

# TRANSCENDING SOVEREIGNTY IN THE MANAGEMENT & CONTROL OF NUCLEAR MATERIAL

BY LAWRENCE SCHEINMAN

**E**ffective control of nuclear material is fundamentally important to the credibility and reliability of the nuclear non-proliferation regime. Under the Treaty on the Non-Proliferation of Nuclear Weapons (NPT), international safeguards are applied to non-nuclear-weapon State Parties for the purpose of verifying compliance with their undertakings not to seek to acquire nuclear weapons or explosive devices by assuring that safeguarded nuclear activities and material are not diverted from their intended peaceful use. Reflecting the sovereign State basis upon which the international system rests, the control and protection of nuclear materials within the State are the responsibility of the national authority.

This division of responsibility between international verification of non-diversion on the one hand and national responsibility for material protection on the other has worked quite well over time. But it has not created a seamless web of fully effective control over nuclear material.

In the wake of the September attacks on the United States, it has been said repeatedly that we are living in a new world characterized by a terrorism whose appetite is bounded only by the capabilities available to it. Nuclear capabilities are among those to which terrorists aspire. To this might be added access to radiological sources and the threat of nuclear sabotage. This access must be prevented. The question is how.

To begin with, we need to think beyond the boundaries between the sovereign State and the international system within which we have lived from the outset of the nuclear age; in particular to balance the traditional demands of sovereignty and the legitimate demands of the international community to be assured that all States are protecting nuclear material adequately.

Recognizing that nuclear material is the key element in access to nuclear weapons or explosive devices and the most difficult to acquire, and that it can also serve as a source for radiological terror, we need to think systematically, compre-

hensively and holistically about the management and control of nuclear material. This means thinking vertically in terms of integrated material control structures from the global regime at one end to the local operator of a nuclear facility at the other.

To be optimally effective, barriers against unauthorized access to nuclear material need to be inclusive. We need to explore how to accommodate traditional State sovereignty with the demands of an evolving transnational, globalizing environment so that we can maximize the effectiveness of tools available to us to prevent unauthorized access to dangerous materials, whether by States or by sub-national actors, and where necessary craft new ones. Diversion safeguards, physical protection of nuclear material, and control over illicit trafficking of nuclear material and preventing sabotage at nuclear facilities or locations are all parts of this seamless web.

The IAEA was sharply criticized for failing to spot Iraq's extensive clandestine nuclear programme, which only became known in the aftermath of the Gulf War. This led to efforts to significantly strengthen the safeguards regime as codified in the May 1997 decision of the IAEA Board of Governors

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to approve a model Additional Protocol (INFCIRC/540) to safeguards agreements.

On the positive side, the Additional Protocol provides the IAEA with important new capabilities including significantly greater access to information regarding all State activities related to the use of nuclear material, greater inspector access at nuclear sites, very short notice inspections, advanced surveillance technologies, and environmental sampling.

On the negative side, the rate of accession to the Additional Protocol has been slower than anticipated and disappointing. Whether as a result of inertia, bureaucratic impediments, concerns about intrusion on national sovereignty or for other reasons, only 22 of the 187 Parties to the NPT (not yet including any of the five nuclear-weapon States, all of whom have voluntary safeguards agreements with the IAEA under the NPT regime) have ratified the Protocol and entered it into force. Only two of these are States with significant nuclear activity.

There are a number of verification-related measures that can and should be considered that would strengthen the IAEA — the preeminent international non-proliferation institution — and in doing so, contribute to international security, stability and predictability. There are other measures that relate to physical protection of nuclear material that also should be pursued with deliberation. What follows is my view of what should be done in both of these areas, always having in mind the importance of

seeking greater coherence and integration in the matter of controlling and managing nuclear material. Radiological and sabotage scenarios are not considered in depth for the moment.

## MEASURES REGARDING INTERNATIONAL SAFEGUARDS

In so far as safeguards are concerned, six points are to be made:

■ **INFCIRC/153 Agreements: Completion by all NPT Parties of the required safeguards agreements with the IAEA.** Fifty States Party to the NPT still have not entered into treaty-obligated safeguards agreements with the IAEA. This not only leaves gaps in the system, but it undermines the normative strength of the international safeguards regime.

