IPNDV
INTERNATIONAL PARTNERSHIP FOR
Nuclear Disarmament Verification

Some Thoughts on Verification Objectives, Declarations, and Their Implications from the Perspective of an Inspecting Entity

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Introduction

From the perspective of a multilateral inspecting entity (Inspector), this paper discusses Inspectors' verification objectives in a notional nuclear disarmament agreement. In light of that discussion, it explores how those objectives shape the perspectives of Inspectors regarding what verification provisions should be included in any nuclear disarmament agreement and the implementation of such provisions, especially inspection activities. It then provides a short description of different types of declarations and their role in nuclear disarmament verification. That description forms the basis on which to consider what the content of such declarations should be and how they should be implemented, again from the perspective of Inspectors.

To illustrate its points, this paper uses the International Partnership for Nuclear Disarmament Verification (IPNDV) Basic Scenario that has helped to structure the IPNDV's work. In the scenario, summarized by the text box to the right, several nuclear-armed states commit to reduce, dismantle, and eliminate part of their nuclear arsenals. The paper draws on analysis conducted by the IPNDV. It also reflects some of the insights gained from a series of table-top exercises carried out by the IPNDV. This paper is a companion piece to the paper on verification objectives, declarations, and implications from the perspective of an inspected (Host) state.[1]

IPNDV Basic Scenario

- A nuclear-armed state, Ipindovia, is one of several States parties to the Nuclear Weapons Reduction Treaty (NWRT)
- The NWRT obligates Ipindovia and other States party to the treaty to reduce their arsenal of nuclear warheads from 1,000 to a maximum of 500
- Ipindovia is obligated to dismantle those nuclear warheads
- Dismantlement and absence of warheads over the 500-warhead limit is to be verified by a multilateral body consisting of both nuclear- and non–nuclear-armed states
- The NWRT includes a set of specific inspection processes, procedures, techniques, and technologies (PPTT) to be used for verification of the dismantlement of nuclear warheads subject to the treaty
- The NWRT also includes a set of managed access procedures for implementation of inspection PPTT in a manner that protects sensitive information

[1] See "Verification Objectives, Declarations, and their Implications from the Perspective of an Inspected State," https://www.ipndv.org/reports-analysis/some-thoughts-on-verification-objectives-declarations-and-their-implications-from-the-perspective-of-an-inspected-state

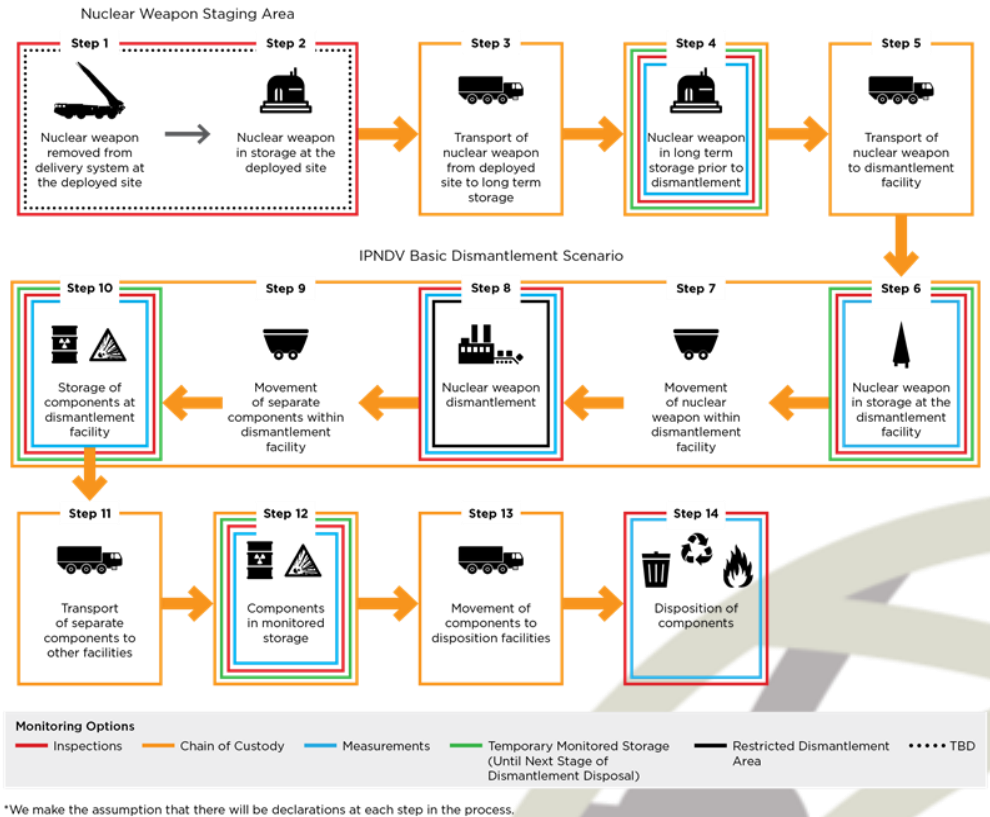
Inspectors' Verification Objectives: Confirming Obligations, Implementing the Disarmament Agreement

