



# International Partnership for Nuclear Disarmament Verification – Phase II

FINAL PROGRAM OF WORK

*December 6, 2017*

The International Partnership for Nuclear Disarmament Verification (IPNDV) will begin its Phase II by undertaking a two-year program of work to deepen our understanding of and develop effective and practical verification options to support future nuclear disarmament. During the course of Phase II, the Partnership will facilitate interaction with the United Nations Group of Governmental Experts on Nuclear Disarmament Verification (U.N. GGE), and will ensure that the outputs from this Phase are finalized and can be shared at the 2020 Nuclear Non-Proliferation Treaty Review Conference (NPT RevCon).

## **OBJECTIVES**

The overarching objectives for Phase II are to:

- 1) Develop and implement a strategy highlighting key engagement opportunities, messaging and outreach activities, including educational opportunities, for a variety of audiences including technical, academic and policy communities.
- 2) Broaden the work of IPNDV to consider wider aspects of nuclear disarmament verification;
- 3) Deepen the work of IPNDV on specific elements of verification, including to ensure that solutions can provide the required confidence levels as well as meet safety, security and non-proliferation obligations;
- 4) Develop practical and effective monitoring and verification options, including measurement technologies; and
- 5) Demonstrate the work of IPNDV through practical activities like exercises and technology demonstrations.

The work undertaken in Phase II should be built on a sound technical basis, enabling logical and scientific development of verification tools and technologies. This should not be taken as any indication of our preferred treaty or political arrangement for future disarmament. The work of the Partnership does not attempt to foreshadow a specific disarmament agreement or agreements. Rather it aims to ensure that whatever agreements may be negotiated, a range of verification processes, procedures, and tools are available.

### ***BASIC STRUCTURE***

The Partnership will continue as a sustained, multi-year effort. The work of the Partnership will be technical in nature, and led and performed by technical experts. Working groups will take on specific projects, tasks, and collaborative research and development activities. In addition, the Partnership will convene a plenary meeting at the end of each year, comprised of senior officials and technical experts who will monitor the progress of the working groups, discuss common themes or challenges, and be briefed on other relevant research that may inform the work of the Partnership. The plenaries will also provide a platform for political and policy support as well as sustained dialogue. A notional timeline for 2018-2020 activities is included below.

### ***WORKING GROUPS***

The Partnership will establish three new working groups for its second phase of work. The working groups will focus on:

1. Working Group 4 – Verification of Nuclear Weapon Declarations: focusing on how to verify weapon number declarations;
2. Working Group 5– Verification of Reductions: focusing on how to verify the reduction and elimination of agreed declared numbers of weapons; and
3. Working Group 6 – Technologies for Verification: focusing on the study and progressing of key technologies, many of them identified in Phase I.

Each working group will be led by a pair of co-chairs. The co-chairs should identify:

- Key Questions and Objectives;
- Expected Output; and
- Notional Timeline.

In order to ensure better working practices and flexibility between groups, the working groups will conduct a review of their work after one year. As a part of that review, the groups will share initial findings, and fine tune their membership, remit, directions, and deliverables to ensure maximum progress and efficiency.

The Secretariat of the Partnership, composed of members from the U.S. Department of State and from the Nuclear Threat Initiative, will support the working groups and their co-chairs as needed. Given the overlap between subject areas, the Secretariat will also assist the co-chairs and working groups to coordinate and sequence their activities, and identify common themes to discuss during future plenary meetings. The working groups will conduct their work through a variety of means, including conference calls, email communications, and in-person meetings. Not all Partners are expected to participate in every working group. Like the Partnership itself, participation and membership is voluntary, at all stages, and may expand as efforts move forward.

All groups are encouraged to use innovative ways to progress their work. This could include tabletop exercises, simulations, discussion groups, practical work, use of outside expertise or other methods.

A basic overview of each working group is presented below. These descriptions outline a series of questions and possible areas of focus. Specific projects will be established as the working groups and the Partnership evolve.

#### **Working Group 4 - Verification of Nuclear Weapon Declarations**

The main focus will be on how to verify a declaration of a number of nuclear weapons in a State. The role of other declarations, documentation, and information from a State related to nuclear disarmament may also be considered. The role of notifications and exchange of information related to agreed categories of numbers will also be examined. Possible questions the group will need to consider are: How to confirm items are as declared under an agreement? How to verify numbers and status when access to all systems may not be timely (e.g. at sea deployment)? How to keep track of numbers over many years, including when systems are refurbished and replaced (as well as eliminated and the overall number declared reduces)? What types of declarations, documentation, and supporting information should be pursued as part of inspection and monitoring under a nuclear disarmament agreement? Consideration should be given to different categories of nuclear weapons, including deployed or non-deployed systems, and how to differentiate them.

The central issues to resolve are: the verification of the correctness of any declaration made by a State regarding weapon numbers; and how to ensure the completeness of such a declaration

within possible Treaty scenarios. The development of specific verification options for different locations and scenarios will be the goal of the group.

