

The following speech was delivered by the Director General on 5th November:

# Statement to the 29th Session of the United Nations General Assembly

by Dr. Sigvard Eklund

The Assembly is fully aware of the world-wide economic and political dimensions of the present energy situation. It has become abundantly clear that energy problems in general and nuclear energy in particular must be dealt with in an international context and with increased international co-operation.

The present situation has had a profound effect on the economic prospects for nuclear power. As I told our General Conference last September, even if there is some decline in oil prices, electricity from nuclear power will still be cheaper in nearly all cases than that from coal, oil and other thermal sources. The size of plant at which electricity from nuclear power becomes cheaper than that from oil-fired plants now lies between 100 and 200 MW. This is comparatively small if one considers that most of the plants now being ordered in the industrial countries are 1,000 MW or above. This means that nuclear power is economically attractive to about 40 developing countries which are interested in smaller plants and should account for more than half the new electricity plant capacity they will build in the next decade.

Economics are not, however, the only factor. The widespread acceptance of nuclear power is still inhibited by concern over its environmental impact. Supply problems may appear as the demand for fuel grows and this year has been marked by sharply increased concern that nuclear weapons may proliferate as nuclear energy spreads. This concern was accentuated by the addition of another country to the number of countries possessing nuclear explosives. Nevertheless, nuclear power is, for the time being, the only available alternative to meet the steadily increasing demands for energy throughout the world. The problems that must be overcome with the spread and growth of nuclear power influence priorities set by the IAEA in carrying out its own activities.

Let me briefly outline the Agency's priority programme at this time:

(a) It is in the interest of every country that nuclear power should maintain its outstanding safety record in this period of expansion. Increased international efforts concerning safety are imperative. Thus we are moving away from the previous case by case approach in dealing with nuclear power plant safety toward the formulation of comprehensive, internationally acceptable safety and reliability standards to be used by regulatory bodies, utilities, plant manufacturers of the Member States and by the IAEA itself. The World Bank may wish to consider the acceptance of these standards as a condition for financing nuclear plants. We expect that this programme will further contribute to public acceptance of nuclear power, to plant safety, to an easier flow of trade in plant components and will give guidance where it is most needed.

(b) The situation with regard to irradiated fuel reprocessing capacity indicates that much has to be done with a view to detailed planning of the entire fuel cycle. The most economical sizes of reprocessing plants are very large and may service reactors of a total capacity of at least 30,000 MW; this is half the world's installed capacity at this time.

Economic grounds alone require that fuel reprocessing be done on an international basis, perhaps by regional plants. Since reprocessing plants are the source of 99% of nuclear wastes, there are also obvious advantages from a safety point of view in minimizing the number of reprocessing plants and waste storage sites. Prevention of diversion also becomes easier if reprocessing plants are few in number and operated under regional or international auspices. This consideration and the problems of physical security would also encourage locating fuel fabricating plants on the same site as reprocessing facilities. In short, economics, safety, safeguards and security all reinforce the need for joint international efforts in planning, building and operating reprocessing plants, storage sites and, possibly also, fuel fabrication plants.

The IAEA is taking several actions in this connection. It is codifying the principles for the selection of waste disposal sites and it is harmonizing national policies of waste management. In March of this year the IAEA established a standing International Working Group to ensure the fullest exchange of information on the management of radioactive wastes and to give direction to the IAEA's own programme. We shall look into the possibilities and problems involved in the joint construction of reprocessing facilities. The IAEA has also completed the task entrusted to it by the London Convention on the Prevention of Marine Pollution, and has prepared a provisional definition of high-level radioactive wastes that must not be dumped at sea. It has also elaborated the procedures to be followed when low-level wastes are disposed of at sea. These procedures will be kept under constant review.

(c) Most of the programmes I have outlined are of importance to all IAEA Members. Turning now specifically to the developing countries, their first problem is to obtain sound and impartial guidance on their overall programmes. To meet this need, IAEA will expand its advisory services in power planning and project implementation. We are publishing guidelines designed to help Governments and utilities in making decisions at the early stages of a nuclear power programme, including the staff they will need. We are also bringing up-to-date and extending the survey that IAEA carried out last year of the prospects for nuclear power in a number of individual developing countries.

(d) The efficient and safe operation of nuclear power plants requires specialized planning, engineering and other technical staff. Next year, in addition to the normal programme of technical assistance, the IAEA will begin with a special nuclear power training programme, focusing on the planning and construction of nuclear power plants. It will also include fellowships for on-the-job training and construction and safety techniques, as well as some highly specialized courses. We hope to have World Bank support for this special training programme.

(e) In 1974, for the first time, the IAEA has served as a channel for the supply of nuclear fuel for power reactors to its Member States, namely Mexico and Yugoslavia. It is likely that this service will expand in the future.

