Viewpoint:

Looking back

The stages of the IAEA's evolution are products of the times

by David Fischer

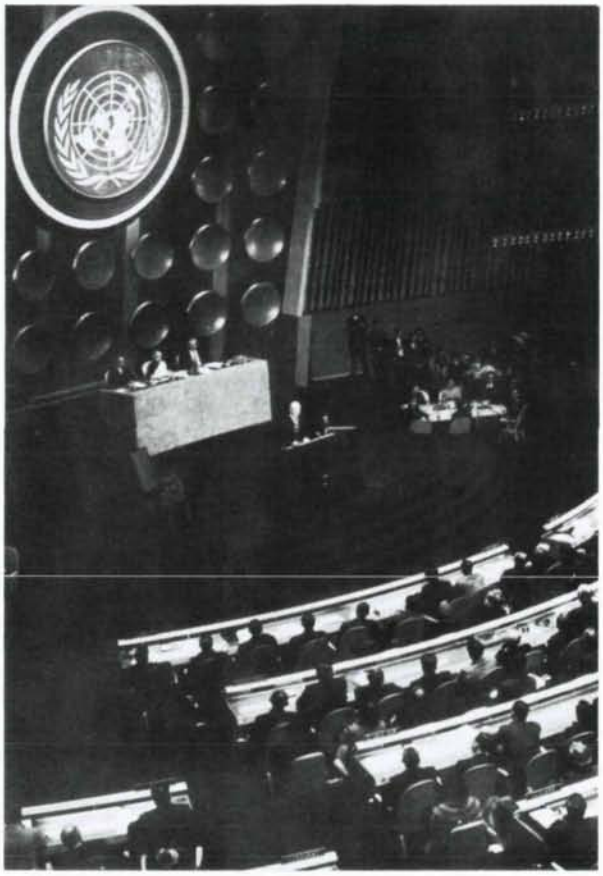
The Agency got off to a shaky start. When President Eisenhower proposed the creation of an international atomic energy agency in December 1953 he had in mind four main tasks. By 1957, when the Agency was at last under way, not one of the four was in early prospect — if in prospect at all.

The chief purpose of the Agency would be to reverse the nuclear arms race. It would do this by drawing down Soviet and American stocks of fissile material until neither would have enough for a surprise "knock-out" blow — "first-strike capability" in today's jargon. There would also be, in time, a "freeze" on the production of new fissile material, which the Agency would monitor.* The first idea is amply reflected in the IAEA's Statute, which has several long-forgotten clauses authorizing it to set up stores of fissile material and recruit guards to watch over them.

By 1957 it was unhappily clear that this disarmament mechanism would not work.

At its second task, the Agency would parcel out these stocks of presumed-to-be scarce material "... to serve the peaceful pursuits of mankind" and especially "... to provide abundant electrical energy in the power-starved areas of the world". But in 1957 competitive nuclear power was still much further away than the President had imagined and supplies of nuclear material were in glut. There would have been few customers for the Agency's stores of fissile material had they existed.

The third task would be to ensure, by applying safeguards, that the material would be used for peaceful purposes only. But by 1957, and for several more years, the Agency had no safeguards and nothing to safeguard. Such supplies that were being transferred were under bilateral US safeguards or, from 1958, under those of the European Atomic Energy Community (Euratom), which had succeeded in drawing up a system while the Agency was still wrestling with the problem. Or they were transferred under no safeguards at all.



8 December 1953. US President Eisenhower makes his "Atoms for Peace" proposal to the United Nations General Assembly.

When President Eisenhower made his speech almost all information about nuclear technology was a closely guarded and much sought-after secret. The President foresaw that the Agency would be the world's clearing-house for this information.* But even this role was initially denied the Agency. In 1955, the United Nations had convened the first International Conference on the Peaceful Uses of Atomic Energy in Geneva. It was a huge success, and by the time it finished almost all secrets of nuclear technology had been laid bare. The UN repeated the conference in 1958 while the Agency looked on.

