past, present and future

Memories of the Fourth International Conference on the Peaceful Uses of Atomic Energy were still fresh when delegates assembled in Vienna for the 15th session of the General Conference of the International Atomic Energy Agency, at the end of September. The Director General of the Agency, Dr. Sigvard Eklund, chose this as the occasion for a review of the progress made by the IAEA since its inception, its current work and the prospects for the future.

Dr. Eklund noted that progress was usually a very slow process; nowhere was this more evident than in the building of better relations between nations. One often needed to look over long periods to see whether or not there had been any significant advance.

"On this occasion, the Agency's Fifteenth General Conference, I would like to make a few retrospective remarks to identify some of the progress made by the Agency since its inception," he said. "The origins of the Agency go back more than 25 years, when the nations of the world first began striving for some kind of an international solution to the dilemma posed by the atom. After several hesitant steps and much discussion, in 1953 a specific proposal to create an international atomic energy agency was put before the United Nations General Assembly. Another four years were required to draft a Statute and bring it into force.

"... By 1961 the Agency had established the beginnings of a safeguards system, had set up laboratories at headquarters, in Seibersdorf and in Monaco, had worked out a programme of technical assistance and was already very active in the regulatory field. IAEA regulations for the safe transport of radioactive materials had been established. With commercial nuclear power still years ahead and bi-lateralism still dominant in the field of safeguards, the main topic of the Agency's work was radioisotopes and radiation. As an example of slow progress, the Vienna Convention on Civil Liability, which was adopted in 1963, has not yet entered into force and has not yet been ratified by any major nuclear trading country.

A general view of a glasshouse used in agricultural research at the Yugoslav Institute for the Application of Nuclear Energy in Agriculture, Veterinary Medicine and Forestry, Zemun, near Belgrade — referred to by Dr. Eklund in his address to the General Conference. Photo: IAEA

"In 1963, the Agency began to undertake its first large-scale development projects — the Middle Eastern Regional Radioisotope Centre in Cairo and the first Special Fund project in the nuclear field, in Yugoslavia, also concerned with radioisotope applications...

"The Agency was, in 1964, able to take full responsibility for the scientific programme of the Third Geneva Conference. The Agency had become a well-established forum for the exchange of information and a major publisher in the nuclear field. In the same year, 1964, the Agency formalized its collaboration with the Food and Agriculture Organization by establishing a Joint Division for the application of nuclear energy in food and agriculture. In 1964, the Trieste Centre for Theoretical Physics was established in collaboration with the Italian Government.

Ensuring efficiency

"Since 1964," Dr. Eklund continued, "a trend has been to seek greater efficiency in the scientific programmes and to revise them periodically to meet the actual needs of Member States. This was done in the light of the developments in many large national atomic energy commissions, where important tasks were diverted to bodies outside the commissions Nuclear power, including desalination, caught more interest and the same holds true for environmental questions. In 1967, the Agency accepted the offer made by the Austrian authorities to build a permanent headquarters in the Donaupark" [An area of land beside the Danube, a little removed from the city centre.]. "In 1968, the Agency established the International Nuclear Information System which, from a modest start, has gained considerable momentum. In the last few years, contributions to the IAEA's own programme of technical assistance have increased. The number of Special Fund projects under execution has risen to six.

"The Moscow Test Ban Treaty of 1963 signalled an improvement in international relations and had a beneficial effect on the overall work of the Agency, and particularly on safeguards. Member States soon afterwards agreed to extend the earlier safeguards system to power reactors of all sizes and to reprocessing and fuel fabrication plants. Bi-lateral safeguards began to be steadily transferred to the Agency. In 1968, the General Assembly commended the Non-Proliferation Treaty and in April this year the Agency completed the preparatory work needed to apply safeguards to all nuclear material in the peaceful activities of Non-Nuclear-Weapon States party to the Treaty; negotiations are now proceeding with 30 countries..."

"From these few examples it is obvious that, despite ups and downs, progress has been made."

A view to the future

Where would the Agency go from here? Was it responding effectively to developments in nuclear energy? Was it meeting the needs and desires of its Member States?

In an attempt to answer these questions, Dr. Eklund looked first at some recent developments. Nuclear energy, in almost all of its applications, was now increasingly being used on a commercial scale. This development was, of course, particularly striking in the production of electric power. But the large-scale introduction of nuclear power in national economies also brought with it certain problems of an international character. If there was one dominant impression to be gained from the Fourth Geneva Conference, it was confidence in the future of nuclear power. Sessions on environmental aspects of the use of nuclear power were also very illuminating.

"The recent expressions of concern with regard to the human environment, which have led to the convening of a United Nations Conference on the subject in Stockholm in 1972, have repercussions on nuclear power as well," Dr. Eklund noted. "To help the United Nations Secretariat prepare for this Conference, the Agency has contributed papers which conclude that nuclear power plants are decisively better than fossil-fuelled plants with respect to common atmospheric pollutants, but that the generation and release of radioactivity in various phases of the nuclear fuel cycle require continuing attention to ensure that acceptably low levels of radiation are maintained. An interesting point is that the techniques and control of radioactive releases might usefully be adopted in the control of other pollutants."

