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“CHANGING THE SAFEGUARDS CULTURE”

**SAFEGUARDS IN A BROADER POLICY PERSPECTIVE:
VERIFYING TREATY COMPLIANCE**

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INTRODUCTION

The NPT is unique, in being near-universal and in having an intrusive verification mechanism—IAEA safeguards—to determine treaty compliance. Under the NPT, the non-nuclear-weapon states (NNWS) Parties have accepted intrusive verification procedures to provide assurance that they are complying with their non-proliferation commitment, namely, to use nuclear energy for exclusively peaceful purposes and not to seek to acquire nuclear weapons.

There are few comparable treaties, certainly at the multilateral (as distinct from bilateral or regional) level. The closest is the Chemical Weapons Convention (CWC)—but the verification system of the CWC, at least the routine inspection system, is far less intrusive/intensive. The incidence of inspection is generally far lower, many relevant chemicals are outside the inspection system altogether, and there is no treaty-based process which seeks to detect undeclared activities. The CWC has a challenge inspection mechanism for investigating suspected undeclared activities, but it is up to Parties, rather than the treaty secretariat, to find indicators of such activities and to invoke the challenge mechanism (so far this has not been done).

The NPT and IAEA safeguards are both going through a difficult period of challenge. With the NPT, there are political differences over the priority to be given to the various Treaty provisions. This is highlighted by the case of Iran, which has violated the obligation to comply with IAEA safeguards, and is widely suspected of violating the obligation against seeking nuclear weapons, but which vociferously maintains that the Treaty guarantees it the right to develop sensitive nuclear technology. It might be considered unconscionable for a treaty party to violate fundamental treaty provisions yet continue to demand rights under the treaty, but not only is Iran seeking to apply the NPT selectively, regrettably Iran has supporters in this endeavour.

The Iran case also highlights challenges to IAEA safeguards posed by the spread of sensitive nuclear technology, namely, the difficulty of detecting undeclared nuclear activities. It is a serious concern that Iran carried out a broad range of undeclared activities for almost 20 years undetected. Detection methods are improving—but if Iran is able to proceed with a large-scale enrichment program it will be relatively easy for it to conduct a parallel clandestine program. Even if Iran can be persuaded not to proceed with its (now) declared program, it has established the capability to conduct a clandestine program. Either way, the IAEA will have a considerable challenge to be able to provide credible assurance of the absence of undeclared nuclear activities in Iran.

The Iran case illustrates a further issue—that the NPT itself has no mechanism for determining compliance. This responsibility is left to the IAEA. Formally IAEA Board of Governors (BOG) decisions concern compliance with safeguards agreements, rather than the NPT as such, but in practical terms non-compliance with a safeguards agreement constitutes non-compliance with the NPT.

There are apparent differences between the terms of the NPT and safeguards agreements, which could have some bearing on the scope of safeguards activities, hence could affect the ability to reach compliance determinations. There is no doubt that activities by a NNWS aimed at the development of nuclear weapons—weaponisation—constitute non-compliance with the NPT. But because safeguards agreements are expressed in terms of **nuclear material**, some—inside as well as outside the Agency—argue that the IAEA has no remit to investigate weaponisation unless nuclear material is involved.

This last point illustrates contradictory expectations which have yet to be resolved. The first is that traditionally many states have sought to limit the IAEA's verification activities. Perhaps this reflects that when the NPT was negotiated the concept of intrusive verification was too radical for some. At any rate, the drafting of INFCIRC/153 in terms of nuclear material might be seen as a limitation—underlying the debate about investigating weaponisation activities—although such a literal application of INFCIRC/153 works against safeguards/non-proliferation objectives. More particularly, INFCIRC/153's use of *strategic points* clearly was intended as a limitation on IAEA access. Post the first Gulf War, recognition of the problems of this limitation led to the development of the Additional Protocol.

The other expectation is that the Agency should be able to provide credible assurance of the absence of undeclared nuclear activities. Substantial effort is going into developing methods and procedures to provide this assurance under “routine” safeguards. The Iranian case is showing just how difficult this is in “non-routine” circumstances. There is no doubt that if states are serious about having meaningful assurance from the IAEA, they must be prepared to give the Agency substantial authority and freedom of action, and a full level of cooperation. In other words, they must look beyond intrusive verification as being an affront to sovereignty, and appreciate that demonstrating compliance through full cooperation serves their interests—unless they have something to hide. Another aspect of the change of mindset required may be the need to move from reliance on formal verification through safeguards, towards development of complementary mechanisms, such as confidence-building and transparency measures, to afford other states the opportunity to make their own assessments about a state's compliance.

