

## **The IAEA's State-Level Concept and the Law of Unintended Consequences**

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In September 2013, the International Atomic Energy Agency (IAEA) Board of Governors reviewed a report by Director-General Yukiya Amano on efforts to further strengthen the effectiveness of safeguards and increase their efficiency.<sup>[1]</sup> The report described an approach to the implementation of safeguards that had come to be known as the “state-level concept.”

Rather than being received as intended—as a blueprint for the next logical step in the evolution of safeguards—the paper and, more specifically, the concept it described triggered a decidedly vitriolic response.

Some member states have used this opportunity to call into question important measures to strengthen safeguards that have been in place since the early 1990s. Most disconcerting have been challenges to IAEA authority under comprehensive safeguards agreements to verify the nondiversion of declared nuclear material and the absence of undeclared nuclear material and activities in a state with such an agreement.

The IAEA board and General Conference will have another opportunity to address this issue when they convene again this month to discuss the state-level concept. The purpose of this article is to assist the parties involved in those deliberations in understanding the legal basis for IAEA authority to verify the correctness and completeness of state declarations under comprehensive safeguards agreements and, in doing so, to call attention to the possible unintended consequences of those deliberations if the recent challenges to that authority are allowed to prevail.

### **The State-Level Concept**

The state-level concept has its roots in efforts by the IAEA and its member states to strengthen safeguards in the aftermath of the discovery in 1991 of a clandestine nuclear weapons program in Iraq. This discovery triggered a reassessment of the then-conventional, ill-founded belief that the IAEA's legal authority under comprehensive safeguards agreements pursuant to the nuclear Nonproliferation Treaty (NPT) was limited to verifying nuclear material and facilities declared by the state.

For the first 20 years of the implementation of comprehensive safeguards agreements, IAEA safeguards activities were, as a practical rather than legal matter, focused primarily on verifying declared nuclear material at declared facilities. Safeguards were implemented and evaluated on a facility-by-facility basis, rather than by examination of the state as a whole. As a consequence of this approach, although the agency routinely sought to verify that there was no undeclared production of nuclear material at declared facilities, in particular at research reactors, it did not seek to verify that there was no undeclared nuclear material elsewhere in the state.

The flaw in that facility-level approach became evident with the discovery of Iraq's undeclared nuclear activities in 1991.

Between 1991 and 1993, the IAEA board and General Conference made a number of decisions reaffirming the agency's right and obligation to ensure that, in a state with a comprehensive

safeguards agreement, no nuclear material, whether declared or undeclared, is diverted to nuclear weapons or other nuclear explosive devices. In other words, the objective of IAEA inspections under such agreements is verification of not just the nondiversion of declared nuclear material (the correctness of state declarations), but also the absence of undeclared nuclear material and activities (the completeness of state declarations).

At the end of 1993, the IAEA Secretariat, at the request of the board, embarked on an ambitious program, known as Programme 93+2, to develop a comprehensive set of measures for strengthening safeguards. These measures, which were presented to the board in 1995,<sup>[2]</sup> comprised two parts. The first part consisted of measures that could be implemented under the existing legal authority of comprehensive safeguards agreements. The most significant of these measures was a profound change in the IAEA's evaluation of information available to it about a state. Instead of assessing the results of its verification activities separately for each individual facility in a state, the IAEA would visualize the state's nuclear program in a coherent and connected way by looking at the state as a whole.

The second part consisted of measures that the secretariat proposed be implemented on the basis of a new legal instrument. These measures were eventually transformed into the Model Additional Protocol, which the board approved in May 1997.<sup>[3]</sup>

As described in the secretariat's reports on Programme 93+2, an important consequence of these strengthening measures was that they would not only improve safeguards effectiveness, but also permit the IAEA to introduce efficiencies in safeguards implementation. If the IAEA was able to conclude that a state's declarations under its comprehensive safeguards agreement were correct and complete, commonly referred to as "the broader conclusion," it could consider reducing its in-field inspection effort on those parts of the nuclear fuel cycle that were less proliferation sensitive. For example, if the agency was able to assure itself that there was no undeclared reprocessing in a state, it could reduce the frequency of inspections at a power reactor using low-enriched uranium from four times a year to one.

In 2002 the conceptual framework for this process, known as integrated safeguards, was presented to the board. The board took note of it, and the secretariat proceeded to implement it.<sup>[4]</sup> Within this framework, the IAEA took into account state-specific characteristics and features and all other safeguards-relevant information available to it about the state concerned and, in consultation with the state, developed a customized "state-level integrated safeguards approach." Although limited to states for which the IAEA had reached the broader conclusion, integrated safeguards became the first wide-scale implementation of safeguards at the level of the state rather than the facility.