(f) In 1977, the IAEA will hold a major International Conference on Nuclear Power and the Fuel Cycle and the problems confronting it. This meeting will be designed to give

**Government officials, economists and utilities the type of hard information they will need to deal with a massive expansion of nuclear plant capacity.**

I would like to make some comments in relation to these programmes:

Despite occasional setbacks, there are signs that public fears about the safety of individual nuclear power plants are slowly diminishing and that the concern of the environmentalists is directed more to the long-term problems of waste management and to the risks of nuclear material falling into the wrong hands. Recent extremely comprehensive studies have confirmed that the risks that we run by the operation of nuclear power plants are, indeed, very small.

My second comment relates to the Agency's work on energy. There is a proliferation of energy studies, energy projects and even proposals for new international machinery. The problem is one of overlap rather than gap and the solution lies towards concentration of responsibilities so that, for instance, developing countries should know where to turn in the energy field just as they do in health and other fields. The IAEA is equipped to play this role.

Thirdly, I would like to welcome the location of the United Nations Scientific Committee on the Effects of Atomic Radiation in Vienna. The importance of UNSCEAR's work in keeping under review the total environmental impact of nuclear tests as well as nuclear power is a function of its great scientific authority. The IAEA hopes to increase its support to UNSCEAR in the future.

Technical assistance in the nuclear energy field is especially important at this time when developing countries are under pressure to diversify their sources of energy thus reducing their dependence on oil. Long-term planning is imperative; the time-lapse between the decision to install a nuclear plant and the generation of electricity may be eight to ten years. We foresee that in future the Agency should be able to help developing Member States to formulate the totality of their medium and long-term energy programmes in the framework of general energy planning and to help them implement each successive step. Such an integrated approach will increase the impact of IAEA's assistance.

The question of technical assistance financing has received much attention during the year, and I am pleased to report that the target for contributions to the IAEA's own voluntary programme has been increased in 1975 by 50%, namely to \$4.5 million. The IAEA is now also executing 20 large-scale UNDP projects compared with nine only a year ago. These 20 projects represent a value of \$3.5 million, an increase which reflects the higher priority that Governments themselves are giving to nuclear power in the requests they submit to UNDP.

Thermonuclear fusion may become an inexhaustible source of energy in the future. This month the IAEA will hold in Tokyo the fifth major International Conference on Thermonuclear Fusion. We shall henceforth hold a major fusion conference every second year to review both advances in theory and practical engineering for fusion reactors. In addition, we sponsor several other programmes, including a bi-monthly journal. By doing this the Agency keeps the progress in the field of controlled thermonuclear fusion under constant observation. As it is envisaged now, however, practical results in the form of commercial generation of electricity from fusion cannot be expected before the first decade of the next century.

Let me now turn to another major aspect of the work of the Agency; safeguards, in particular in connection with the NPT, and the related question of the peaceful uses of nuclear explosions. The Conference to review the operation of the NPT will be held in Geneva in May next year and will draw up a balance on the progress made since the Treaty came into force on 5 March 1970.

In this regard I must inform the Assembly that 36 of the 80 Non-Nuclear Weapon States that are Parties to the Treaty, have not yet completed the negotiation of the Safeguards Agreement with the IAEA which the Treaty requires and for which, in nearly all cases, the deadline has already passed. The Secretariat of the IAEA is ready to help these countries to fulfil their obligations so that they may attend the Conference in May with their legal requirements fully discharged. May I suggest that any Delegation wishing to have further information about this matter should consult the IAEA Office at the United Nations.

If the Review Conference next year is to give renewed momentum to the implementation of the NPT it is essential that the major industrial countries, both nuclear-weapon States and non-nuclear-weapon States, should reaffirm by deed as well as by word the importance they attach to the Treaty. At our recent General Conference I made a special appeal to the European Community to complete the process of NPT ratification which is already far advanced, to other industrial States that have signed the Treaty to do the same and to the several threshold countries of great importance from a nuclear point of view that have neither signed nor ratified the Treaty. In the Assembly, I should like to confirm this appeal and extend it to all countries. They would do themselves as well as the International Community a service by demonstrating, through accession to the Treaty, their determination to use nuclear energy for peaceful non-explosive purposes only. I also appealed to the Depository Governments, even though Article VI is not of direct concern to the Agency, to continue efforts for the implementation of Article VI, and in particular their efforts to achieve a complete Test Ban Treaty which would be of cardinal importance as a means of preventing further proliferation.

The experience of the Tlatelolco Treaty may be of benefit to other regions although it cannot replace the NPT. Regarding nuclear-weapon-free zones, I agree with the statement made in the First Committee a few days ago: "Such zones must not be an excuse on the part of the participating States to abstain from adhering to the NPT."

