Keynote Address

Nuclear Verification: Yesterday, Today, and Tomorrow

By

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While I welcome the opportunity to address this workshop on nuclear verification, I welcome even more the many contributions made by our hosts to the global causes of nuclear disarmament and non-proliferation. I have little doubt that the Vienna Center for Disarmament and Non-Proliferation and the James Martin Center for Non-Proliferation Studies will continue to contribute productively to these causes over the years ahead.

Nuclear verification certainly has a past. It remains tremendously important today. It surely will surely figure prominently in future efforts to reduce and eliminate nuclear weapons and to prevent their proliferation. And precisely because of its important roles in these areas, it is also a vital instrument for strengthening international peace and security.

Verification is more than just a process for confirming that States Parties to a particular disarmament or non-proliferation agreement are complying with its terms. It is more than a means of discouraging violations through timely warning and a high risk of detection. It is even more than its key function as a confidence-building measure, which it performs by promoting mutual trust on sensitive issues that—without verification—become breeding grounds for the kinds of suspicions and fears that lead to arms races and wars.

It is more than all of these. It is also a multilateral norm—one of the great quintet of norms that the world has long recognized as defining characteristics of a high quality disarmament instrument. In addition to verification, the other norms are transparency, irreversibility, universality, and bindingness in law. One finds these norms repeatedly identified in General Assembly resolutions and in final documents of NPT review conferences. They are recited in speeches in global and regional fora precisely because of their collective importance in removing doubts about compliance with treaty commitments. It is worth recalling that the verb “to verify” comes from the old French infinitive, verifier, which means “To substantiate or prove the truth of something”.

If parties to a disarmament treaty are fully transparent about relevant weapons, delivery systems, and warhead materials; if the various declarations and commitments are verified; if technical and political means are employed to ensure against any sudden reversal of a commitment; if there are no so-called “hold out” States; and if commitments have legal status—these together constitute the most reliable safeguard against a possible violation. These norms are what enable disarmament proponents to rebut their critics, especially those obsessed with the spectre of cheating. These are the standards that enable mutual trust and confidence to exist, and to produce a perception of a higher level of security than can be achieved by any alternative measure. In a disarmament agreement fully embodying all these norms, a break-out would not just be unlikely, but impossible.

When, for example, the consensus Final Documents of the 2000 and 2010 NPT Review Conferences declared that the total elimination of nuclear weapons offers the only absolute guarantee against the use of such weapons, these texts are referring to a disarmament arrangement embodying these norms. This is made clear by language elsewhere in those documents, as amplified many times over in deliberations and resolutions of the General Assembly and in the activities of the UN disarmament machinery over many decades. It is noteworthy that the verification language in the NPT did not just cover the safeguards function; it is also implicit in the wider objective of Article VI, which is general and complete disarmament “under strict and effective international control”.
To be sure, verification has had a long history at the United Nations, both with respect to nuclear disarmament and nuclear non-proliferation. This legacy is significant because many of the issues raised in those early years persist today and will also have to be addressed in the future. Given the nuclear focus of this workshop, I will not today address verification issues relating to chemical, biological, or conventional weapons, nor will I cover additional controls associated with the prevention of nuclear terrorism, such as the physical security of nuclear material. My focus will remain on nuclear disarmament and non-proliferation.

The history of nuclear verification goes back to the very dawn of the nuclear age. The first resolution adopted by the General Assembly on 24 January 1946 not only addressed the goal of eliminating nuclear weapons and other weapons “adaptable to mass destruction”, but it also called for specific proposals “for effective safeguards by way of inspection and other means to protect complying States against the hazards of violations and evasions.”

On 17 March 1946, Dean Acheson submitted the “Acheson-Lilienthal Report”, prepared by a board of consultants, to Secretary of State James Byrnes—it called for the establishment of an international authority that would control the nuclear fuel cycle. He stated in his cover letter that—and I think this is worth quoting at length—

…we are impressed by the great advantages of an international agency with affirmative powers and functions coupled with powers of inspection and supervision in contrast to any agency with merely police-like powers attempting to cope with national agencies otherwise restrained only by a commitment to ‘outlaw’ the use of atomic energy for war. In our judgment the latter type of organization offers little hope of achieving the security and safeguards we are seeking.