SOME IMPLICATIONS FOR IAEA SAFEGUARDS

Under the traditional safeguards system verifying treaty compliance was considered straightforward. The commitment in the NPT for NNWS not to seek nuclear weapons (Article II) is expressed in broad terms, and the purpose of IAEA safeguards is also expressed in broad terms (Article III.1)—to verify the fulfilment of obligations assumed under the Treaty with a view to preventing diversion of **nuclear energy** to the production of nuclear weapons. However, the commitment to accept IAEA safeguards (Article III.1) is expressed in seemingly narrower terms—to accept safeguards on all **nuclear material**. So it was that the verification system for the NPT—IAEA safeguards, specifically, the comprehensive safeguards system set out in INFCIRC/153—was developed with a focus on nuclear material.

The focus on nuclear material is perfectly understandable—after all, nuclear weapons cannot be produced without nuclear material, and nuclear material has the virtue of being easy to characterise and measure. Hence the safeguards system developed with an emphasis on nuclear materials accountancy, and on verifying the **correctness** of declared nuclear material inventories. A comprehensive and enduring culture developed around the use of quantitative and relatively mechanistic procedures. This culture was self-reinforcing through a particular interpretation of policy imperatives—specifically, the requirement to avoid discrimination—which resulted in the approach of **uniformity** in safeguards application, and a distrust of exercising judgment. Judgment was thought to be subjective, prone to bias and error. One result of this mindset was that provisions

in INFCIRC/153 which allowed for **differentiation** in safeguards application to reflect state-specific factors were substantially under-utilised.

As is all too well known, the weaknesses in traditional safeguards were revealed in the aftermath of the first Gulf War, when Iraq's clandestine enrichment and weaponisation programs came to light. This led to the program to strengthen safeguards, a process of major evolution—if not revolution—in safeguards. Emphasis is being given to the challenge of detecting undeclared nuclear programs. In IAEA terms this is expressed as requiring that safeguards should provide assurance of the **completeness** as well as the correctness of states' declarations.

The revolutionary aspect of safeguards development is that judgment is coming to the fore in drawing safeguards conclusions. Conclusions about the *absence* of something—undeclared activities—can never be as definitive as conclusions based on quantitative methods applied to a finite problem—the verification of a declared inventory. For the new safeguards conclusions to be credible a number of conditions need to be satisfied: that states understand the process for looking for indicators of undeclared activities and accept these are appropriate; that states are satisfied the process is applied at the requisite standard; and that states are satisfied judgments are exercised and conclusions drawn in a suitably disciplined way. All of this involves new approaches compared with the traditional quantitative system, including analysis of a broader range of information, and a quality assurance system to ensure appropriate standards of implementation and decision-making.

The less-certain world of **qualitative** safeguards was anticipated in INFCIRC/153, when it established an alternative route for reporting apparent non-compliance to the Security Council. The IAEA Statute (Article XII.C) provides for non-compliance to be reported to the Council—but not all non-compliance will be easy to determine. Refusal to cooperate with inspectors, refusal of access, or expulsion of inspectors are clear enough. But it is most unlikely the IAEA will come across nuclear weapon components, or assembled weapons. We can assume that a state about to be caught red-handed in this way will refuse access rather than facilitate the discovery of irrefutable proof of non-compliance.

In the Iran case the Agency has reported that it will take some time before it is able to conclude that Iran's nuclear program is for exclusively peaceful purposes—but also that it has no evidence that Iran's undeclared nuclear activities were related to a nuclear weapon program. By “evidence” it appears the Agency meant **proof**. “Proof” is an impractically high standard, which goes beyond the terms of the relevant safeguards agreement. In areas of qualitative judgment we must rely on **inference**. So it is that INFCIRC/153 (paragraph 28) refers to diversion to nuclear weapons or to **purposes unknown**. Further, INFCIRC/153 provides for the Agency to report to the Security Council if it is **unable to verify** that there has been no diversion to nuclear weapons (paragraph 19). It is sufficient for the Agency to show that diversion—removal of nuclear material from safeguards or discovery of undeclared nuclear material—has occurred and the purpose of the diversion is not known—and that diversion to nuclear weapons is plausible (there may be circumstances where this is not plausible, e.g. having regard to the nature and quantity of the material involved).

In a world where inference is important, it is necessary to broaden the information that can be considered relevant to drawing conclusions. The traditional narrow focus on nuclear material is inadequate in drawing qualitative decisions. In Committee 24 it was recognised that a range of “non-nuclear-material” information is essential in drawing conclusions about nuclear material. For example, information about centrifuge manufacturing could assist in evaluating the completeness of states' declarations about enrichment activities. It has been accepted in the Additional Protocol that information going beyond nuclear material as such is justified—and required—to evaluate declarations about nuclear material.