There is an additional consideration: in concluding a safeguards agreement with the IAEA under INFCIRC/153, States undertake to establish a State System of Accounting and Control (SSAC), reports from which serve as a basis for independent verification by the IAEA. Even in situations where only very limited nuclear activity is present (that is to say where the “small quantities protocol” applies) these SSACs, as small as they may be, could play a role not only in ensuring a full understanding of nuclear-related activity in the State, but also in contributing to efforts to ensure physical protection of nuclear material and to thwart its illicit trafficking.

■ **Adherence by all States having full-scope safeguards to**

**INFCIRC/540.** As noted, very few States have thus far negotiated and implemented the strengthened safeguards arrangements. Until all States under comprehensive safeguards have brought an Additional Protocol into force, the gains made by agreeing to the principles it embraces will remain unfulfilled.

The objective should be rapid completion of the appropriate protocols by all States, including the nuclear-weapon States pursuant to and consistent with their voluntary safeguards arrangements with the IAEA, (and the non-comprehensive safeguards States with respect to their more limited safeguards undertakings). We should also keep an open mind on whether still further measures might need to be considered in the interest of sustaining a robust safeguards regime that enjoys the confidence of the international community. We all know that safeguards are a dynamic, not a static system, and that we must be ready and willing to take necessary and appropriate steps from time to time to adjust to changes in the environment in which they operate if they are to continue to fulfill the purposes for which we established them. We know it, but we don't always assimilate it.

■ **United Nations Security Council action to take its 1992 assertions (related to compliance and enforcement) on proliferation and safeguards a step further.** In January 1992, the President of the Security Council, speaking on its behalf, stated that “*The proliferation of weapons of mass destruction constitutes a threat to*

*international peace and security. The members of the Council commit themselves to working to prevent the spread of technology related to the research for or production of such weapons and to take appropriate actions to that end.... On nuclear proliferation... the members of the Council will take appropriate measures in the case of any violations (of safeguards) notified to them (by the IAEA)."*

Given the importance of compliance and enforcement measures to State confidence in the dependability of the regime to support national security objectives, reaffirmation by the UN Security Council of its pronouncement whether by resolution or in some other form would be an important regime-reinforcement measure. Prompt collective reaction to reported safeguards violations would be even more important. "Would-be" proliferators must be made to understand that the option of exploiting differences among the permanent members of the Security Council is not possible because on this issue, there will be no differences.

#### ■ **Non-NPT Party support for international safeguards.**

India, Pakistan, Israel and Cuba are not Parties to the NPT. Each has determined for one or another reason that the NPT does not meet their political-security needs. But there is little evidence that they favor nuclear proliferation elsewhere, and they have largely followed the practice of not assisting, encouraging or inducing proliferation in other States.

There is a case for urging their more direct support on the principle that action speaks

louder than words. The main areas in which they could help reinforce the regime involve safeguards and export controls.

With respect to safeguards, each, but primarily India, have nuclear facilities and locations, not related to their weapons programmes, that are outside of international safeguards. Voluntarily submitting these facilities to IAEA safeguards (similar to the concept of voluntary offers of the nuclear-weapon States which themselves vary) would send a positive message that they value safeguards, and would help to reinforce the importance of the principle of having effective means of inspection to ensure compliance with undertakings. In so far as export controls are concerned, they could be strongly urged to adopt the practices of the vast majority of nuclear exporters with respect to supply conditions and restraints even to the extent of notifications of exports to the IAEA to increase knowledge of national nuclear profiles wherever the Agency conducts safeguards.

Both actions by the non-NPT States should entail establishment of national regulations that could help to tighten controls over nuclear material more generally and thus contribute to the objectives of enhanced physical protection of nuclear material and control over potential illicit trafficking. There is precedent for this in French non-proliferation policy prior to joining the NPT. The NPT States should seek to influence the non-Parties to take steps along these lines.

■ **Safeguards financing.** One of the most serious impediments to international safeguards effectiveness, and therefore to the confidence that they provide, is resources. Since the mid-1980s, the IAEA regular budget, which is the primary source of safeguards financing, has operated on the basis of zero-real-growth; in recent years suggestions have been made by some that we move to zero nominal growth. At the same time the number of States under safeguards has more than doubled, including States with substantial nuclear programmes such as Argentina, Brazil, South Africa and the republics of the former Soviet Union.

The amount of nuclear material to be safeguarded has increased correspondingly. By way of example, the number of significant quantities of nuclear material (the amount of nuclear material the IAEA estimates to be required to produce an explosive nuclear device) to be safeguarded has effectively doubled in the past six years alone. The shortfall in resources available under the regular budget has largely been compensated for by voluntary contributions, the bulk of which comes from the United States and one or two other countries.