Dr. Eklund recalled that at the 1970 General Conference it had been proposed that the Agency should serve as a central repository of data on amounts of radioactivity released by all the peaceful applications of nuclear energy. In June 1971 the IAEA Board had discussed the establishment by the Agency of an international register of all substantial releases of radioactive wastes into the seas and oceans. In July, the Agency had convened a consultants' meeting to consider the technical problems associated with establishing a central repository. The consultants suggested that a register be established now in co-operation with the World Health Organization for releases of radioactive materials to any sector of the environment which may go beyond national boundaries. It went without saying that such a register could only be established with the full co-operation of Member States.

In further preparation for the Stockholm Conference, a draft convention regulating the transportation and dumping of all materials in the ocean was being drawn up; the proposed IAEA/WHO register could be a component of such a comprehensive regulatory system. Care must be taken to avoid duplication of work in collecting and disseminating information for these registers.

To meet the present and future needs for rapid access to information in the nuclear field, the INIS programme would grow in scope. It was anticipated that on a recommendation of a panel of experts which met in July the scope of the coverage of this system might almost double in January 1972. This would, however, be first the subject of a review by the Board's own Advisory Committee on INIS in November.

Nuclear power and the developing countries

The introduction of nuclear power in the developing countries, Dr. Eklund continued, raised special problems for those which would look to the Agency for help and advice. The Secretariat had been conti-

nuing its studies of the financing of nuclear power, and in particular on the technical and economic characteristics of nuclear reactors that could be used in the smaller electrical grids of developing countries. A market study was being initiated to determine the future demand for reactors below 500 megawatts electrical output. In meetings which had taken place during the Fourth Geneva Conference, it had been shown that by 1985 there might be a considerable market for nuclear power in the developing countries, part of which would be for small and medium-sized reactors.

"The introduction of nuclear power will, of course, not be the only matter in which the Agency will be called upon to help its Member States," said Dr. Eklund. "Particularly for the 'new' Member States, who are just now embarking upon nuclear energy programmes, the Agency's technical assistance effort is of crucial importance. The backbone of this programme is the exchange and training of young scientists, so that the other components of the programme may be used effectively: in other words, so that the expert will have a counterpart and the equipment can be operated. Experience has shown that there is also a need for the training of laboratory technicians, and we will be paying more attention to this need; in fact, the first training course in Africa for laboratory technicians was recently most successfully organized in Ghana. The increase in funds for technical assistance suggested by the Board will have the practical effect of allowing the Agency to meet somewhat over 50 per cent of the aid requested, as compared to 26 per cent in 1969. However, the actual value of the assistance given will attain only the 1962 level."

For a large number of developing countries medical and agricultural applications of nuclear techniques were still the areas of primary interest, as good returns could be expected from the very beginning of a programme. A second group of developing countries had already acquired some experience in nuclear applications, and their interest lay more and more in larger projects of the Special Fund type: for example, the institute for nuclear research in agriculture in New Delhi and the national centre for non-destructive testing and quality control in Argentina. To tap the resources available within the UN Development Programme, these countries must from January 1962 include requests for both small and large scale projects in a country plan covering a period of five years. It would be up to national atomic energy bodies to ensure that their projects were included in the countries' overall programmes.

In July Dr. Eklund and Mr. Upendra Goswami, Deputy Director General, Department of Technical Assistance and Publications, had had the opportunity of making on-the-spot checks of what the Agency was doing in some Latin American States, and what was expected from the Agency during the next few years. It was obvious that in some of these countries the electric utilities were already in a position to integrate substantial amounts of nuclear power into their grids, provided that the cost was reasonable. Intensive prospecting in some of these countries

Central Electricity Generating Board engineers specialising in non-destructive testing set up equipment at the Brimsdown power station, in the United Kingdom, preparatory to radiographing loop pipes from a steam turbine. The source used is 10 Curies of Iridium-192. Photo: UK AEA, courtesy of Pantatron Ltd. and the CEGB

was impressive, and would certainly lead to an increase in known uranium reserves. Fuel element fabrication was also the subject of considerable efforts in Latin America. In collaboration with UNIDO, there would be scope for a substantial contribution from the Agency to the process of industrial development in some of these countries.

The growth of world nuclear law, and safeguards

Dr. Eklund said he had the "definite impression" that quite a lot remained to be done in relation to the regulation of the peaceful uses of nuclear energy. The Agency would continue to assist Member States in establishing national nuclear laws which, if harmonized with each other, would facilitate the attainment of a world system of nuclear law. This task became even more important with the commercialization of nuclear power, and the increase in the trade in nuclear materials.

"An activity of growing importance in the future will be the application of safeguards under the Treaty on the Non-Proliferation of Nuclear Weapons," he said. The Treaty for the Prohibition of Nuclear Weapons in Latin America — the Tlatelolco Treaty — should also be mentioned. Negotiations based on the material prepared by the Safeguards Committee (1970) on the structure and content of agreements between the Agency and States party to the NPT were going ahead.