There have been some positive developments in connection with the Treaty during the year. The Governments of the USSR, the UK and the USA have announced that they will inform the IAEA promptly and continuously of imports and anticipated exports of nuclear material. This information will significantly help the IAEA to implement its safeguards. Some ten exporting States have thereafter informed the Agency of decisions they have taken to apply a minimum standard of conduct in implementing Article III. 2 of NPT and, in particular, to require the application of IAEA safeguards in respect of nuclear material and other significant items exported to any non-nuclear-weapon State. This will help to ensure that the requirement of effective safeguards does not become an issue of commercial competition. Further progress has been made in developing and streamlining the IAEA's own safeguards. As a result, the rapid expansion of this work (illustrated on page 57 of the IAEA Annual Report) has led to a much smaller growth in safeguards costs and there has been no need to increase manpower between 1974 and 1975.

We have also been encouraged by the statements at this Session of the General Assembly which reflect the most serious preoccupation with the dangers of proliferation of nuclear weapons. The speed with which nuclear power is bound to spread and the reminders we have received from recent events show that there is no time to lose. The supply policies followed by the Depository Governments and by other major exporters at this juncture and in future will be of great importance in enhancing the acceptability of NPT and ensuring effective safeguards.

The importance of maintaining the momentum of the NPT is not only a question of preventing the further spread of nuclear weapons, crucial though that is for the long-term prospects for peace. The Treaty is a major, but only a single, step along the road to arms control and disarmament. It has been described as a bridge that must be crossed before other more far-reaching measures of disarmament become possible. The non-nuclear-weapon States Party to the Treaty, in accepting international verification have set an example which must be more widely followed if we are to move closer to the goals that all countries profess to seek "cessation of the nuclear arms race at an early date", "nuclear disarmament" and "general and complete disarmament under strict and effective international control". I have taken these quotations from Article VI of the Treaty itself.

Safeguards are related to the question of physical security to prevent misuse of nuclear material by individuals. The IAEA is helping Member States to build up national systems of accountancy and control that they will need for both safeguards and physical security purposes. We have issued a guide on the physical protection of nuclear materials and shall now explore the prospects for an international agreement on minimum standards for physical security.

As regards peaceful nuclear explosions, it will be recalled that both the Board of Governors and the General Conference of the Agency concluded in 1969 that the performance of the various functions described in Article V of the NPT were within the Agency's technical competence and the scope of its statutory functions. In 1971, the General Assembly took the same position and noted that "the IAEA is an appropriate organ to exercise the functions of an international service for nuclear explosions for peaceful purposes, taking into account the relevant provisions of the Treaty on the Non-Proliferation of Nuclear Weapons".\* It was also decided that the Agency should approach this subject on an evolutionary basis, that is to say, following the developments of this technology and devoting its attention initially to the exchange and dissemination of information. This has been done by convening technical panels at yearly intervals and dissemination of information through the International Nuclear Information System (INIS).

In 1972 the Board approved guidelines for the international observation by the Agency of nuclear explosions for peaceful purposes under the provisions of NPT or analogous provisions in other international agreements. Also, in September 1974, the Board approved procedures for the Agency to use in responding to requests for services related to PNE. The necessary expertise has been established within the Secretariat to follow up work in this field and keep abreast of technological developments.

The next technical panel to be held by the IAEA will meet in January 1975 to review the present state of the technology. It is expected that some legal aspects, and particularly the

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\* General Assembly resolution A/RES/2829 (XXVI).

health and safety aspects of such explosions, will require very detailed studies. The economics of this technology also deserves careful study. The matter will again be reviewed by the Board at its February 1975 meeting.

It must be pointed out, however, that the interest shown by Member States so far has been very limited and that no project has yet materialized. The recent Board decisions together with the procedure for appropriate international observation on this subject have been communicated both to this Assembly and to the Agency's Member States.

It would no doubt be an important development if States in possession of nuclear explosives were to volunteer to accept international observations when they carry out a nuclear explosion for peaceful purposes and if they were to help develop proposals for the international regime that should be applied for explosions of this kind when the goal of the complete weapons test ban is achieved. In a year that has witnessed nuclear tests by six countries, the urgency for an agreement along these lines becomes more obvious.

On another matter, I would like to refer to the question of the review of the relationship agreements between the United Nations and members of the United Nations family. As far as the IAEA is concerned the existing legal framework has proved satisfactory, and we in the Agency see no need to re-open this matter.

I would like to note the good relationship existing between the Agency and UNIDO. Through our joint services in certain areas we are economizing and achieving greater efficiency. The permanent Headquarters which Austria is building for IAEA and UNIDO are expected to be ready for occupancy before the end of 1978. It will greatly enhance Austria's already significant capacity for serving as host to international organizations. It is timely to pay tribute to Austria as our Host Government and Vienna as our Host City for their unfailing assistance and generosity. I should like to place on record that in the IAEA's experience the Government of Austria has made every effort to meet our needs during the last seventeen years.