Cascading Levels of Objectives

When contemplating nuclear disarmament, three distinct levels of cascading verification-related objectives stand out. These are (1) treaty disarmament objectives; (2) high-level verification objectives; and (3) additional implementation-specific verification objectives (with associated inspection activities).

The *treaty disarmament objectives* are defined by the legally binding obligations assumed by the States parties to a disarmament agreement. These objectives are taken as a given by Inspectors. In the Basic Scenario, for example, the most fundamental objective is to reduce the nuclear arsenals of Ipindovia and other parties to the NWRT from 1,000 nuclear warheads to a maximum of 500. A related treaty disarmament objective is to ensure the elimination of those nuclear warheads according to the 14-Step dismantlement framework set out in Figure 1.

Figure 1. Monitoring and Verification Activities, as Identified by the IPNDV for Key Steps in the Process of Dismantling Nuclear Weapons



*We make the assumption that there will be declarations at each step in the process.

Flowing from the treaty disarmament objectives, Inspectors have a set of *high-level verification objectives* for any specific agreement. These high-level objectives serve the overarching goal of confirming that the legally binding obligations assumed by the parties are being met. The Host shares this goal, often stated, in its case, as demonstrating that it is meeting its treaty obligations.

By way of example, Inspectors' high-level verification objectives in the Basic Scenario are to confirm that, consistent with its declarations, Ipindovia and the other parties to the NWRT (1) have reduced their number of warheads to 500; (2) have dismantled the 500 nuclear warheads reduced under the agreement; and (3) and that no nuclear warheads over the 500 nuclear warhead limit remain once the reductions mandated by the NWRT have been completed.

Additional *implementation-specific verification objectives (and associated inspection activities*) comprise the next level. Each of these objectives sets out what the Inspectors need to achieve to meet the high-level objectives as the States parties undertake specific activities to implement the disarmament agreement. Declarations by the parties concerning their ongoing implementation activities undergird these more implementation-specific objectives and trigger the inspection activities associated with them. In effect, verification of disarmament is the confirmation of those declarations.

To again use the Basic Scenario and the 14-Step framework as an example, Step 1 of that framework posits that one starting point for Ipindovia's reduction of nuclear warheads is the removal of a warhead from a delivery system at a deployment site.[2] In order to meet the high-level objective of providing credible assurance in the reductions process, Inspectors would need to establish chain of custody over the containerized warhead in order to initialize it into the treaty regime. Following initialization, any interference with the container or diversion of the nuclear warhead contained within it can be detected prior to its dismantlement at Step 8 (implementation-specific objectives). To do so, Inspectors may be permitted to observe, under managed access procedures, the removal of the warhead from a delivery system in order to confirm a unique identifier (UID) on the container to be used for the onward transport of that nuclear warhead in the 14-Step dismantlement process, to place tags and seals on that container, and to take radiation measurements to confirm the presence of special nuclear materials (SNM) in the container (associated inspection activities).