It goes without saying that in order to have an effective non-proliferation regime "the widest possible application of the Treaty agreements is necessary," Dr. Eklund pointed out. "The timetable set up in the NPT requires that most safeguards agreements come into force by the end of February 1972. As a matter of fact, no less than 50 countries should conclude agreements with the Agency before that date. It must be understood, however, that the initiation of negotiations is up to the States concerned, the Agency not being a party to the NPT. May I make it absolutely clear that the Agency is prepared, and is ready to enter into negotiations with those States who wish to do so as Parties to the NPT regarding the application of safeguards...

"The recommendations agreed upon by the Safeguards Committee (1970), in which some 50 States participated, did much, I think, to answer the reservations which some countries held about the acceptance of international safeguards. I hope that this might encourage those States which have not yet signed or ratified the Treaty to do so. Questions of practical interpretation of the safeguards agreements may arise in the course of further negotiations. Should there be a need I would use the usual procedure and call upon a group of experts for advice."

It was foreseen that the Agency's programme on peaceful nuclear explosions would grow as the nuclear weapon States continued to fulfill their obligations under Article V of the NPT. Apart from technical panels on the subject the Agency had also convened a group of experts to consider the question of appropriate international observation of peaceful nuclear explosions as foreseen in the Treaty, and a further technical meeting on cratering explosions was planned for mid-1972. "As a result of an inquiry to the Agency from Madagascar regarding the feasibility of a project involving the use of an explosive device, France, the Soviet Union, the United Kingdom and the United States have indicated their interest in participating in such a study."

Very present problems affected the everyday functioning of the Agency. The 1972 Budget, which totalled $16 561 000, had been affected by the revaluation of the Austrian Schilling and the difficulties being experienced in the world money markets. A salary increase for professional staff had come into effect; in order to make a positive contribution to the work of the Special Committee for the Review of the UN Salary System the Agency had suggested that UN remunerations be based on an average of the national civil service salary rates prevailing in five of the most developed countries, rather than on the rate in one and only one country (the US), as it was now, and had made other proposals.

For the coming year there had been virtually no room for programme increases other than for safeguards, for which special financing arrangements had been suggested. "A situation in which programmes are held static or even relatively decreased while common staff costs and thus the budget figure continue to rise is, obviously, not a healthy one," said Dr. Eklund. The re-deployment of some staff had enabled the Agency to make some savings; in planning the next six-year programme the Agency's efforts would be concentrated on programmes of the greatest benefit to Member States, at the same time avoiding too much diversification.

Dr. Eklund expressed the Agency's sincere appreciation for the continuing and generous support which the Agency received from the Austrian Government, as host. An architect had been chosen for the future headquarters building in the Donaupark, and the Austrian authorities had established a governmental body to supervise the next steps. It was expected that ground would be broken during 1972, and that the building would be ready for occupancy in 1976—77. In the meantime, additional office space had been provided by the Austrian Government in a new building close to the present headquarters building.

During the General Conference the representative of Mexico, Mr. F. Alba Andrade, re-affirmed the invitation of the Mexican Government to hold the next session in Mexico City transmitted earlier by the Resident Representative of Mexico to the Agency, Ambassador Luis Weckman-Muñoz. The offer was accepted unanimously.

Mexico has participated very actively in the activities of the Agency, particularly in the field of safeguards, since its inception. It was the first country to submit unilaterally all its nuclear activities to Agency safeguards through an agreement under the Tlatelolco Treaty. Mexico has also signed and ratified the NPT.

Professor José M. Otero Navascues, President of the Nuclear Energy Board of Spain and his country's representative on the IAEA Board, was elected President of the General Conference for 1971. He succeeded Dr. Vikram Sarabhai, Chairman of the Atomic Energy Commission of India.

Following elections during this session of the General Conference, the composition of the Board for 1971—72 is as follows: Argentina, Australia, Brazil, Canada, Ceylon, Chile, China, Colombia, Czechoslavak Socialist Republic, Egypt, Arab Republic of, France, Greece, India, Japan, the Netherlands, Norway, Portugal, Romania, South Africa, Syrian Arab Republic, Thailand, USSR, UK, USA and Zaire, Republic of.

At its first meeting, on the day after the ending of the General Conference, the newly constituted Board elected as Chairman for 1971—72 Baron C.W. van Boetzelaer van Asperen, Ambassador to Austria and Governor for the Netherlands. Baron van Boetzelaer van Asperen was born in 1915 and entered the Diplomatic Service in 1945. He has held various diplomatic posts in China, Indonesia, the USA, the Federal Republic of Germany and the UK; before his appointment to his present post he was Director of Information at the Ministry of Foreign Affairs, The Hague.

The vice-Chairmen of the Board for the coming year are Mr. S.J. Walpita (Ceylon) and Mr. J.Neumann (Czechoslavak Socialist Republic).