The term "state-level concept" was first used with reference to this process in a board document in the director-general's 2005 report on safeguards implementation during 2004.<sup>[5]</sup> As the report noted, the state-level concept was already being implemented for states with integrated safeguards, and it would eventually be extended to all other states with comprehensive safeguards agreements. The report also said that the next step would be the evolution of safeguards to take full advantage of the information available to the IAEA in order to better focus safeguards activities in all comprehensive safeguards agreements, given the environment of increasing verification demands and a static safeguards budget.

So entered into the lexicon of safeguards the state-level concept, simply another way of referring to the agency's practice, well established by then, of evaluating all safeguards-relevant information about a state as a whole and, where possible, tailoring safeguards to fit the state concerned.

In 2010 the Department of Safeguards presented the results of its long-term strategic plan for 2012-2023,<sup>[6]</sup> in which it stated that, in its efforts to focus its activities and resources where they mattered most in terms of achieving safeguards objectives, it would further develop the state-level concept and extend its application to all states.

There were no serious challenges to the implementation of that concept until 2012 when, for reasons that were not entirely apparent, Russia actively challenged the state-level concept.<sup>[7]</sup> Although some of its concerns were shared by other states, the challenges were particularly surprising

because, as a nuclear-weapon state, Russia does not have a comprehensive safeguards agreement in force and because it had previously supported all of the early efforts to strengthen safeguards.

Among the issues raised by these states during the 2012 General Conference were the prospect that application of the state-level concept could result in the IAEA making political and subjective judgments about states; the need for further definition of specific elements of the concept, such as what constituted safeguards-relevant information and safeguards objectives; and the authority of the secretariat to implement the concept without approval of the board or General Conference. Clearly, further clarifications and information by the secretariat were necessary for states to fully understand the state-level concept.

A remarkable aspect of the discussion during the General Conference was the tone of suspicion and distrust directed at the secretariat, triggered by a perceived lack of transparency on the part of the secretariat and reportedly exacerbated by external political factors unrelated to strengthening safeguards. This mistrust spawned further suspicions about the real intentions behind the state-level concept, as reflected in suggestions that states were being asked to agree to measures not covered by their safeguards agreements and in implications that decisions about state-level approaches were being taken by the secretariat “behind closed doors.”<sup>[8]</sup>

Against that backdrop, the General Conference in its 2012 safeguards resolution requested the director-general to report to the board on “the conceptualization and development of the State-level concept for safeguards.”

In response to that request, Amano issued an 11-page report in August 2013 entitled “The Conceptualization and Development of Safeguards Implementation at the State Level.”<sup>[9]</sup> In that document, the secretariat provided background information on the evolution of safeguards. The report described the secretariat’s development of state-level approaches under the state-level concept and their implementation in states with comprehensive safeguards agreements.

As in the case of the 2002 report to the board on integrated safeguards, the board was asked at its September 2013 meeting only to take note of the director-general’s report, rather than to approve it. Although many board members expressed support for the report, the state-level concept was far from an unqualified success. The board ultimately took note of the report and of Amano’s statement that he would produce, in consultation with member states, a supplementary document on the state-level concept for consideration by the board before the General Conference met in September 2014.

During the General Conference that took place immediately after that board meeting, member states considered the matter again. The overall tone of the critical comments seemed to reflect skepticism and an unwillingness to acknowledge any merit in the secretariat’s responses. Nevertheless, the General Conference took note of the report and the director-general’s intention to produce the supplementary document.<sup>[10]</sup>

### **Challenges to IAEA Authority**

In developing the state-level concept, the secretariat understood that it was doing what it had been tasked with doing: continuously looking for ways to improve the effectiveness and efficiency of safeguards implementation. In resolutions dating from 2006, the General Conference had urged the secretariat to continue to do so through the use of state-level approaches.

Debates on the state-level concept provided an opportunity for states to express genuine concerns. Unfortunately, they also provided a platform for some states to call into question the most fundamental principle in the implementation of the comprehensive safeguards agreements: that the right and obligation of the IAEA to verify the correctness and completeness of state declarations derives from the agreements themselves.