Or to take a different example, Step 4 of the 14-Step framework entails the long-term storage of containerized nuclear warheads prior to their onward movement for dismantlement at Step 8. At Step 4, providing credible assurances in the dismantlement process would require confirming and sustaining chain of custody as an implementation-specific objective–and restoring chain of

[2] For a discussion of such implementation-specific verification objectives at each of the 14 steps, see Working Group 5, "Verification of Each of the 14 Steps of Nuclear Weapon Dismantlement," https://www.ipndv.org/wp-content/uploads/2020/04/WG5-Deliverable_FINAL-.pdf.

custody in the event of a breach. Given the presence of significant numbers of containerized nuclear warheads in storage, it also would be necessary to ensure the physical integrity of storage bunkers, sites, and containers. An additional implementation-specific objective at this step is to establish and routinely check inventories of containerized nuclear warheads in storage. Associated inspection activities would include checking UIDs, tags, and seals on containers; radiation measurements; containment and surveillance; and visual checks of the integrity of containers, sites, and facilities.

In the Basic Scenario and the 14-Step framework, once dismantlement has occurred at Step 8, implementation-specific objectives at later steps again would be to confirm and sustain chain of custody–and restore it if necessary–and confirm that no diversion had taken place. However, from Step 8 onward, the treaty-accountable item would be the SNM and high explosives (HE) removed from the nuclear warheads at Step 8. In turn, while the basic inspection activities would carry forward (e.g., confirming UIDs, tags, and seals on containers) some activities could be modified (e.g., active types of radiation monitoring could be safe to use) to confirm the presence of separated SNM in containers.

Inspector Perspectives on Verification Objectives: Implications for Defining Treaty Elements and Implementing Inspections

During negotiations, both the high-level and specific treaty implementation verification objectives will shape the views of the negotiating parties on the detailed verification provisions to include in a nuclear disarmament agreement. Once an agreement is concluded, these objectives will shape subsequent interactions between Inspectors and Hosts during the implementation of any agreement.

Inspector Perspectives on Verification Objectives: Implications for Treaty Elements

Declarations of treaty-accountable items subject to a disarmament agreement, the locations of such items, and treaty-related sites and activities are the starting point for verification of any disarmament agreement. This aspect is considered more fully in the second part of this paper. Suffice it here to state that meeting Inspectors' verification objectives would argue in principle for seeking the *most comprehensive and timely declarations possible* during treaty negotiations. That said, in practice, recognition by the parties to such negotiations that, depending on the specific agreement, they would need to be prepared to implement the agreed declarations' provisions as the "Host," could temper what would be included in the final disarmament agreement.

In the Basic Scenario, the Inspector perspective would argue, for example, for a comprehensive declaration of the total number of nuclear warheads possessed by Ipindovia and other States parties to the NWRT and their locations at operational nuclear bases and other active nuclear-weapons related facilities. Such declarations would be essential to confirming the reduction and dismantlement of 500 warheads under the NWRT and are likely to be so regarded by its parties during negotiations. In addition, the Inspector perspective could argue for including information about former nuclear bases and facilities in declarations. That information could be seen as directly linked to the high-level objective of confirming the absence of nuclear warheads above the eventual 500 warhead limit. In turn, the objective of confirming absence could argue for including other military sites in declarations (e.g., other operating bases and research and development facilities) that theoretically could have the required infrastructure, procedures, and trained personnel to make them usable for storing non-declared nuclear warheads. This last provision likely would be least acceptable to negotiating parties from the perspective of having to host such inspections.

The importance of timely declarations in meeting Inspectors more implementation-specific verification objectives can also be illustrated within the Basic Scenario and 14-Step framework. To use Step 1 as an example, timely and advance notification of plans to remove a nuclear warhead from its delivery vehicle is essential for planning and implementing inspection activities to confirm the removal process. In turn, confirming transport of nuclear warheads from deployment bases to a long-term storage site (Step 4) presupposes timely notification. In this case, however, the Inspector perspective could argue for advance, rather than after-the-fact, notification and for some type of technical monitoring of the transport process, both of which would be unacceptable from a Host perspective due to security concerns. At the least, Inspectors could seek notification as soon as the process of transport had concluded, as opposed to perhaps quarterly updates of all warheads that had been shipped.

The Inspector perspective also could impact the negotiations of more specific *definitions* included within any disarmament agreement. Perhaps the most essential definition is how to define what is the Treaty Accountable Item (TAI). Inspectors could seek a more comprehensive definition that would support multiple layers of verification focused on different aspects of that definition.

