The Future of the IAEA Safeguards System

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Although the International Atomic Energy Agency (IAEA) is engaged in important work in many scientific and technical fields, including nuclear energy, nuclear safety, and pest eradication (to mention but a few), there is no doubt that its most significant area of activity today is safeguards. This entails the IAEA sending inspectors to member states that have agreements with the IAEA permitting inspections, to verify that the inspected state complies with its non-proliferation obligations. However, the current reality is far from satisfactory.

In his introductory statement to the 2008 IAEA annual General Conference, Director General Dr. Mohamed ElBaradei said: "Effective nuclear verification requires four essential elements: adequate legal authority, state-of-the-art technology, timely access to all relevant information, and sufficient human and financial resources...we still have shortcomings in all four areas." Legal authority, when applied, is a prerequisite that determines the potential degree of success in uncovering illicit activities related to nuclear weapons development in a timely manner. When access to sites, people, and use of advanced technologies is restricted, the results of the safeguards inspections will be mainly what the inspected state permits the inspectors to find.

The Need for Change

With the Director General's statement on the shortcomings in the safeguards system, the IAEA has come a long way from its previous position, stated in October 2007 in relation to the Syria issue, that the IAEA "had the authority and capacity to investigate any such

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information." What happened between October 2007 and the following year to change the attitude of the IAEA, bringing it much closer to a realistic and more sober point of view? The change in the IAEA mindset was probably brought about by the publication in May 2008 of the report of the Commission of Eminent Persons on the Future of the Agency, which was established by the IAEA in late 2007.[1] On the heels of prior IAEA failures to detect illicit nuclear weapons development programs (Iraq, Iran, Libya, and Syria) and the unraveling of Iran's concealment of its weapons development activities, the IAEA Secretariat had to take note of the increasing criticism of its performance.

The Commission, chaired by a former president of Mexico, was composed of eighteen prominent persons from as many countries, coming from political, technical, and scientific backgrounds. In the chapter devoted to safeguards, the Commission writes: "The nonproliferation regime is under stress. To strengthen the global nonproliferation regime and prevent a cascade of proliferation, the following steps are imperative:

- Strengthened safeguards
- New approaches to managing the nuclear fuel cycle
- More effective export controls and measures to stop black-market networks
- Stronger enforcement (which pertains to the UN Security Council)
- New measures to reduce demand for nuclear weapons."

While all five points are highly relevant, only the first point is directly related to the terms of reference and work of the IAEA. Elaborating on strengthened safeguards, the Commission writes: "as has become clear from recent events, sometimes transparency going beyond the measures called for in the Additional Protocol [AP] is needed to provide confidence that a state's nuclear program is entirely peaceful. Ultimately, states should agree to incorporate those measures in an 'Additional Protocol Plus.' The latter would confirm the IAEA's right and obligation to access sites and information related to nuclear material production technologies (such as centrifuge manufacturing facilities) and to nuclear weaponization activities, as well as the Agency's right to private interviews with individuals who may know about such activities." The Commission addressed this in its recommendation that "all states should ratify the Additional Protocol, which should become

the universal standard for nuclear verification. Supplier states should make the Additional Protocol a condition for granting export licenses of nuclear materials, services, and technologies."

Unfortunately, the chances of achieving this are slim. A universally applied "Additional Protocol Plus" is at best a distant vision. Indeed, the road to adequate legal authority for nuclear verification, the prerequisite that establishes the potential degree of success in uncovering illicit activities related to nuclear weapons development in a timely manner has always been rocky. The original core of this authority is the safeguards agreements between states and the IAEA, which is (mis)named "Full Scope" or "Comprehensive." The next development was the Additional Protocol that was drafted and adopted following the lessons learned from the Iraq fiasco, where prior to the 1991 Gulf War the IAEA did not have an inkling of the vast nuclear weapons development project in Iraq. The AP granted the inspectors extensive technical privileges such as sample taking from nuclear installations as well as improved access to facilities, and overall is an important addition to the existing safeguards agreements.

However, the AP does not grant access to suspect sites, and it is not compulsory for all members of the Nuclear Non-Proliferation Treaty (NPT). About half do not adhere to the AP, and states that still have to conclude safeguards agreements are not bound to do so. Although Iran, for example, promised to abide by the AP, it later reneged on its promise, probably because the IAEA inspections were getting too close for comfort. Syria, on the other hand, is not bound by the AP, and thus is free to deny the IAEA any in-depth inspection of the al-Kibar site and other suspect sites, claiming that these are not nuclear but military sites. These are even outside the purview of the AP.

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Thus, states that are fearful of the potential findings of AP inspections have the privilege of evading them. Moreover, the AP has prompted the IAEA to proclaim repeatedly that when inspections under the AP are complete it will be able to "provide credible assurances regarding the absence of undeclared nuclear materials and activities." Yet such assurances will rarely be "credible," since it

is nearly impossible to determine an absence. This is what the IAEA has promised Iran when its reports to the Board of Governors and the Security Council hint at the possibility of providing assurances as to the "exclusively peaceful nature of Iran's nuclear programme." Given the present state of inspections in Iran, this is certainly an impossible task, especially when the technical potential for misdeeds exists, and it is not possible to assess intentions.

The Safeguards at a Crossroads

The IAEA Director General titled his opening address "IAEA at a Crossroads." Though the title aptly describes many IAEA areas of activity, safeguards is the most urgent today as far as world peace is concerned. While the IAEA reverted to its old ways in the case of Syria, it has moved recently from the conciliatory tones of its reports on the situation in Iran to more factual statements and discussion of problematic issues. This is likely a result of the recognition that maintaining the previous course could harm the IAEA if new facts concerning hitherto uncovered nuclear weapons development activities, again from outside sources, come to light. Thus the times have changed and the IAEA is at a crossroads. What direction should it take?