All comprehensive safeguards agreements are based on INFCIRC/153, an IAEA document negotiated in 1970-1971 by a board committee open to all member states of the agency.<sup>[11]</sup> A plain reading of INFCIRC/153 makes clear that a comprehensive safeguards agreement requires the IAEA to provide

assurances that all declared nuclear material of a state is under safeguards and that the state has declared and placed under safeguards all nuclear material that is required to be declared. Paragraph 2 of INFCIRC/153 provides that the IAEA “has the right and the obligation to ensure that safeguards will be applied...on all source or special fissionable material.” The drafters of INFCIRC/153 agreed on this formulation after due consideration and explicit rejection of a proposal by one member state that “safeguarding and inspection...shall be concerned solely with the material reported upon by the state concerned.”[\[12\]](#)

Well before Programme 93+2 was initiated or the Model Additional Protocol even contemplated, the board made a number of decisions confirming that the IAEA had not just the right but the obligation to verify that all nuclear material required to be safeguarded under a comprehensive safeguards agreement was under safeguards and that, in fulfilling that obligation, the agency had the right to use all relevant information available to it about the state concerned. These decisions addressed a range of countries and issues.

South Africa. In September 1991, IAEA member states, in resolutions adopted by the board[\[13\]](#) and the General Conference,[\[14\]](#) requested the director-general to verify the “correctness and completeness of the inventory of South Africa’s nuclear installations and material” under its newly approved comprehensive safeguards agreement.

Special inspections. In February 1992, the board, acting through a chairman’s summary, reaffirmed the IAEA’s right under comprehensive safeguards agreements to ensure that all nuclear material in all peaceful nuclear activities is under safeguards.[\[15\]](#)

Romania. In June 1992, the board, again acting through a chairman’s summary, took note of Director-General Hans Blix’s report on noncompliance by the former regime in Romania with certain provisions of its comprehensive safeguards agreement, brought to the IAEA’s attention by the successor Romanian government, and requested that the director-general report the noncompliance to the UN Security Council “for information purposes.”[\[16\]](#)

Strengthening safeguards. The General Conference in September 1992 adopted a resolution in which it noted the “decisions taken by the Board over the preceding 12 months to strengthen the safeguards system” and called on member states to cooperate with the IAEA in implementing those decisions.[\[17\]](#)

Finally, in late February 1993, Blix submitted a report to the board informing it of an anomaly the secretariat had discovered in North Korea. The anomaly had given rise to doubts about the completeness of the country’s initial report of nuclear material under its comprehensive safeguards agreement. Based on the director-general’s report and a detailed secretariat briefing, the board adopted a resolution in which it stressed that it was “essential to verify the correctness and assess the completeness” of North Korea’s initial report and decided that the access to additional information and locations requested by the director-general was “essential and urgent in order to resolve differences and to ensure verification of compliance” by North Korea with its comprehensive safeguards agreement.[\[18\]](#)

It is simply disingenuous to contend, as a few states have recently, that the above examples of decisions by the board and the General Conference are not germane to the issue of IAEA authority under comprehensive safeguards agreements either because they were related to the implementation of safeguards in specific states or because the acceptance of a chairman’s summary does not constitute a formal decision.[\[19\]](#) The safeguards agreements of South Africa and North Korea are substantively identical, as are all comprehensive safeguards agreements. Furthermore, the board has made decisions on many occasions through the mechanism of a chairman’s summary of its deliberations, including decisions with respect to the most sensitive of issues, noncompliance. This was the case for Iraq as well as Romania.[\[20\]](#)

It is particularly difficult to understand how any state, let alone states that participated in deliberations by the board or General Conference between 1991 and 1993, can argue that the IAEA’s obligation under a comprehensive safeguards agreement to verify completeness derives exclusively from an additional protocol. The push by member states for the IAEA to provide assurances of the

absence of undeclared nuclear material and activities under such agreements—and, indeed, the board and General Conference decisions confirming IAEA authority to do so—predated even the contemplation of new legal authority.

Some states question the need for an additional protocol if the IAEA already has the right to verify completeness of a state's declarations under a comprehensive safeguards agreement. The answer is straightforward: the IAEA's right and obligation to verify correctness and completeness derive from the comprehensive safeguards agreement, but in such an agreement, there are limited tools for doing so, such as special inspections. An additional protocol secures for the IAEA broader access to information and locations on a more routine, predictable, and reliable basis. This permits the IAEA to detect indications of undeclared nuclear material and activities earlier and more effectively than it otherwise would.