For example, within the Basic Scenario, the TAI could include not only the nuclear warheads to be dismantled, but also their delivery systems. Likewise, following dismantlement, the separated SNM and HE components would comprise the TAI and would then be subject to the inspection process after dismantlement (Step 8). Doing so would help compensate for the lack of direct access by Inspectors to that process and help build confidence in verification of dismantlement. The high-level objectives of confirming reductions, dismantlement, and absence all would lead Inspectors to argue that nuclear warheads being refurbished and any other non-deployed nuclear warheads should count as part of the permitted 500. At a more specific level, as part of

definitions, Inspectors could seek as detailed information as possible about what nuclear warhead characteristics are to be measured to confirm the presence or absence of a warhead and, more specifically, the SNM.

Inspectors' verification objectives also could shape their perspectives on the negotiation of more *specific inspection provisions* of any agreement. Subject again to the dual perspective of each negotiating party as possibly both "Inspector" and "Host," the Inspectors' perspective would argue for seeking more comprehensive rights, access, and use of technical equipment by Inspectors.

For Inspectors, across all the steps of the 14-Step framework, the implementation-specific objective of maintaining chain of custody and being able to recover from a breakdown of chain of custody argues for building *two layers of verification security* into the detailed verification protocol. This means providing for the application of different inspection processes, procedures, techniques, and technologies (PPTT) at each step and sufficient inspection time to do so. A right to both visual observation and the application of tags and seals to containers with nuclear warheads removed from their delivery vehicles (Step 1) provides an example. Combining checking tags and seals, using containment and surveillance, and measuring radiation to confirm the presence of containerized nuclear warheads in long-term storage (Step 4) is another example.

Accordingly, the Inspector perspective would argue for obligating States parties to provide more detailed site diagrams of sites subject to inspection and *more extensive access to such sites*. Again in the long-term storage step, greater access could include the right to walk around such a site—accompanied by escorts—to confirm the information provided in site diagrams, rather than simply being driven quickly around the perimeter. The Inspector perspective would shape the negotiation of the frequency mandated for periodic updates of such site diagrams and the definition of what types of site changes would obligate a party to provide that update.

Inspection objectives also are likely to influence the negotiation of *quotas for different types* of inspections to confirm declarations. For example, Inspectors can be expected to argue that there should not be a quota on inspections to confirm the Baseline Declaration of nuclear warheads and associated infrastructure. Instead, there should be a right to visit each and every site declared to host nuclear warheads. Similarly, given the central importance of the high-level objective of confirming dismantlement, Inspectors could argue for not having a quota on the number of inspections that could be carried out to confirm dismantlement of nuclear warheads. Instead, there could be a right to be present whenever notified that a warhead is to be dismantled.

Most broadly, Inspectors' high-level objective in the Basic Scenario, to confirm the absence of any nuclear warheads above the 500 nuclear warhead limit (the completeness of declarations), would argue for the inclusion of a quota of short-notice inspections to be used to inspect declared and formerly declared sites. That quota could be part of basic treaty implementation, thereby

helping from the start to build up a more comprehensive picture of Ipindovia's nuclear operations. Or, it might not take effect until the reduction to 500 nuclear warheads had been completed. In either case, such short-notice inspections would help build a picture of normal operations in Ipindovia against which anomalous, possibly treaty non-compliant activity would be easier to detect. Given this objective, during negotiations, the Inspector perspective likely would also lead them to argue for the inclusion of an evidence-based "challenge inspection" process to address non-declared sites.

In addition, Inspectors can expect to encounter anomalies from time to time during the conduct of inspections—a broken seal, for example. These could also be brought to the attention of Inspectors through notifications from the Host state. In such cases, the Inspector perspective would want some sort of consultative mechanism to address such anomalies and receive clarification as to their cause and impact.

Inspector Perspectives on Verification Objectives: Implications for Inspection Implementation

The verification regime of any nuclear disarmament agreement will identify the PPTT available to Inspectors to achieve their high-level and more implementation-specific verification objectives. It also can be expected to identify different types of inspections and whether or not there are quotas for different types and, if so, the number. The time allowed for any given inspection will also be stated in the agreement. In the Basic Scenario, for example, there are baseline inspections to confirm the data in the Baseline Declaration; regularly scheduled data confirmation inspections, including to confirm initialization of nuclear warheads into the disarmament process and long-term storage; and dismantlement inspections. It also was posited that for the latter two types of inspections, there would be a 72-hour time limit within which Inspectors could carry out their tasks. (The Basic Scenario as currently stated, however, does not specify quotas for inspections although they are assumed to exist.)