But each year increases the strain on the IAEA to fulfill its safeguards mission and to contribute to the confidence-building that is so essential to sustaining and strengthening non-proliferation. There is a need, now, to focus our attention on revising the zero-real growth policies.

The notion of continuing to rely on voluntary contributions

to make up shortfalls is deficient in three respects: First, voluntary contributions are just that – voluntary. There is no legal obligation to make them, no certainty as to their availability and no way to predict with confidence that they will be there to meet the demands that they are intended to fulfill. They do not allow the Agency to conduct coherent internal planning with full confidence. Second, increased and disproportionate reliance by the IAEA on a single or very limited source of support gives rise to the opportunity for some States to question the independence of judgment and objectivity of the Agency in carrying out its responsibilities. Whether this is factually based or not is not the point — we should remember that in international politics perception is often nine-tenths of reality. Third, safeguards serve the common interest of all States in guarding against the diversion of nuclear assets from peaceful to non-peaceful purposes and all States should share equitably in providing the level of support necessary for safeguards to fulfill their purpose credibly and with confidence.

It is an ominous sign when the Director General feels compelled to report to the Board of Governors, as Mr. ElBaradei has done, that the Agency faces the prospect of “class B” safeguards and that the risk of having to report the inability to confirm that accountability objectives have been met, or even report a failure of safeguards, is increasing. All of us need to internalize the understanding that nuclear safeguards are national security and that their failure could threaten not only

that security but in certain circumstances, national survival.

■ **IAEA access to export license information.** Finally, the IAEA's access needs to be increased to information on export license actions in two ways. First, steps are needed to provide the Agency with information about exports not only of trigger-list items (as provided for under INFCIRC/540) but also of dual-use items. Second, steps are needed to reach agreement that export license denials with respect both to the Nuclear Suppliers' Group (a body external to the IAEA) trigger list items and dual-use items, will be provided to the IAEA. It is precisely this kind of information that can arm the Agency with information that can substantially improve its ability to develop comprehensive profiles of overall State activity in the nuclear and nuclear-related field. Legitimate proprietary interests and concerns would need to be taken into consideration in moving in this direction. Ensuring the confidentiality of any such information would be a necessary first step to meeting this concern. This is done with respect to safeguards and it should be equally feasible in regard to nuclear and nuclear-related exports.

## MEASURES REGARDING THE PHYSICAL PROTECTION OF NUCLEAR MATERIAL

In so far as the physical protection of nuclear material is concerned, five points are to be made:

■ **Global adherence to the Convention on the Physical**

**Protection of Nuclear Material.** There is a need to strive for universality of participation in the Convention so that any gaps are closed and there is continuity in the application of standards and in domestic laws and regulations related to the Convention obligations. Seventy-one States Parties to this Convention is 120 short of what should be our goal.

Compliance with the Convention requires as a practical matter, the creation of structures and legislating laws that cover nuclear material, a matter that may be less well defined and addressed in the case of non-parties.

■ **Modification of the Physical Protection Convention to reach more comprehensively into domestic State practice, law and regulation.** Active consideration of the expansion of the Convention is already under way. The focus is on extending the Convention's provisions to cover physical protection of nuclear material for peaceful purposes in domestic use, storage or transport and to prevent sabotage of such material. A universally adhered to and expanded physical protection Convention would be a significant step in the direction of closing current fissures in the web of global nuclear material control.

■ **INFCIRC/225/Rev.4: Commitment of all States to the proposition that although INFCIRC/225 is recommendatory in nature, they will consider the recommendations as tantamount to binding obligations and take appropriate steps to that end both internally and with**

respect to all international nuclear transactions. This is already the case in some States, but it should be the policy and practice of all, and States should take this into account when deciding whether or not to enter into cooperation with others. Ideally it should be considered a condition for cooperation.

■ **IPPAS: Enlargement of the Agency's International Physical Protection Advisory Service.** We should seek agreement among all members of the IAEA to invite IPPAS reviews, including the nuclear-weapon States, due attention being given to the need to ensure that facility or location-specific sensitive information that could provide a roadmap for a terrorist or any other unauthorized persons seeking to access nuclear facilities or to acquire nuclear material is fully protected and not accessible to anyone other than the appropriate national authorities. The objective should be to establish a database of protection strategies, methodologies and practices, drawing on the most thorough and advanced, that can become a basis for the recommended improvement of State programmes everywhere.

