

The next 10 years: Major challenges shaping the IAEA's future

Prime concerns of the past few years are defining the coming decade

by Dr Hans Blix

Looking back at some of the major issues which have shaped the Agency in the past, one must admit that many of the fundamental ones which had a major impact were not foreseeable many years in advance. Safeguards were certainly expected to be an important function, but the substantial augmentation of safeguarding responsibilities resulting from commitment of many States to full-scope safeguards under the Tlatelolco and Non-Proliferation Treaties was not. The slow introduction and expansion of nuclear power has contrasted with the Agency's own earlier optimistic forecasts. The two reactor accidents at Three Mile Island and Chernobyl were, of course, not anticipated, nor was the extent of demands raised afterward by our Member States for stronger international co-operation in nuclear safety. On the other hand, from the very beginning food irradiation was considered by specialists to be an obvious and appropriate alternative to other preservation methods and a major example of where nuclear technology would make an early and significant contribution to the interests of developing countries with their strong dependence on agriculture both for consumption and export. Few thought that it would take 30 years before approval by the Codex Alimentarius and that public opposition would still exist today in many countries.*

It is thus with a certain degree of humility that I now try to gaze into the crystal ball. Anyone who has ever tried forecasting — for example of electricity demand or nuclear power growth as we in the Agency have done — knows that the future will prove him wrong. It is just a question of "by how much?"

Some guidance can be obtained by recalling the fundamental character and mandate of the IAEA:

- It is an intergovernmental organization in which Governments of Member States can co-operate if the political will to do so is there.
- It is not, like the specialized agencies in the UN family, a sectoral organization looking into problems

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* The Codex Alimentarius is the international body of the Food and Agricultural Organization and World Health Organization that sets international food safety and health standards.

and needs in nutrition, health, industrial development or some other particular field. Rather, we are charged by our mandate to promote the application of a technique wherever it may be appropriate while ensuring to the best of our ability that any assistance we give is used only for peaceful purposes. The spectre of nuclear technology being appropriated to destructive ends evokes the need for permanent vigilance in facilitating its availability and use.

In several ways, the Agency has remained unique. In one important sector of its work, energy production, there is no other UN organization with a clear mandate. This has led Governments to turn to the IAEA not only for advice on nuclear energy, but sometimes for more general advice on energy planning *per se*. Although this is a responsibility that lies beyond our mandate, we have sought, quite successfully thus far, to co-operate with other international organizations to apply assessment and planning techniques that we devised to respond to enquiries from developing countries regarding the viability of nuclear energy for meeting their energy development needs. This co-operative experience should serve as a pointer for dealing with issues in other areas in the future.

In broad terms, the main challenges before us are clear:

- To facilitate further development and application of nuclear isotope and radiation techniques where they are viable and needed in full recognition of the fact that other non-nuclear techniques are also being developed and may in the future replace the nuclear techniques of today
- To help maintain and expand the availability of safe nuclear power as an environmentally benign energy option for the future
- To help maintain the non-proliferation regime.

These areas of activity not only define our future challenges, but also the priority concerns that have dominated the Agency in the past several years, namely: (a) technology transfer and technical co-operation; (b) safety and radiation protection; and (c) safeguards. For the Agency to stay true to its mandate, it is necessary to maintain a balance between these areas, but that

balance will become ever more difficult to sustain if the zero-growth limitation on our budget of the past several years is continued much longer. Member States must face the reality that increasing demands for Agency services require the provision of commensurate support if the quality of service expected is to be met. Failure to effectively address this issue can only lead to eventual undermining of our capacity to successfully confront the substantive challenges before us.

Let me take a moment to elaborate:

In the area of technical co-operation and technology transfer, it will become necessary to define more sharply the contribution that nuclear techniques can make, and their importance to the process of building up basic education and research. It also will be important to focus on integrating nuclear techniques with others in major sectoral projects, of which the Amazonas project in Brazil assessing the ecological consequences of deforestation is one striking example.