Against this background, *inspection planning* will be essential. At one level, such planning would need to determine what priority to place on one high-level verification objective versus another. In particular, a key choice in the Basic Scenario is how much Inspector effort to place on the high-level objectives of confirming the reduction and dismantlement of Ipindovia's nuclear arsenal from 1,000 nuclear warheads to 500, in comparison with the high-level objective of confirming that Ipindovia neither had, nor was producing, undeclared nuclear warheads. Or, put otherwise, how to balance verification of the correctness of Ipindovia's declarations on reductions and dismantlement and verification of the completeness of such declarations. At the least, given their high-level objectives, Inspectors can be expected to want to devote some inspection resources to verifying the completeness and absence of any undeclared Ipindovian nuclear warheads from the start of the agreement's implementation.

At a different level, inspection planning may reveal tensions between allocating resources to one implementation-specific objective rather than another, particularly depending on the constraints on the duration of an inspection and the number of Inspectors on-site. Ensuring chain of custody over nuclear warheads in long-term storage at Step 4 and confirming the integrity of the site or carrying out radiation measurements each take time and will require planning by Inspectors to ensure that all required tasks are accomplished during the inspection timeframe.

Declarations and Implications from an Inspector Perspective

Types of Declarations[3]

Declarations are the fundamental basis upon which a verification regime is built. They provide the foundation to build confidence through a set of inspections that a regime is effective. Declarations also play a crucial role in ensuring the efficient and effective implementation of the specific verification measures provided by a disarmament agreement. More specifically, the primary purpose of declarations is:

> … to offer information that provides the basis for the effective implementation of disarmament agreements and to facilitate the detection of non-compliance by establishing the baseline of declared activities and informing specific monitoring/inspection procedures.[4]

In addition, the information provided by declarations can also help build confidence by offering transparency to other parties to an agreement and facilitating the planning of verification activities (including over the medium to long term). Ultimately, the specific content of declarations will be the subject of negotiations. Initially, negotiations will be between the parties as they agree on the verification protocol of a disarmament agreement; after entry into force (EIF), negotiations may take place between a verification body established by that protocol and a Host state to develop site- and facility-specific arrangements based on the verification protocol for inspections at those sites.

From an Inspector's perspective, the following discussion considers the basic types of declarations and the types of information that would be included within them. The discussion then focuses on possible ways that Inspector perspectives could shape the provisions ultimately negotiated by the parties and their implementation.

[3] This discussion of the purpose and types of declarations draws on the report of IPNDV Working Group 4 in Phase II and closely mirrors the companion paper on "objectives and declarations" done by the Phase III Host Task Group. For the Working Group 4 report, see https://www.ipndv.org/reports-analysis/working-group-4-verification-of-nuclear-weapons-declarations/.

[4] Ibid.

The declarations process would begin during the negotiation of a disarmament agreement and would entail provision prior to EIF by the parties of an *Initial Declaration* that would contain the information needed during the negotiations process. In doing so, the inspection perspective would drive an interest in the provision of more detailed information. For example, the negotiating parties would provide an inventory of all nuclear weapons holdings and their deployment status. It also would identify the locations, status, and operations of all treaty-relevant sites and facilities on the territory of parties to the agreement or under their jurisdiction and control and subject to declaration under the agreement. (Depending on the state of the negotiations, some of the information included below in the Baseline Declaration could be provided as part of an Initial Declaration made just prior to EIF.) In addition, three types of declarations and notifications are the basis of the verification regime, with their specific elements dependent on the provisions of the specific nuclear disarmament agreement in question.

1. **Baseline Declaration.** Provided immediately after EIF, it entails a comprehensive update to all the information already provided in the Initial Declaration and contains additional, more detailed information necessary to prepare for and conduct verification activities. The information contained in this declaration is typically identified within the specific provisions of the governing agreement.