While there were no references to “verification” in that report, the challenge of ensuring compliance with a nuclear disarmament commitment was clearly recognized and carried over into Bernard Baruch’s famous speech of 14 June 1946 announcing his own plan for the international ownership of the nuclear fuel cycle. The speech included several references to the role of inspections, to the need for “complete and accurate information” on nuclear materials, and to the importance of speedy detection of violations. A unique feature of his proposed International Atomic Development Authority was that its monopolistic function would actually reduce the need to verify what he termed “dangerous activities” undertaken by specific States. As he said, “the difficulties of inspection are reduced” given the Authority’s exclusive material and technological controls. He also proposed that any violations should be promptly detected and severely penalized by the Security Council, with no right to veto.

The Soviet response was issued five days later. Now known as the Gromyko Plan, it proposed the immediate abolition of nuclear weapons, followed by controls to be developed later, with penalties for violations left to domestic legislation.

So as early as 1946, the international community was struggling to come to grips with this challenge of verifying compliance in a nuclear-disarming or nuclear-disarmed world. There were disputes over the scope of what would be reported and prohibited, what would be the relationship between national and international institutions, what would be the consequences of a violation, what would be included in the various stages of the disarmament process, what would be the role of inspections relative to other means of detecting violations, and what would be the role of the UN.
After the early demise of both Plans, the General Assembly adopted resolution 502 in January 1952, which established the UN Disarmament Commission and gave it a mandate to negotiate a single comprehensive treaty outlawing weapons of mass destruction and limiting conventional arms. The preamble of that resolution recognized that “a genuine system for disarmament must include all kinds of armed forces and armaments” and “must include safeguards that will ensure the compliance of all such nations” participating in that system.

By 1959, the General Assembly had become a forum for the deliberation of several multi-staged versions comprehensive disarmament plans, all of which gave prominent attention to the need for inspections, transparency, and other controls. The same year, the General Assembly adopted resolution 1378, thereby making “general and complete disarmament under effective international control”—which joined WMD elimination and conventional arms control—as together an official UN goal.

The pursuit of such a treaty climaxed in 1961 with the McCloy/Zorin joint statement, which was an outline agreed by the Soviet Union and the United States for the achievement of general and complete disarmament. Among its features was a provision for the creation of an International Disarmament Organization, whose inspectors “should be assured unrestricted access without veto to all places as necessary for the purpose of effective verification.”

Nuclear verification was at this stage about to enter a new phase of evolution—namely, the age of what has been called “partial measures”. This also defines our present age, which remains a significant departure from the pursuit of a comprehensive disarmament treaty of either variety—nuclear or general.

The next milestone in nuclear verification came in 1963 with the entry into force of the Partial Test Ban Treaty. Though it did not contain any verification provisions, the treaty would not likely have been concluded if the States Parties lacked confidence in their ability, using national technical means, to monitor compliance reliably. It is quite possible that the UN might well have had a role in shaping those perceptions of verifiability. Following the launching of Sputnik in October 1957, Secretary-General Dag Hammarskjöld called for the establishment of an expert group to prepare a scientific study of whether a reliable system could be developed to verify compliance with a suspension of atmospheric nuclear tests. The group responded in the affirmative, and though he did not live to see this treaty or its successor the CTBT concluded, he would surely have welcomed the whole idea of mobilizing scientific resources to serve shared arms control objectives.

Since then, the UN—and here I mean both the Secretariat and the Member States—has never abandoned its interest in nuclear verification issues. It was a prominent theme of the Final Document adopted at the General Assembly’s first Special Session on disarmament in 1978. In 1988, the UN Disarmament Commission adopted by consensus sixteen principles of verification that remain useful even today. It was the subject of the work of three panels of governmental experts in 1990, 1995, and 2008. And it is currently on the agenda of the Secretary-General’s Advisory Board on Disarmament Matters.

The global scope of interest in nuclear verification is illustrated in another way as well. It would be wrong to assume that this is a subject only of interest to the nuclear-weapon States. Both non-nuclear-weapon States and civil society groups have also had a longstanding interest in this subject. They have been making a strong case not just to join in
studying and discussing this issue but also to participate in various ways in the verification process. We sometimes forget that the disarmament responsibility in the NPT is shared by all States Parties, not just the nuclear-weapon States—and that ultimately States are not the only beneficiaries of disarmament, but all humanity.

An excellent illustration of this shared interest is “The United Kingdom–Norway Initiative on the Verification of Nuclear Warhead Dismantlement”, involving the participation of one nuclear-weapon State (the UK), one non-nuclear-weapon State (Norway), and one NGO (VERTIC). One of its primary goals has been to develop ways to dismantle warheads without compromising nuclear weapon design information. Another example is the work of the International Panel on Fissile Materials, a distinguished group that has concluded that the main problems of verification in disarmament are not technical but political.

