the support of UNESCO and I would like to quote what Professor Weisskopf says in a letter to Professor Slater, viz., "the most decisive achievements of theoretical physics during 1964/65 took place at Trieste". In its short life, the Centre has held two important seminars, one on plasma physics and the other on high-energy and elementary particles, these having been attended by no less than 125 scientists from about 30 countries, with lecturers of 14 nationalities. The number of scientific publications issued by the Centre, exceed 70, and in this work there has been a major participation by scientists from developing countries. The financial problems of the Centre have caused me some concern and I have sought ways and means of overcoming them. The Board and the General

Conference may next year, be called upon to give serious consideration to the future of this excellent institution when its establishment years have been completed.

SAFEGUARDS

I now turn to the important subject of safeguards. One of the most significant achievement of the past year has been the unanimous acceptance by the Board of Governors of the draft of the revised safeguards system which the Conference will be asked to consider. This marks an important step forward in the ensuring that the atom will be used only for peaceful purposes and will represent the first programme of international inspection in the nuclear energy field to be put into effect with the support of East and West. To quote from a speech by Dr. Seaborg, "Except for the limited Test Ban Treaty, there are few more important steps than this being taken to preserve international peace and security."

The Agency's executive responsibility to apply safeguards has developed remarkably in the last year. It is only two years ago since in my statement to this Conference I was able to inform you of the first transfer to the Agency of the responsibility for applying safeguards to a bilateral arrangement. There are now 21 Member States who have submitted identifiable parts of their atomic energy programmes to Agency safeguards, either by way of seeking assistance from the Agency through an Agency project or by submitting unilaterally facilities to Agency safeguards. The total power

---

The Bradwell nuclear power station in Essex, UK. It has a net electrical output of 300 MW from two reactors (Photo: UKAEA)

involved in the facilities thus subject to Agency safeguards exceeds 1400 megawatts thermal out of some 25 000 megawatts thermal generated in power reactors at present.

The Board has approved the request of the United Kingdom and Denmark to transfer the safeguards required by their bilateral arrangement to the administration of the Agency. The Governor from the United Kingdom at the June Board announced the decision of his Government to unilaterally place the Bradwell Power Station, whose capacity is 1076 megawatts thermal, under Agency safeguards. More recently, Sweden has requested negotations with a view to placing its bilateral arrangements with both the United States and the United Kingdom under Agency safeguards. At the last meeting of the Board approval was given for application of Agency safeguards to the bilateral arrangement between Canada and Japan. This last transfer is interesting since it is fully reciprocal and contemplates that each country will be a supplier to the other.

DESALINATION

Finally a word about a technical development which might contribute to solving the problem of water shortage, and in which the Agency is actively engaged. I refer to desalting. The Agency has continued to organize panel meetings dealing with the use of nuclear power for desalting, the most recent of which has reviewed the Agency's work to date and has recommended a programme for the future. The extent of international collaboration in this field in which the Agency has been invited to participate is most encouraging. This includes the joint USA/Israeli project and a project of considerable importance to USA and Mexico in the Gulf of California. We anticipate that this latter project will be the subject of a study carried out jointly by USA, Mexico and the Agency in which the Agency will provide the Chairman and the Secretary of the Study Group. We are also assisting Tunisia in its desalting activity. The Agency is receiving increasing requests for surveys to determine the possibilities of nuclear desalting in water-scarce regions of the world.

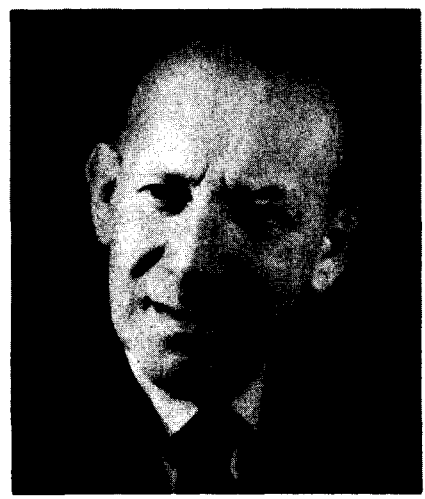
Of great significance is the agreement for co-operation in the field of desalting concluded in January last between the USA and USSR. This agreement provides that in order that the Agency and its Member States should receive full benefits from the operation, the countries concerned have undertaken to provide the Agency with copies of their reports and to invite Agency observers to scientific meetings held on this subject by USA and USSR. Apart from the co-operation with USA, we have also received assurances from the United Kingdom of its readiness to bring the Agency in on their extensive programme.

The spirit of co-operation signified in the agreement I have mentioned may symbolize a goodwill between the Agency and its Member States and the Member States themselves and encourages me to think that the Agency has before it opportunities for constructive work.

In concluding, I would express my gratitude to the Government of Japan for their invitation to hold the Agency's General Conference in Tokyo and for the excellent facilities placed at our disposal for this purpose. It is fitting that a country with such an outstanding record of progress in the peaceful uses of atomic energy should be the host for the first conference of the Agency held away from headquarters. There may be some significance in the related fact that Japan is unique in its legislation which provides that atomic energy must only be used for peaceful purposes.

THE 1965-66 BOARD OF GOVERNORS

The newly-constituted Board of Governors, at its first meeting in Tokyo at the conclusion of the Ninth Session of the General Conference in September, elected Mr. Shinsaku Hogen of Japan as Chairman of the Board for 1965-66. He succeeds Miss Blanche Margaret Meagher of Canada. Mr. Hogen has been in the Diplomatic Service since 1937 and is Ambassador to Austria. He has held a number of diplomatic posts in Germany, USSR and USA, and before being appointed to Vienna, he was Director of the European Affairs Bureau at the Ministry of Foreign Affairs in Tokyo.



Mr. F. Hercik (Czechoslovakia)