Along the same line, and particularly in respect of nuclear power, while bilateral technology transfer will always be more important than what can be provided multilaterally, the latter still is of crucial importance. Our experience shows that the Agency's assistance in developing manpower and helping to prepare the important decisions on nuclear power has been a major factor in optimizing the success of large-scale technology transfer. In the future, it will be important to see how we can make this assistance even more effective especially in countries which in the decade ahead may wish to consider the viability of the nuclear option for themselves. In the light of the capital costs and magnitude of nuclear power projects, the Agency must focus on how to avoid delays and especially the aborting of programmes which often results from inadequate planning and insufficient attention to the infrastructure requirements for successful nuclear power ventures.

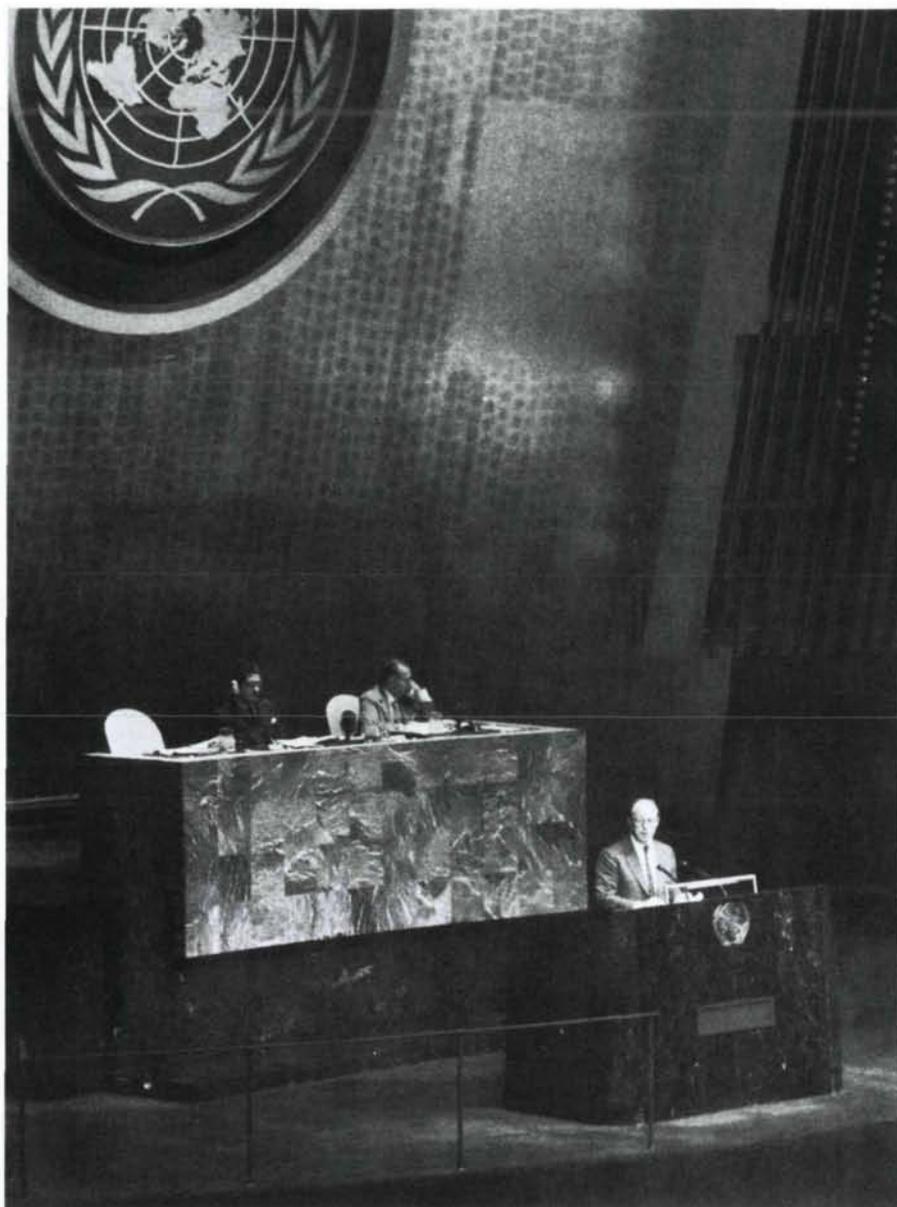
On the second point, safe nuclear power, there is no doubt that confidence in nuclear energy has diminished as a result of the accidents at Three Mile Island and Chernobyl. This loss of confidence extends beyond nuclear power to radiation in other areas, as we have recently seen in regard to food irradiation. I view the regaining and the strengthening of this confidence as one of the major challenges of the future.