In the Board room

Politically, too, the Agency was making heavy weather. The late Ralph Bunche, visiting Vienna on behalf of the UN Secretary-General, remarked that the Cold War raged more fiercely in the Board room of the IAEA than in the halls of the UN. The Board met six or seven times in 1958, each time in week-long often acrimonious sessions, debating which delegation should represent China, whether the German Democratic Republic should be admitted to membership and what

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* See Henry Sokolski in *Atoms for Peace*, Westview Press (1985) p.44. Also Robert R. Bowie and James R. Schlesinger in that same book.

* This task, as well as the third one, were implicit in Eisenhower's speech. They became explicit in the Agency's Statute, from the first 1954 draft onwards.

rules should be adopted under the Statute to govern the conduct of the Director General (who was required to report in writing every 2 months on the doings of the Secretariat). The Board was not merely politicized, it was polarized. Matters were not helped by the fact that the Director General was an American and the first Chairman of the Board was Czechoslovak. In a vicious circle, the Agency's inability to perform its assigned technical tasks was aggravated by political confrontation in its executive body. The French Governor was reported to have said that the whole enterprise was premature.

Promoting the atom's uses

Ironically the Agency found a partial solution by undertaking tasks in two fields that are nowhere mentioned in its Statute: technical assistance to developing countries and promoting the use of radioisotopes and radiation. The Director General was also fortunate in his chief lieutenants. Paul Jolles, a Swiss diplomat steered the Agency through some of the stormiest waters and recruited Henry Seligman, Director of the Isotope Division at Harwell, to become the Agency's chief scientist (and isotope promoter).* Henry Seligman managed to persuade the Board to set up the Seibersdorf Laboratories and the Laboratory at Monaco (for marine radioactivity) and he later played a leading role in creating the International Centre for Theoretical Physics (ICTP) in Trieste — despite his irreverent habit of addressing the Board as "... you people ...". Upendra Goswami, formerly of the small and select ICS (Indian Civil Service) that ran India before independence, launched the first technical assistance programmes. Work began on drafting international nuclear safety standards and codes.

Still, this was hardly the reason for which nations had agreed to set up the IAEA.

Drawing up the safeguards system

The wheel of fortune began to turn again in the early 1960s. The Cold War was drawing to an end, détente was on its way. The new Director General (Dr Sigvard Eklund) a highly regarded scientist who had served as President of the second Geneva Conference in 1958, enjoyed the confidence of Western nuclear establishments and, in due course, gained that of those in Eastern Europe. He trimmed a bureaucracy grown somewhat unwieldy and sought to give a more scientific and technical complexion to the IAEA's work and thus to steer it into calmer seas. In 1963, the views of the USA and the USSR about safeguards began to converge. It was possible now to draw up a complete safeguards system and to take over responsibilities previously exercised by the supplying country. In Geneva, the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) came into prospect.

Agency comes of age

After Oyster Creek, the first truly cost-competitive nuclear power plant, there was a great surge of orders for nuclear power, at first in the USA, then in Western Europe, Japan, and Eastern Europe, and eventually in the developing countries. It seemed that at last, the "Golden Age" of nuclear energy had arrived.

The new spirit of co-operation and confidence changed the IAEA. The Board's sessions shrank to two a year, each lasting only two days.* The Secretariat acquired the habit of putting forward proposals to the Board only if consultations had shown that there would be a consensus in their favour. Governments began to take the IAEA more seriously, to send only senior officials to its meetings and to propose (usually) only qualified candidates to work on its staff. The results were quite impressive. Between 1964 and 1971, the Agency was able to launch two comprehensive safeguards systems. The first computerized international nuclear information system (INIS) also began to function and rapidly expanded. Work started on a comprehensive set of nuclear safety standards, NUSS. Projects on nuclear power and nuclear desalting flourished and generated optimism.** There was similar optimism about the use of nuclear energy in agriculture. But in the later 1970s, the clouds began to gather again.

Awareness of potential

Since then, the public's confidence in nuclear power has been severely jolted, especially but not only by accidents at Three Mile Island and Chernobyl. Today the NPT has run two-thirds of its initial course and is approaching its critical test. There have been disquieting reports that nuclear thresholds may soon be crossed. Politics have returned to the IAEA though the arguments are about issues different from those of the late 1950s. And there are, again, unduly tight constraints on the Agency's budget.