### **Working Group 5 - Verification of Reductions**

The focus will be on how to verify the reduction of a declared number of nuclear weapons in a State. Consideration should be given to how to monitor the dismantlement of a significant number of weapons from deployment to disposition. It will be important to consider the process as a whole to identify the key verification activities required to build confidence in the overall elimination process, as well as to examine selected steps in greater detail. The group could examine how adequate assurance of dismantlement could be derived from the results of various monitoring activities, as well as supporting declarations and information, over a long period of time. The goal of the group is to develop monitoring and verification approaches, with consideration to the potential trade-off between practicality, intrusiveness, proliferation risk, effectiveness, and necessity.

### **Working Group 6 - Technologies for Verification**

This group's focus will be to identify and advance a limited number of key verification technologies. These should be based on findings from the three working groups in Phase I, where gaps were identified in the ability to detect and monitor a nuclear explosive device and its key components. Consideration should be given to the development of information barriers to protect proliferation sensitive information. Further aspects of how such technologies can be trusted by both parties (authentication) should be considered together with WGs 4 and 5, including how to meet safety and security requirements within nuclear and explosive facilities (certification). Possible development of nuclear weapon templates, including their feasibility and their uses, also should be explored in greater depth.

The group should look to undertake practical activities including developments and demonstrations where practical. Such activities would be a visible output from IPNDV, and enable outreach and educational experiences.

### ***NOTIONAL 2018-2020 TIMELINE***

The Phase II kickoff plenary meeting took place in November 2017 in Buenos Aires, Argentina.

#### **March 2018:**

- Joint Working Group Meeting – Stockholm, Sweden

#### **June/July 2018:**

- Joint Working Group Meeting

**November/ December 2018:**

- Sixth Plenary Meeting (including sharing initial findings, directions, and deciding on the appropriate Phase II outputs to ensure maximum progress and efficiency).

**February/March 2019:**

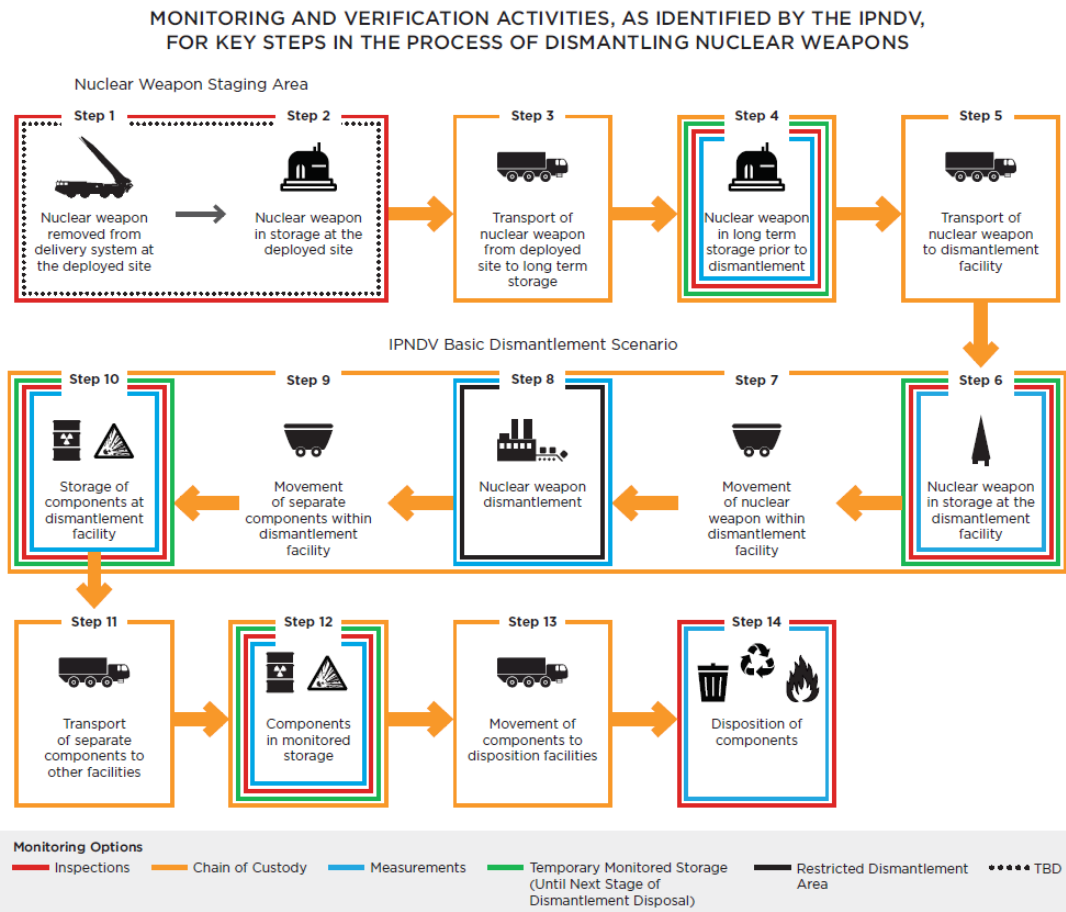
- Joint Working Group Meeting

**June/July 2019:**

- Joint Working Group Meeting

**November/ December 2019:**

- Seventh Plenary Meeting



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