This broadening of information is fully consistent with the NPT, which is framed in terms of **safeguards procedures** to be followed with respect to nuclear material (Article III.1). This is not a

restriction of safeguards to nuclear material as such, but allows the IAEA to develop procedures with respect to nuclear material—this certainly encompasses procedures to find indicators of undeclared nuclear material, or indicators of diversion or proposed diversion.

The process of broadening the information available for safeguards has some way to go. An example is information about a state's acquisition of nuclear-capable missile systems—such information could provide indicators of proliferation intent, important for decisions on safeguards intensity and the interpretation of safeguards anomalies. Another example concerns weaponisation activities. Some of these, e.g. computer studies, will be very difficult to detect, and the Agency will not be in a position to provide credible assurance of the absence of such activities. This is a very different proposition to the argument that such activities are in any event beyond the Agency's remit unless nuclear material is involved. There is a nexus to nuclear material—the existence of weaponisation activities is an indicator that diversion of nuclear material is proposed or may have already occurred. The IAEA has a clear responsibility to investigate such activities.

This comes back to an earlier point—whether the less-than-total coincidence of NPT and safeguards agreement provisions indicates that safeguards agreements are intended to cover less than the Treaty itself. Because for practical reasons the safeguards agreement was expressed in terms of procedures to be applied to nuclear material, this does not mean that the IAEA is limited to nuclear material. It can—and should—look at other information that helps substantiate conclusions about nuclear material.

NEW METHODS OF COMPLIANCE VERIFICATION

As safeguards become more qualitative, the role of the state—as both subject and stakeholder in the safeguards system—becomes more central to the performance of the safeguards system. Strengthened safeguards bring new requirements in terms of information, access and cooperation. It is not simply a question of having to meet the IAEA's requirements, but rather, of meeting the standard necessary to maintain confidence on the part of the international community. At the same time, states need more from the Agency. It is no longer sufficient to simply leave the Agency to get on with implementing a mechanistic technical system. Because of the increasing place of expert judgment, states need to understand how this is exercised and how it can be validated, e.g. through QA and perhaps through peer review.

A notable aspect of traditional safeguards is **confidentiality**—information held on a state is maintained within the Agency and not shared with others. The CWC—a newer treaty—establishes a different approach. States' declarations are made available to all Parties. Other states thus have the opportunity to cross-check information declared against information available to them, e.g. through their own analysis, research, or national technical means. This helps identify discrepancies in information that might require investigation, and helps establish the credibility of the verification agency's operations. This is a direction the safeguards system might usefully take. Obviously there are difficult issues, such as maintaining confidentiality of sensitive information, and avoiding warning a state of investigations in progress—but a more transparent system, where information is available on states' nuclear activities, the IAEA's activities, its conclusions and the basis for these, could have important confidence-building benefits.

Transparency more generally can be expected to assume greater importance, allowing states to correlate findings from the IAEA with complementary information they can readily acquire through their own research. There are many potential transparency mechanisms, ranging from wider publication of information on nuclear programs, to collaborative research and operational programs, broader privatisation and globalisation of nuclear activities, and the conduct of collaborative safeguards activities on a bilateral or regional basis.

CONCLUSIONS

IAEA safeguards have provided a unique model of treaty compliance verification, with a rigorous process for identifying non-compliance. As safeguards become more qualitative—reflecting the nature of contemporary safeguards challenges—compliance issues are becoming more complex. A transition is required, from the apparent “certainty” of the traditional processes, to a more judgment-based approach, based on broader information and perhaps being less absolute in its outcomes. The phrase “purposes unknown” will assume greater significance. Also likely to assume greater importance is Article III.B.4 of the IAEA Statute, not used until recently in the Iranian case—this requires the Agency to notify the Security Council of questions arising in connection with the Agency’s activities that are within the competence of the Council, i.e. relate to international peace and security. This could apply to uncertain compliance issues, or concerns about future non-compliance, or simply the destabilising effect that the development of sensitive nuclear technology could have in a region of tension.

Challenges here are to ensure traditional safeguards attitudes don’t impose unrealistic evidentiary standards, and to ensure that the new expert-judgment processes are appropriately based. If the IAEA system succeeds in meeting these challenges the NPT and IAEA safeguards will continue to set the standard for treaty compliance verification, and will provide a model for new treaties in complex areas, such as the proposed FMCT. If it does not, IAEA safeguards will fail to meet the expectations of states to provide credible assurance.