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International Atomic Energy Agency (IAEA) Key to Success of Nuclear Verification Efforts

New USIP Book Details History of Nuclear Weapons Programs

For Immediate Release

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(Washington)—The United States Institute of Peace (USIP) releases *Detect, Dismantle, and Disarm: IAEA Verification, 1992-2005*, by Christine Wing and Fiona Simpson. This book chronicles the IAEA's experience when faced with revelations of a state's hidden nuclear program. Analysis of four cases—Iraq, the Democratic People's Republic of Korea (DPRK), South Africa, and Libya—reveals how verification has worked in practice and captures lessons useful for future missions.

Detect, Dismantle, and Disarm arrives at a time of great importance for the nuclear disarmament, nonproliferation, and arms control communities, as both the DPRK and Iranian nuclear programs draw intense international scrutiny and frequent negotiation. Wing and Simpson continue, "there are lessons in the IAEA's past experience that can be useful in thinking about its role in verifying compliance with future agreements."

The authors effectively highlight how the IAEA has operated alongside governments and international bodies to develop strategies for ensuring dismantlement of covert nuclear programs over the last two decades. With richly detailed histories of each state's nuclear program, descriptions of interagency dynamics, and carefully considered predictions, this book provides a fresh, accessible, and nontechnical perspective on future nuclear nonproliferation agreements.

"Our goal is to distill these experiences into a form that will be helpful for policymakers—particularly those who are not technically trained—and for nongovernmental organizations (NGOs) and journalists who want to assess those activities from the outside," state Wing and Simpson.

The authors identify key questions for the development of future verification missions, including the need for firm initial agreements for inspections, the importance of the number of actors involved in the process, and the role of the IAEA. They also suggest the time may be ripe to reconsider the rules that apply to states that seek to obstruct verification efforts.

"The challenge for those developing or evaluating these new verification efforts will be to discern the right lessons for the right cases," conclude Wing and Simpson. "We hope that this study will assist in that task."

ABOUT THE AUTHORS

Christine Wing is an independent consultant. She teaches about nuclear nonproliferation, is a nonresident senior fellow at the Center on International Cooperation at New York University, which was a grantee of USIP (2007–08). **Fiona Simpson** was a senior fellow at the Center on International Cooperation during the writing of this book. Previously, she worked at the International Atomic Energy Agency. Simpson currently works in the Weapons of Mass Destruction Branch of the United Nations Office for Disarmament Affairs.

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Detect, Dismantle, and Disarm

Questions and Answers with the Authors

Why is verification particularly important for nonproliferation and disarmament?

Verification is the practice of determining that a state is in compliance with its treaties and other international commitments. Inspection teams and the information that they collect are the primary tools of verification, along with satellite and human intelligence.

The process of verifying compliance is critical to the success of nuclear agreements, and this is true for two major reasons. First, verification assures states parties that other states are meeting their commitments, and this creates confidence in the security environment shaped by the agreement. Second, if a state is not in compliance, the verification process can demonstrate that fact, and this can trigger efforts to bring the state back into compliance.

The case studies in this book reveal a key point regarding the impact of the verification process: we found that in some cases, the actual attempt to verify compliance effectively enhanced the power of the state under inspection. This can happen because the **International Atomic Energy Agency (IAEA)**, key governments, and other global powers are reluctant to abandon any potentially successful efforts, giving them added incentive to craft special arrangements with noncompliant states.

One of the central questions of the book is, “Are the existing institutional bases and the treaties that underlie them adequate to the task of verifying nonproliferation when a state wants to hide its nuclear activities?” How does analysis of the IAEA shed light on this question?

Focusing on the IAEA revealed several important things about the role of international agencies in cases where states had covert nuclear programs, and the country cases in this study uncover lessons about the crafting and implementation of nuclear verification agreements within that context.