While it is true that this age of partial measures has not produced nuclear disarmament, it has featured an exponential growth of verification, even nuclear verification.

In 1968, the Nuclear Non-Proliferation Treaty was concluded, thereby establishing the first major multilateral arms control agreement to contain important verification provisions, as seen in the safeguards found in Article III of that treaty and implemented by the IAEA. Following the revelation and subsequent destruction of a nuclear-weapons programme in Iraq in the early 1990s, the Agency developed strengthened safeguards contained in the Additional Protocol, which is now in force in 123 States.

There has of course been less progress in the field of disarmament. The IAEA cooperated over a six-year period (1996-2002) with the Russian Federation and the United States to develop a verification system under which each country could submit classified forms of weapons-origin fissile material for IAEA verification and monitoring—the system was designed to be irreversible and to last for an indefinite period. Though the Trilateral Initiative, as it was called, was never implemented, efforts continue among parties to the NPT to encourage the nuclear-weapon States to place under safeguards fissile material “no longer required for military purposes”. This is the gist of Action 16 of the 64-point Action Plan adopted at the NPT Review Conference in 2010.

The Review Conference also reaffirmed the need to conclude “a non-discriminatory, multilateral and internationally and effectively verifiable treaty banning the production of fissile material for nuclear weapons or other nuclear explosive devices”, a goal to be pursued at the Conference in Disarmament, as urged in Action 15 of the Action Plan. And in language reminding us of the quintet of nuclear norms, Action 2 of that plan contained a commitment by all States Parties “to apply the principles of irreversibility, verifiability, and transparency in relation to the implementation of their treaty obligations.”

Verification has actually been somewhat of a “hardy perennial” at NPT review conferences. It is found in the 13 steps on nuclear disarmament agreed at the 2000 Review Conference—step 13 of which provided for “the further development of the verification capabilities that will be required to provide assurance of compliance with nuclear disarmament agreements”. It was also part of a decision adopted at the 1995 NPT Review and Extension Conference encouraging the nuclear-weapon States to place formerly military fissile material under IAEA safeguards.
One of the most impressive advancements in verification came in 1987 with the conclusion of the Intermediate Nuclear Forces (INF) Treaty, in which the then-Soviet Union and United States agreed to destroy their ground-launched ballistic and cruise missiles with a range of between 500 and 5500 km. This treaty included an elaborate system for verifying compliance, involving on-site visits, regular exchanges of information, and other cooperative measures. From the standpoint of nuclear verification, however, the INF Treaty was limited in that it did not address the disposition of the warheads of those missiles.

I will not get much into the details of the various verification measures contained in the bilateral strategic nuclear weapons treaties—like SALT, START, and New Start—mainly because these are not to be confused with disarmament treaties. Nevertheless, the habits of cooperation in jointly verifying commitments in limiting deployments of strategic nuclear weapons—including through the use of on-site inspections and the sharing of sensitive information—may well have a downstream payoff. This will become more apparent when the two nuclear powers finally agree on the next logical step of strategic arms control, namely the verified destruction of warheads, delivery systems, and the final disposition of military fissile materials.

I also will not address the verification activities of the UN Monitoring, Verification and Inspection Commission and the UN Special Commission on Iraq, because the nuclear missions of those commissions were performed by the IAEA, whereas the UN played a more direct role in the verification of the destruction of Iraq’s chemical and biological weapons, facilities, and relevant materials. I also believe the lessons learned from that experience may not be readily transferable to the global dimension, given the special nature of the circumstances facing that disarmament challenge in Iraq.

We have seen how nuclear verification can be undertaken unilaterally (through national technical means), bilaterally as in the strategic nuclear arms control treaties, or multilaterally as best illustrated by the IAEA’s safeguards system and the International Monitoring System of the CTBT. Yet it can also be undertaken regionally, as seen in the work of the Agency for the Prohibition of Nuclear Weapons in Latin America and the Caribbean (OPANAL) and the European Atomic Energy Community (EURATOM). The South Pacific Forum has a mandate under the Treaty of Rarotonga to conduct special inspections under that treaty, and the Pelindaba Treaty established the African Commission on Nuclear Energy (AFCONE) to promote implementation of that treaty. In the future, I expect to see increased cooperation between the members of these zones, including through the sharing of lessons learned in the course of implementing those treaties. Further progress is also possible at the sub-regional level, following the model established by the Brazilian-Argentine Agency for Accounting and Control of Nuclear Materials (ABACC).