   By way of example from the Basic Scenario, Ipindovia would be obligated to provide the following information: (1) the number and type of nuclear warheads (as well as observable features and UIDs of containers with nuclear warheads) currently in Ipindovia, their locations, and their status (deployed or non-deployed, in-storage, being or to be dismantled); (2) the number and type of all operational nuclear weapons bases, storage sites, and related nuclear facilities and facility or site design information for each of these locations and access restrictions; (3) the number of warheads at each base or facility; (4) identification and location of a nuclear warhead dismantlement center; and (5) locations of former nuclear facilities and their status (closed, converted, abandoned, eliminated).
2. **Periodic Declarations.** Irrespective of their state of deployment or storage, nuclear weapons may require movement for operational reasons, including maintenance, refurbishment, storage, or dismantlement. There also may be changes in the status of bases and other sites where nuclear weapons are deployed, stored, maintained, or dismantled (e.g., the construction or use of new buildings or structures or the shut-down of prior buildings or structures). Thus, the baseline information will continue to change. Accordingly, a Periodic Declaration updates the Baseline Declaration and provides the verification body and other parties with the most up-to-date and comprehensive information on a given day, capturing the cumulative set of changes that have occurred over a period of time (e.g., one year, six months, etc.) for treaty-accountable items. Such updates are essential to allow the

verification body to plan inspections and future resource allocation and requirements. They also contribute to transparency and confidence building.

Again, to use the Basic Scenario, one example of such updated information would be the dismantlement status of TAIs under the NWRT. The level of reductions achieved also would be provided in a Periodic Declaration, perhaps on an annual basis.

3. **Notifications (or Ad Hoc Declarations).** Notifications (or Ad Hoc Declarations) provide information about changes that affect the accuracy of baseline information (e.g., the movement of TAIs from one location to another location for deployment, maintenance, storage, or dismantlement). They also provide essential information that may trigger planning for and implementation of inspections under the agreement (e.g., plans to remove a nuclear warhead from its delivery system or from storage at an operational nuclear base and initialize it into the dismantlement process, movement of a TAI from one site to another, and plans for the dismantlement of one or more nuclear warheads). Which changes would require the parties to make Ad Hoc Declarations or Notifications and the details to be provided (e.g., planned movement, site information on a new location) would be set out in the disarmament agreement. Depending on the frequency of such planned changes, Ad Hoc Declarations or Notifications may be required very frequently (e.g., weekly), or could be far more relaxed (e.g., quarterly or biannually). Notifications and Ad Hoc Declarations also could be required as soon as specified breaches of chain of custody were detected by the host state (e.g., a broken seal on a container).

In addition to these basic types of declarations, at the beginning of each inspection, the inspection entity would be provided with updated *operational* information and details on the specific site being inspected. This information would include updates to previously supplied information on the number, characteristics, location, deployment status, and availability for verification of TAIs at that site.

Inspector Perspectives on Declarations: Implications for Defining Treaty Elements

As already discussed in the first part of this paper, Inspector perspectives would argue, in principle, for seeking to negotiate the most comprehensive and timely declarations possible and associated inspection rights for verification of those declarations. To illustrate this using the Basic Scenario, more detailed information about Ipindovia's nuclear arsenal; the detailed configurations of its nuclear deployment, storage, and refurbishment sites; and the configuration and operational practices of its dismantlement site all would support verification planning and implementation. This information also would add to the knowledge of Ipindovia's normal operational practices, thereby contributing to efforts to detect anomalies that could be indicators of non-compliance.

For the most part, moreover, providing comprehensive and timely information of the type set out in the discussion of declarations should be acceptable from the Host perspective. Doing so allows the Host to show that it is meeting its obligations and makes the verification process more effective, efficient, and less costly.

At the same time, there may be some Inspector requests related to the content of declarations that would raise issues for the Host and result in more difficult treaty negotiations. In the Basic Scenario, for example, Inspector perspectives would argue for including in Initial and Baseline Declarations information not only about former Ipindovian nuclear sites but also potential sites where TAIs may be present or where the capability to store undeclared nuclear warheads may exist. Doing so would serve the inspection objective of confirming the absence of undeclared nuclear warheads. Somewhat differently, the Inspector perspective would argue that as part of their Baseline Declaration Ipindovia should provide its detailed operational plans for future reductions, deployments, production, refurbishment, and dismantlement of their nuclear arsenals. Such information would help provide a more complete picture of Ipindovia's routine nuclear operations and make it easier to detect undeclared activities. Information also could be sought regarding the features of containers used by Ipindovia to transport and store nuclear weapons and the radiation characteristics of nuclear warheads to assist in their measurement as part of inspection activities. All these requests, however, could raise practical, operational, safety, and security issues for Ipindovia.