But there are also several positive pointers.

Paradoxically the recent misfortunes of nuclear power, as well as concern about nuclear proliferation, have made governments more aware of the value of the services the IAEA can provide. This was already clear at the Third Review Conference of the NPT in 1985.

* Dr Jolles returned in 1960 to a highly successful career in the Swiss service in charge of Swiss foreign economic policy. He is now President of the Nestlé Corporation. Dr Seligman, who became Deputy Director General for Research and Isotopes at the IAEA, now lives in Vienna and remains active at the Agency.

* Plus a short meeting before and after the General Conference.

** The nuclear desalination project in the Middle East was one of several proposals to use nuclear energy jointly for generating electricity and desalting the sea; and the Wien Automatic System Planning (WASP) package, a methodology for planning the expansion of electric power generating systems, surveyed the market potential for small nuclear plants in developing countries.

IAEA Director General Hans Blix (front at left) leads a press conference following the Chernobyl accident in April 1986. The international response to the accident included adoption of two conventions in the field of nuclear safety that are under IAEA auspices. (Credit: Katholitzky for IAEA).

The IAEA's effective performance after Chernobyl has since highlighted and enhanced its role in nuclear safety and has further strengthened its authority.

If current arms control negotiations bear fruit, there is a very good chance for the success of the next NPT extension conference in 1995. Perhaps, too, the IAEA will begin to play some of the roles that Eisenhower foresaw for it — as a custodian and distributor of fissile material extracted from dismantled warheads, and, eventually, though this is more remote, as the monitor of a cut-off of the production of nuclear material for military purposes.

As for nuclear power, the public will surely continue for some time to value safety more highly than cheaper electricity or "energy independence". If confidence is restored, by enhancing the safety of existing designs and eventually developing new ones, it is difficult to imagine that nations would ignore the only proven technology that offers them a virtually inexhaustible source of energy.

If superconductivity can be used commercially it may, in time, open exciting new prospects for nuclear power (as well as for remote "renewable" energy sources and deposits of fossil fuel like the Amazon, the Congo, and hydrocarbons in Siberia). Superconductivity would expand the range of applications of electricity and, in time, the demand for electric power. It would open the way for the remote siting of nuclear power plants, perhaps for new generations of reactors in "energy parks". Remote siting might reduce public concern about nuclear safety (though not the need to maintain the highest standards) and cheap long-range transmission of cheap power might encourage nations to treat electricity more like a commodity to be traded across frontiers like coal, oil, or natural gas. This trend is already clear in Western Europe but superconductivity would obviously give it a great boost.

Whatever the future may hold, nuclear energy in one form or another will continue to be a matter of supreme international interest. The IAEA's task — of seeking to enlarge the contribution of nuclear energy "... to peace, health and prosperity throughout the world..." and to ensure, "... so far as it is able ..." that nuclear energy is used only for peaceful purposes — will grow even more challenging and vital as nuclear power expands and as nuclear technologies become more accessible — for peace or war.

Page from the past...

Donations and voluntary contributions from Member States have played a central role in the Agency's technical assistance programmes. Shown at far left is Dr Henry Seligman, IAEA Deputy Director General for Research and Isotopes in 1963, with members of the French Government, which donated a semi-hot cell for remote handling and processing of radioisotopes at the Agency's Seibersdorf Laboratories. The first voluntary contribution to the IAEA came in 1957 from Joe Santore, a school boy from the USA, who organized a classroom collection. He is shown in the top right photo with (from left) Dr Ralphe Bunche, Under-Secretary of the United Nations; Mrs Santore, and Mr Sterling Cole, Director General of the IAEA in 1957.

The IAEA's safeguards system has been one barrier to the spread of nuclear weapons. The Agency's first safeguards inspection was in 1962 at the NORA research reactor in Norway. The system was largely developed under the administration of Dr Sigvard Eklund, IAEA Director General from 1961–81, shown here as he takes the oath of office. At the right, Ambassador Oscar A. Quihillalt of Argentina, who served as President of the IAEA General Conference in 1961. Today, the IAEA has safeguards agreements with 96 States.