It is clear that the ultimate responsibility for nuclear safety rests with our Member States. Only national authorities have the capacity to establish detailed safety and radiation protection rules and to supervise and enforce their implementation. But, as we saw demonstrated in the wake of Chernobyl, Member States turned to the Agency as a forum for closer co-operation when the urgency was there. A number of elements of what could be called an international safety regime already were in place, but important additions were made with the establishment of two conventions related to notification and emergency response in the event of a nuclear accident, and the expansion of the Agency's nuclear safety programme.

The Agency demonstrated that it could react in an urgent situation and that it could meet the demands of Member States when they wished something to be done. We all hope that no further emergencies will arise and that the next decade will make it possible to consolidate the new activities which have been launched. Among other things, it will be necessary to see how our radiation protection and nuclear safety standards can be used to help improve confidence in nuclear power, and to maintain the highest quality in our advisory services for operational safety (OSARTs), radiation protection (RAPATs) and waste management (WAMAPs). While accident prevention measures must have the highest priority, accident mitigation must also be of high importance. Even if we hope never to use them, the emergency response mechanisms of the two conventions on early notification and emergency assistance must be put in place and seen to be functionally operative. Finally, despite Chernobyl and Three Mile Island, the nuclear power industry has reached a high level of maturity in several countries as shown by excellent results in construction and operation. This level of excellence must become the objective for all nuclear power plant owners. The Agency, working under its mandate for nuclear power development and technical co-operation, can play a meaningful role in helping to achieve this result by supporting co-operation and exchange of operational experience between plant owners everywhere. Once again, however, I must recall to our constituents the fact that these activities, which are growing in number and complexity, depend very fundamentally on adequate resources.

As for the third point, safeguards, the Agency's safeguards system is unique in the world. It is the first international verification system with on-site inspections that has been established, and it has demonstrated that such a system can work. As mentioned, treaties like Tlatelolco and the NPT make it possible for States to voluntarily submit the totality of their nuclear activity to safeguards. That such a full-scope safeguards arrangement can be reached even outside treaty structures is underscored by the agreement concluded last year between IAEA and Albania. Without doubt, today's extensive international trade in nuclear equipment, fuels and technology would not have been possible without the Agency's safeguards system. We are now facing an increasing workload for two reasons: On the one hand, new facilities are coming on line in NPT countries, automatically increasing the demand for safeguards. On the other hand, all suppliers today require safeguards on their transfers so that Agency responsibilities are growing even outside NPT requirements. In addition, there is every indication that newly emerging suppliers not already bound by the NPT intend to require IAEA safeguards on their exports.

A major question is, of course, what impact disarmament agreements could have on Agency safeguards. It is clear that it is a model which is being carefully studied



IAEA Director General Hans Blix addressing the 40th Regular Session of the United Nations General Assembly in 1985 (Credit: UN Photo)

for verification in many disarmament contexts. That does not mean that the Agency would necessarily be called upon to carry out that verification. But agreements involving the shift of fissile materials from weapons into the civilian sector could result in invoking IAEA safeguards to verify their continued peaceful use. And agreements involving undertakings to cease further production of fissile material for military purposes could also result in invoking Agency safeguards. It is already the case that some States require Agency safeguards on material transferred to the weapon States, and this pattern is expected to increase over time, making increased safeguards responsibilities in weapon States much more likely.

The important challenge in this context is the continued credibility of the Agency's safeguards. Without that credibility, it will not be able to continue to keep open the international trade on which nuclear power

programmes are dependent. In the present market situation, which through its supply diversification possibilities in itself provides significant supply assurances, the continued reliance on Agency safeguards is of vital importance. And in criticizing the present non-proliferation regime, it must be recognized that, so far, the questions have started where Agency safeguards have ended.

In conclusion, there are many important challenges ahead for us to meet. The past few years have brought some disappointments, as when the value of Agency programmes has been recognized but funding has not been granted and when the remunerative conditions for the staff — the most valuable asset the Agency has — have been allowed to deteriorate. Still, competence and flexibility, two of the hallmarks of the Agency since its inception, should help us to meet these challenges, as they have helped us to meet other challenges in the past.