It is not beyond reason to contemplate the possibility that standards or procedures may be endorsed as measures that States should individually adopt as if mandatory with the potential for ripening into a convention-based system. There are examples in other fields including the International Civil Aviation Organization (ICAO). ICAO is based on the Chicago Convention that provides that safety standards contained in



annexes to the Convention are mandatory and failure to meet them could result in restrictions on air navigation. ICAO's oversight program (Universal Safety Oversight Audit Program, USOAP), created in 1996 operates on a voluntary basis — member States are free to request the audit or not, the purpose of which is to verify compliance with the underlying Convention. The audit results in a confidential report to the State which then prepares an action plan to remedy deficiencies. A final audit report, which is also confidential, is accompanied

by a non-confidential summary available to all ICAO contracting parties.

My thought is that focused attention should be given to considering whether if States were, on a voluntary basis to endorse the recommendations of INFCIRC/225 as manda-

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*Photos: IAEA Director General briefs the news media reporting on the Special Session on Combating Nuclear Terrorism held during the International Symposium on Safeguards. Below: One of the poster displays on safeguards surveillance equipment and monitoring systems at the Symposium. (Credits: Calma/IAEA)*

tory, the IPPAS programme could be mobilized to systematically review and recommend improvements in the implementation of physical protection practices.

The payoff for all would be increased security. In addition, a fund could be established to support efforts to bring physical protection programmes to a higher level in cases where the State is not able to do this entirely on its own. The upgrading of security at facilities is a common interest. The United States is participating in material production, control and accounting (MPC&A) efforts in Russia and this could serve as an example for upgrading security at facilities elsewhere as well. The cost of IPPAS itself is now divided between assessed budget allocations and additional voluntary contributions. Further consideration should be given to how to ensure adequate resources for an effective and sustained IPPAS program.

■ **Conventions on early notification and emergency assistance.** In the aftermath of the Chernobyl accident in 1986, the international community negotiated two conventions, one that deals with emergency notification and the other with mutual assistance. These concepts are directly relevant to the threat of nuclear terrorism. If an act of nuclear terrorism occurs, early notification is essential if other States are to avoid any transboundary radiological releases and/or have time to take appropriate additional security measures to minimize risk to their population. In the event of significant radioactive

releases, rapid mutual assistance may be required.

To provide guidelines for notification and a framework for mutual assistance (perhaps through the IAEA in both cases) conventions modeled on the post-Chernobyl ones should be very seriously considered. The notification guidelines would have to provide for the prompt transmission of clear information, while protecting operational and national security. While States are unlikely to commit in advance to assistance, a framework for providing it with key points of contact and the like could be instrumental in ensuring rapid effective responses in the event of an accident. Conventions along these lines would help to reassure the international community that action is being taken at a time of anxiety as well as providing a sound basis for responses in the future.

### MOVING AHEAD TO MEET CHALLENGES

Three points need to be borne in mind as the international community moves ahead:

■ **First, the need for a conceptual shift in managing and controlling nuclear material to include verification safeguards, physical protection, illicit trafficking, and sabotage.**

The latter relates in particular to radiological source material that can be turned into a weapon of mass effect.

■ **Second, recognize and build on the interfaces of these different aspects of the nuclear material control challenge.**

■ **Third, recognize and base policy choices on the under-**

**standing that strength or weakness in any one of the sectors is not easily isolated and has the propensity to spill over into other sectors.** Only a holistic and integrated approach will be sufficient to manage the long run challenge of nuclear material.

In presenting the US plan for dealing with the atomic age to the United Nations in 1946, Bernard Baruch said “we are here to make a choice between the quick and the dead.” That observation applies as much if not more today in light of the environment in which we now live, where the neatness of the Cold War with the disciplines it imposed on regional and other conflicts, and where identification of defined adversaries set in motion the development and application of deterrence and mutual assured destruction, is gone.

In its place is a world that includes adversaries that have no clear return address, no frontline to tackle head on, no defined assets against which to retaliate, and based on recent experience, apparently no compunction about how to wage the war it feels compelled to pursue, including suicidal attacks.

The challenge we face is immense, the time to address it potentially short, the need to transcend the traditional barriers great. Withdrawing behind sovereign boundaries will not suffice. A collective strategy of response, drawing upon our positive experience with a multilaterally based approach in non-proliferation is what we need. The question is: Do we have what it takes? □