Another challenge to IAEA authority to verify the absence of undeclared nuclear material and activities in a state has been that proving a negative is impossible. In one of his reports to the board on Programme 93+2, Blix acknowledged that “[n]o safeguards system, no matter how extensive the measures, can provide absolute assurance that there has been no diversion of nuclear material or that there are no undeclared nuclear activities in a State.”<sup>[21]</sup> The IAEA made that point again in 2003 in its reports on Iraq to the UN Security Council, in which it acknowledged that proving a negative was not possible even with the authority granted under Security Council resolutions.<sup>[22]</sup>

Yet, the IAEA could look for indications of undeclared activities. In the case of Iraq, having sought such indications and not found any, the agency could conclude with a high degree of confidence that Iraq had not resumed its nuclear weapons program. As it turned out, the IAEA was right.

Some critics have articulated a somewhat more nuanced argument. Although the IAEA has the right to follow up on indications of undeclared nuclear material and activities, it does not have the right to look for such indications. Again, the argument is disingenuous. If one does not look for something, one is not likely to find it. Would critics of completeness efforts conclude that the IAEA should not even try to determine whether such indications exist? Blix addressed that point in 1995 by invoking a person “looking for a lost key near a lighted street lamp who, when asked whether he was sure he had lost the key there, said ‘No, but it’s easier to look here.’”<sup>[23]</sup>

### Managing the Consequences

IAEA safeguards are not based on confidence; they are designed to create confidence. The degree of confidence created is directly dependent on the scope and reliability of the verification process. The real issue at stake here is not the state-level concept, but the risk of dramatic damage to effective safeguards implementation. There is a further risk that the damage could creep into the NPT review process.

The confluence of external political circumstances with IAEA efforts to further strengthen safeguards may have inadvertently created those risks by providing an opportunity for reinterpreting and thereby eroding IAEA verification authority under comprehensive safeguards agreements. The most immediate practical impact of acceding to such a reinterpretation would be to permit a state that has only a comprehensive safeguards agreement and no additional protocol, such as Iran, to prevent the IAEA from investigating indications of undeclared nuclear material and activities in that state. If that reinterpretation is not addressed directly and rejected explicitly, safeguards could be forced to revert to a pre-1991 approach to verification that focused primarily on declared nuclear material, which resulted in the IAEA's failure to detect Iraq's undeclared nuclear program.

Others can speculate on the underlying motivations of the vocal critics of the state-level concept. The more pressing concern is that the debate on the state-level concept might have unintentionally provided a vehicle for a rearguard attack on the hard-won progress made 20 years ago in strengthening safeguards. If so, this would be a dramatic and unfortunate example of the law of unintended consequences.

Are IAEA member states going to dismantle what was achieved in strengthening safeguards—what the secretariat achieved at the request of the member states?

The biggest challenges to effective safeguards and their further evolution are not technical. They are a lack of knowledge about the history of safeguards and a misrepresentation of the history that capitalizes on that lack of knowledge. It is possible to correct the former and to limit the impact of the latter through education and communication by raising the level of knowledge about safeguards and the history of their evolution. It is incumbent on all parties to understand what has already been achieved in strengthening safeguards so that it is not necessary to reinvent those achievements.

During the agency's September deliberations on the state-level concept, member states should make a renewed and explicit commitment to effective IAEA safeguards and reaffirm the IAEA's right and obligation to verify not just the correctness but the completeness of state declarations under comprehensive safeguards agreements.

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### ENDNOTES

1. International Atomic Energy Agency (IAEA), "The Conceptualization and Development of Safeguards Implementation at the State Level," GOV/2013/38, August 12, 2013, para. 12; Yukiya Amano, "Introductory Statement to the Board of Governors," September 9, 2013, <http://www.iaea.org/newscenter/statements/2013/amsp2013n17.html>.
2. IAEA, "Strengthening the Effectiveness and Improving the Efficiency of Agency Safeguards: Report by the Director General to the General Conference," GC(39)/17, August 22, 1995, annexes 1 and 4.
3. IAEA, "Model Protocol Additional to the Agreement(s) Between State(s) and the International Atomic Energy Agency for the Application of Safeguards, INFCIRC/540 (Corrected), September 1997.
4. See IAEA, "Background on IAEA Board of Governors' Approval of Framework for Integrated Safeguards," November 17, 2010, [http://www.iaea.org/newscenter/news/2002/sgarticle\\_02.shtml](http://www.iaea.org/newscenter/news/2002/sgarticle_02.shtml). "Taking note" is a neutral term, an acknowledgment that information was conveyed rather than an indication of approval or disapproval.
5. IAEA, "Conceptualization and Development of Safeguards Implementation at the State Level."
6. IAEA Department of Safeguards, "Long Term Strategic Plan (2012-2023): Summary," n.d., [https://www.iaea.org/safeguards/documents/LongTerm\\_Strategic\\_Plan\\_\(20122023\)-Summary.pdf](https://www.iaea.org/safeguards/documents/LongTerm_Strategic_Plan_(20122023)-Summary.pdf).
7. Mark Hibbs, "The Plan for IAEA Safeguards," Carnegie Endowment for International Peace, November 20, 2012, <http://carnegieendowment.org/2012/11/20/plan-for-iaea-safeguards>; Mark Hibbs, "Russia's Safeguards Problem," Arms Control Wonk, December 3, 2012, <http://hibbs.armscontrolwonk.com/archive/1196/russias-safeguards-problem>.
8. IAEA, "Committee of the Whole: Record of the Fourth Meeting," GC(56)/COM.5/OR.4, December 2012.
9. IAEA, "Conceptualization and Development of Safeguards Implementation at the State Level."
10. IAEA, "Strengthening the Effectiveness and Improving the Efficiency of Agency Safeguards," GC(57)/RES/13, September 2013, para. 21.
11. IAEA, "The Structure and Content of Agreements Between the Agency and States Required in