I cannot possibly conclude my remarks on nuclear verification without recognizing the potential that exists for its abuse. To be frank, this indispensable instrument of disarmament—verification—can easily be turned into its own type of weapon against disarmament. This risk is especially high when it comes to nuclear disarmament, given the catastrophic effects from the use of even one such weapon. Those horrific consequences can understandably raise expectations about verification to stratospheric and hence unattainable levels. To set, for example, a disarmament verification standard requiring the accounting of every gram of fissile material ever produced anywhere would only guarantee the perpetuation of nuclear arsenals, because such a standard could never be implemented.
The danger here is that the horrible effects of such weapons will create a climate of fear that will be easily exploited by diehard critics of disarmament. They can use unattainable verification standards as a ploy to block the ratification of relevant treaties, to prevent the enactment of implementing legislation, and to deny funding for disarmament activities. As has been often observed in the policy literature in this field, verification can even become a subject of contention in the bureaucratic politics of nuclear-weapon States.

In addition, verification of nuclear disarmament will likely prove to be costly, though not at all as costly as preserving or modernizing these arsenals, and certainly not as costly as dealing with the consequences of their use. Again, however, such costs of verification offer another tantalizing tool for critics to use in de-railing the disarmament process.

I would say the greatest obstacle that nuclear disarmament now faces is the easily exploitable fear that someone, somewhere, will cheat and the world will not be able either to prevent it or to mobilize an effective response.

The best way to overcome this obstacle is to ensure that the quintet of multilateral norms is fully incorporated into the disarmament process and its related instruments. It is through the implementation of these standards that the world community can reduce the risk of violations to the lowest possible level.

Excellencies, distinguished guests, after all these years of talking about nuclear disarmament, isn’t it time for declared reductions to be verified, or at least for even some small steps forward that would facilitate future verification?

The UN’s Office for Disarmament Affairs has a page on its web site called, “Repository of information provided by nuclear-weapon States”\(^1\). We created it pursuant to Action 21 of the Action Plan adopted at the 2010 NPT Review Conference. Its contents are limited now to national reports, with varying levels of detail, submitted by the five nuclear-weapon States at an NPT meeting this year. The greater the transparency we see in such reports, the better prepared the world will be to establish rudimentary baselines for future verification in such crucial areas as bombs, warheads, delivery systems, and fissile material.

This repository is quite far from serving that function today—why can’t it do so tomorrow? It exists—it is a tool ready to be used—it has the potential to open a window on what may well become a genuine disarmament process, one that will eventually require verification. Yes, it is only the smallest of steps forward, but we are at the point when some forward motion is better than none. As Dag Hammarskjöld once said about disarmament, “in this field … a standstill does not exist; if you do not go forward, you do go backward.”\(^2\)

On another dimension, one of the most effective ways to lower the risk of non-compliance is by de-legitimizing nuclear weapons—this is the basic idea behind Secretary-General Ban Ki-moon’s memorable comment that “there are no right hands for wrong weapons.” The greater the taboo that attaches to possession anywhere, the greater will be the incentive everywhere to oppose the very existence of such weapons and to detect potentially suspicious activities in time to allow for investigation and if necessary response.

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This process of de-legitimizing these weapons is assisted greatly by advocacy and commentaries from former military leaders who can authoritatively question both the likelihood of a violation and the real military consequences. If nuclear weapons are not only morally repugnant to use but also militarily useless then the incentive to cheat is correspondingly reduced, if it does not vanish all together. Our own recent history provides ample evidence that possession of nuclear weapons hardly guarantees victories in wars. A potential cheater would also have to consider the consequences of its actions, including in the worst case the reconstitution of nuclear arsenals by others.

Nuclear verification will contribute a lot to international peace and security, though even the full implementation of the disarmament quintet will not alone produce world peace. Yet if they are accompanied by progress on other fronts, even this great goal would be achievable. It all comes down to the fulfilment of the basic norms of the UN Charter—including the peaceful resolution of disputes, the prohibition of threats or use of force, the advancement of social and economic development, the protection of human rights, and the cultivation of the rule of law—only then will international peace and security be on its strongest foundation. And ironically, in such a world, there will be very little need for nuclear verification.