First, the function of the IAEA in each case was different and evolved over time, demonstrating a range of options for the agency when verifying program dismantlement or disarmament. This points out the need for flexibility in agreements, so that the conduct of verification can be fine-tuned to the particulars of the nuclear program in a way that defines and applies standards equitably. Second, the technology of verification is highly advanced, but even as the technology becomes more accurate, it still must be applied carefully in the context of human personalities and emotions. Finally, attention must be paid to the dynamics between scientific precision and political reality. Past lessons should provide useful guidance in using existing institutions, like the IAEA, to adapt to changing international nuclear circumstances.

What makes these particular countries and their nuclear activities—Iraq, the Democratic People’s Republic of Korea (DPRK), South Africa, and Libya—particularly useful cases?

In three of the cases—Iraq, South Africa, and Libya—the IAEA’s task was principally to verify that the nuclear program had been dismantled and that routine monitoring was in place. In South Africa, the only country of the three in which nuclear weapons had been produced, there was the additional task of verifying nuclear disarmament. The DPRK has presented a different challenge. The attempt to achieve a durable agreement on the North Korean program is now more than two decades old. The IAEA’s initial role in the DPRK was to verify that its 1992 safeguards declaration was correct and complete. That task has yet to be accomplished, and the DPRK has tested two nuclear devices over the past five years—so it is likely that any future agreement with the DPRK would require a disarmament process as well.

Given the analysis of these four countries, what were some of the key factors for success in a verification mission?

- States' willingness to cooperate and their desire to demonstrate compliance. Where the interests of the state and the verification mission were in basic agreement—as in South Africa and Libya—inspectors were able to complete their assignment effectively. However, when interests of the state and mission diverge, inspections are drawn out or left unfinished. This is and was the case in the DPRK and Iraq.
- Multiple actors. Although multiple actors would not cause a mission to fail, it was a complicating factor that did at times erode effectiveness.
- Technical capability was not a limiting factor. This study finds that technical challenges were largely overcome.

Challenges to verification missions appear two ways: when noncompliance is suspected, but the state does not allow external access to come to a judgment; and when noncompliance is determined, but the state refuses to come back into compliance. Although this is an issue of enforcement, not verification, how might this book contribute to a solution to this problem?

As stated earlier, when countries wish to demonstrate their compliance with treaties and allow inspectors access, verification is relatively straightforward. The failure of this same process in other cases indicates that the rules for determining compliance may need to change when a state prevents access to necessary information. Currently, the burden rests with the IAEA or other agencies to confirm a state's compliance. The burden of proof could shift to the noncooperative state to demonstrate affirmatively that it is in good standing with its treaties. Although it would be difficult to build this mechanism into existing frameworks, the challenges of verifying covert nuclear programs have changed significantly since the IAEA was founded and the NPT was negotiated.

How does this book aid policymakers, journalists, and NGO workers who are addressing issues related to nuclear disarmament and nonproliferation?

The IAEA's experience in these four countries, taken as a whole, represents a detailed catalog of the actual practice of verification when covert nuclear programs have been or are present. By examining the history of nuclear efforts and the investigation of the programs that followed, we can generalize across cases and distill that experience into a form that can be helpful to policymakers and those involved in planning and implementing verification activities—as well as those who wish to assess these activities from outside, such as journalists and nongovernmental organization workers.

What are some of the most important take-aways for practitioners who pick up this book?

Practitioners can make use of this series of “questions to keep in mind” when designing or evaluating verification missions:

- *How firm are the initial agreements for inspections, dismantlement, and verification?* Renegotiating the terms of the agency's right to verify compliance with agreements already in place is problematic, if sometimes unavoidable. Establishing mutually agreed terms for inspection and verification before inspectors hit the ground will improve the chances of success.
- *How many actors are involved in the verification process?* The cases in which there were fewer actors concluded inspections more expeditiously. Although the success of a verification mission may not *depend* on the number of actors involved, it is important to consider that the presence of multiple players increases the difficulty of managing a greater number of end goals and motivations.
- *What role is the IAEA to play?* In the four cases in this book, the IAEA's involvement in designing and implementing verification missions was established on an ad hoc basis. It is difficult to design a fixed template, given the need for flexibility and the need to target specific situations. Insight into the future of verification missions may come from the four possible roles suggested by these case studies where the IAEA functions: on its own, as the lead with support, in equal partnership with other actors, or as a supporting party.