One cannot view the present situation, where at least three states are suspected of not coming clean on their nuclear activities, without realizing the seriousness of the matter and the consequences of failure to assess the situation correctly. The way routine inspections have been conducted is no longer a guarantee of anything, except perhaps an assurance of non-diversion of nuclear materials. Given the limited prerogatives of the inspectors in these three states, and given the multitude of concealed facts that came to light in the history of inspections that took place there, the culture and application of inspections must be reviewed and modified extensively. As evident from the latest IAEA reports, the assessment of potential is as important if not more so than the classic detection of diversion.

A partial list of urgent questions that must be reliably answered demonstrates the imperative for change in the application of the IAEA safeguards. These include:

1. Regarding North Korea: What is the plutonium material inventory in North Korea? How much has been produced, how much has

been used, and how much is still contained in the irradiated nuclear fuel? Is there or has there been a uranium enrichment project in North Korea? If so, what is its status? What foreign cooperation or what assistance has North Korea given to other states in the nuclear field?

2. Regarding Iran: What is the status of the weapons development program, especially in the light of recent documentation and implied activities noted in the IAEA reports? How certain is the IAEA that no parallel concealed enrichment program exists (utilizing the technical information and machine production facilities available in Iran)?
3. Regarding Syria: Is there a resurrection of the nuclear reactor project in Syria? Is there a uranium enrichment activity in Syria? Will the IAEA report its estimate of the characteristics and capabilities of the destroyed nuclear reactor at al-Kibar?

The IAEA must start rethinking its safeguards philosophy and move in the direction set by the Commission. It should stop promising results that are impossible to achieve. It must insist on the rights and privileges mentioned in the Commission's report and state that without these, the world cannot be promised a reasonable and timely warning before another country achieves a military nuclear capability. The IAEA Member States must be made to realize that the present safeguards regime must be modified if it is to be credible.

The following suggests a basis for future safeguards activities:

1. The purpose of verification is defined as "to detect, prevent, and give warning to states' activities that are contrary to their international obligations."[2]
2. The main task of the inspectors is to gather all known relevant technical facts and to assess them. The inspectors must denote all facts that are not internally consistent.
3. The inspectors must note all information (including access, sampling, and measurements) that was not made available to the inspectors, even if outside the terms of existing agreements.
4. The inspectorate must note its conclusions of the situation, based on the inspectors' reports and on externally available information. This must include the assessment of the possibilities and potential for the development of nuclear explosives.

5. Since the IAEA Director General is usually not a technical expert, the above conclusions shall be submitted to a scientific committee to assess the situation. This Committee will present its conclusions to the Director General and to the Board of Governors. These conclusions shall be made public.
6. In addition, the Committee will present its country-specific technical recommendations to the inspectors, as mandatory guidelines for their future activities.

Should the above suggestions together with the recommendations of the Commission be adopted, there can be an almost immediate noticeable change for the better in the effect the IAEA has on the international front when dealing, for example, with the Iran issue. The interpretation of the technical findings, or for that matter the obstacles laid in front of the inspectors, will make it harder for the international community to avoid difficult decisions. These in turn could make it harder for Iran to pursue its aims and perhaps lead to a resolution of the issue.

Additional Issues and Conclusion

Emphasis here has been on adequate legal authority and the timely access to all relevant information. The other two outstanding issues mentioned by the Director General, state-of-the-art technology and sufficient human and financial resources, are also important. There should be little doubt that although the IAEA invests considerable effort in developing safeguards-specific technologies, the constituent states of the IAEA must be major contributors to this effort.

The IAEA should not be afraid of sounding the alarm in cases where the unknowns could become alarming facts. Political correctness can mislead, and with formidable consequences.

A report by the US Congressional Commission on the Prevention of WMD Proliferation and Terrorism, chaired by Senator Bob Graham and published in December, 2008,[3] also noted the IAEA's lack of authority, in addition to the "agency's increasing inability to meet its 'timely detection' goals." This comes as the result of the lack of resources – funding, personnel, technologies, and so on. Member States of the IAEA should increase

their contributions, and a fee should be levied on the inspected states to pay for the IAEA activities.

In addition to the possible contribution of the member states to these activities, the IAEA should consider reallocating its resources according to operational needs and abandon or at least temporarily reduce its low priority activities, such as inspections of facilities in Nuclear Weapons States and in states that are not under suspicion and whose inspections records are impeccable. Prioritization of activities could do much to alleviate shortages in personnel and finances. Admittedly, these changes have political ramifications (including accusations of discrimination) but in times of need, political difficulties must be overcome

Although the IAEA has come a long way from what was its habitual form of not angering its member states, even when the blame was there for all to see, it is still hesitant on going the extra mile and reaching technical conclusions. Today, the contribution of the IAEA to the non-proliferation regime is considerable, especially in light of its activities in Iran. However, it still is not enough, and can be made much better if it adopts the above-noted principles and acts more intensively in the assessment of the situation in the burning issues of the day, in Iran, North Korea, and Syria. The IAEA should not be afraid of sounding the alarm in cases where the unknowns could become alarming facts. Political correctness can mislead, and with formidable consequences.

Notes

1 http://www.iaea.org/About/Policy/GC/GC52/GC52InfDocuments/English/gc52inf-4_en.pdf.

2 Ephraim Asculai, *Verification Revisited: The Nuclear Case* (Washington, DC: Institute for Science and International Security Press, 2002).

3 http://www.preventwmd.gov/report/ Senator Bob Graham, Chairman/.