Connection With the Treaty on the Non-Proliferation of Nuclear Weapons," INFCIRC/153 (Corrected), June 1972.

12. The state was South Africa. International Energy Associates Ltd., "Review of the Negotiating History of the IAEA Safeguards Document INFCIRC/153," July 30, 1984, pp. 33-44, <http://cgs.pnnl.gov/fois/doclib/INFCIRC153Ch1-3.pdf>.

13. IAEA, "Safeguards: Draft Resolution Submitted by Egypt, Morocco, Nigeria and Tunisia on Behalf of the Africa Group," GOV/2547/Rev.1, September 11, 1991.

14. IAEA, "South Africa's Nuclear Capabilities," GC(XXXV)/RES/567, September 1991. The draft resolution, submitted by Zaire on behalf of the African Group, was adopted without a vote.

15. IAEA, "Record of GOV/OR Meeting 776," GOV/OR.776, February 25, 1992, paras. 48, 83, and 84.

16. IAEA, "Record of GOV/OR Meeting 783," GOV/OR.783, June 17, 1992, paras. 90-93.

17. IAEA, "Strengthening of the Safeguards System," GC(XXXVI)/RES/586, October 1992.

18. IAEA Board of Governors, "Report on the Implementation of the Agreement Between the Agency and the Democratic People's Republic of Korea for the Application of Safeguards in Connection With the Treaty on the Non-Proliferation of Nuclear Weapons," GOV/2636, February 26, 1993. The draft resolution was adopted without a vote. The director-general's report and the official records of the board's discussion, which was held in closed session, have not been publicly released by the IAEA.

19. IAEA, "Committee of the Whole: Record of the Seventh Meeting," GC(57)/COM.5/OR.7, March 2014, paras. 25-160.

20. In July and September 1991, the board found that Iraq's failure to declare nuclear material and facilities in connection with its clandestine uranium-enrichment and plutonium-separation programs constituted noncompliance with its comprehensive safeguards agreement and requested the director-general to report the matter to the UN Security Council. The first decision was taken by a resolution, and the second decision was made through the mechanism of consensus adoption of a chairman's summary of the board's deliberations. IAEA, "Iraq's Non-Compliance With Its Safeguards Obligations," GC(XXXV)/978, September 16, 1991; IAEA, "Iraq's Non-Compliance With Its Safeguards Obligations," GC(XXXV)/978/Add.1, September 16, 1991.

21. IAEA, "Strengthening the Effectiveness and Improving the Efficiency of the Safeguards System," annex 1, para. 15.

22. "It is important to emphasize that there is always some degree of uncertainty in the verification process, and the Agency cannot provide absolute guarantees regarding the absence of small-scale nuclear activities, such as simulations on personal computers or lab work by a few scientists (or indeed, direct acquisition by a state of weapons-usable nuclear material)... Nevertheless, an intrusive inspection system [such as the one that the IAEA was implementing in Iraq] can minimize the risk of prohibited activities going undetected, and deter, through the risk of early detection, the revival of a nuclear weapons programme." UN Security Council, "Letter Dated 19 March 2003 From the Secretary-General Addressed to the President of the Security Council," S/2003/342, 20 March 2003 (containing the IAEA work program in Iraq pursuant to Security Council Resolution 1284).

23. IAEA, "Strengthening the Effectiveness and Improving the Efficiency of Agency Safeguards," annex 3, para. 49.

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