Why does the IAEA enjoy such flexibility in its role in verification and disarmament?

The IAEA envisions its work as having three pillars: safeguards and verification, safety and security, science and technology. Although the IAEA reports to the United Nations and the U.N. Security Council, it remains an independent organization with its own policymaking bodies.

The statute that established the IAEA in 1957 primarily gave it the role of promoting and facilitating the peaceful uses of nuclear energy. The statute also refers to disarmament, but nowhere does it identify it as one of the IAEA's functions, although it does allow the IAEA to be designated in that role. When the Treaty on the Nonproliferation of Nuclear Weapons (NPT) entered into force in 1970, it required parties to the treaty to enter into an agreement with the IAEA for verification of compliance. This established a relationship that specified the role of the IAEA in verification, but not nuclear disarmament.

The first time the international community had definitively located a covert nuclear program was in Iraq in 1991, after the first Gulf War. No agency had prior experience in verifying that such programs had been dismantled. Iraq was soon followed by situations in the DPRK, South Africa, and Libya; the IAEA played a significant role in scrutinizing the nuclear activities of all four of these countries. It is these actual experiences on the ground that begin to establish an understanding of an appropriate IAEA role in a situation of program dismantlement and disarmament.

Given the current situation in the DPRK, what are some of the possibilities for future verification missions?

The DPRK has cycled between periods of openness to disable its nuclear program and threats to ramp up operations. The longstanding dispute could evolve in one of several ways over the next five to ten years. It is possible that the DPRK could enter into a lasting negotiated solution, including dismantlement and disarmament leading to normalized international relations. In this event, any verification mission would need to "detect, dismantle, and disarm" the nuclear program. The IAEA's experience in several of the cases studied here should help to inform that process. It is also possible that the DPRK will not make any significant changes, will become a permanent nuclear weapon state outside the NPT, or will face significant political or governmental changes. In these scenarios, it is unclear whether there will be any role for verification.

If an agreement about Iran's nuclear program is eventually reached, what can we expect from the involved parties?

The process by which any agreement is reached among Iran, involved states, and the IAEA will be important in shaping verification. If it were relatively cooperative, the task of verification should be fairly straightforward. If, however, the agreement were arrived at more coercively, Iran would likely cooperate with inspectors grudgingly and might be prone to rescinding access. In that case, there may also be efforts to renegotiate previous agreements by creating new conditions for access, putting states and the IAEA in the difficult position of trying to implement verification while the agreement is, in effect, changing. Despite the difficulty of reaching agreement among key states and Iran, the IAEA has been very active in the Iranian issue to date, and it is hard to envision a constructive approach to the Iranian case that did not involve the substantial support of the IAEA in verification. If an agreement is not reached, there are a number of possible directions for the Iranian program: Iran could continue to ramp up its enrichment capabilities despite sanctions; a nuclear test could be announced or detected; or one or more states could attack Iranian nuclear facilities. The role of the IAEA, if any, would depend on how the international community responded to these developments.

Praise for *Detect, Dismantle, and Disarm*

“The important work of the IAEA in verifying dismantlement and disarmament has attracted surprisingly little attention—until now. In this comprehensive study, Wing and Simpson fill that lacuna by collecting and analyzing a wealth of data about all the relevant cases. Developing machinery capable of effectively verifying the rollback of nuclear weapon programs, especially in a non-cooperative setting, is a critical element of creating a rules-based nuclear order able to meet today's nuclear threat. This useful and interesting volume advances that vital goal.”

—James Acton, Senior Associate, Nuclear Policy Program, Carnegie Endowment for International Peace

“This volume’s comprehensive case studies provide a unique account of the way in which verification is embedded in messy and ad hoc political processes.”

—Trevor Findlay, Professor, Normal Paterson School of International Affairs, Carleton University and Fellow, Belfer Center for Science and International Affairs, Harvard University