At least three other considerations will influence how these Inspector perspectives play out in negotiating the declaration's provisions of a disarmament agreement. First, as already noted, at least some of the parties negotiating any such disarmament agreement will be nuclear weapons -possessing countries. They will have to abide by any set of declaration provisions to which they agree. Thus, in the Basic Scenario, their interest in robust verification of other parties by the multilateral inspection body would need to be balanced against their interest as a potential host of inspections in protecting sensitive information and their interest in keeping the burdens of treaty implementation manageable.

Second, even among non–nuclear-weapons possessing countries participating in a multilateral nuclear disarmament negotiation, other obligations, like those under the Treaty on the Non-Proliferation of Nuclear Weapons to not acquire information related to developing nuclear weapons, could temper their approach. Their shared interest with nuclear-armed countries in ensuring the safety and security of nuclear weapons also would argue for not pressing too hard (e.g., with regard to seeking advance notice of nuclear warhead shipments or with access to certain parts of sites).[5]

[5] During the series of exercises conducted in Phase III to test verification of different steps in the 14-Step model, participants in the role of multilateral Inspectors acknowledged the need to temper declarations and inspections

Finally, parties will want controls on the information acquired by the inspection entity during the verification process in declarations and through inspections because it is circulated among a wider group. One approach would rely on the principle of "positive security control," as agreed to the satisfaction of the parties. That principle means that the information is only distributed within a known environment where a "need to know" criteria defines who can access such information, but also extends to transmission methods, storage mediums, whether physical or electronic, and disposal. The details of how to treat the information contained in the different declarations would need to be negotiated as part of the verification protocol of a disarmament agreement.

Inspector Perspectives on Declarations: Implications for Implementing Declarations

Inspection planning will be essential. Taken together, the set of Initial, Baseline, Periodic, and Ad Hoc Declarations or Notifications will contain a large amount of information. The disarmament agreement is likely to provide for an extended period of inspections to confirm the information provided by the initial and Baseline Declarations. What to confirm, how, and in what sequence will prompt important questions. Moreover, given likely inspection quotas and limits on the duration of individual inspections, it will not be possible for Inspectors to confirm all of the information available to them from the ongoing process of Periodic Declarations and Ad Hoc Declarations/Notifications. Again, which declarations to confirm by way of inspections and how often the inspections are conducted would be an important decision for the inspecting entity. Moreover, assuming that declarations include some information about formerly declared sites and a quota for short-notice inspections of them, as well as an evidence-based "challenge inspection" process of non-declared sites, inspection planning would need to include a discussion of whether and how to use such inspections to increase the risk of detection of undeclared warheads. For making these and other choices inherent in inspection planning, it will be valuable to develop and use a systems approach.

More broadly, given the complexities involved and the amount of data to be provided as part of declarations, occasional good-faith lapses and delays should be expected. Such lapses could result from the fact implementation of any such nuclear disarmament agreement is likely to take many years. During those years, refurbishments of nuclear weapons and changes in the structure and composition of parties' nuclear forces and infrastructure are likely. Inspectors, like Hosts, have an interest, therefore, in building into the agreement a mechanism for resolving disputes over compliance with declarations provisions.

to take into account proliferation, safety, and security concerns (e.g., in accepting that notification of transport of nuclear warheads between Ipindovia sites would be provided only after the fact as well as limits on the uses of inspection technologies).

Finally, again given the amount of information provided in declarations, data management will be an important implementation challenge. In the example of the Basic Scenario, the multilateral inspection body would need an effective and secure database for storing and accessing that information as part of inspection planning and evaluation. Data management will also be essential for making the findings and information from previous inspections available for planning and execution of the ongoing inspections process.

About IPNDV the International Partnership for Nuclear Disarmament Verification

The International Partnership for Nuclear Disarmament Verification (IPNDV), through a unique public-private partnership between the U.S. Department of State and the Nuclear Threat Initiative, brings together more than 25 countries with and without nuclear weapons. In this ongoing initiative, the partners are identifying challenges associated with nuclear disarmament verification, and developing potential procedures and technologies to address those challenges. Learn more at www.ipndv.org.