

Introduction to Verified
Dismantlement of Nuclear
Programs: Defining the approach

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Goals of Cooperative Dismantlement

- The state voluntarily dismantles a nuclear program in cooperation with a verification organization in a manner that results in high confidence that the program no longer exists.
- In the model ISIS proposes, the state conducts the actual dismantlement, and the verification organization verifies that the dismantlement has occurred.

Possibilities for the Verification Organization

- Depending on the exact disarmament tasks, the verification organization will require different expertise.
- Which organization fulfills this mission will also depend on negotiations.
- Different options include the IAEA, a specific organization created by the United States or other acknowledged nuclear weapon states (NWS), a hybrid of the IAEA and member states (“IAEA Plus”), or a bilateral or regional inspection agency.

Verifiable Dismantlement

- Verification can be applied to an entire nuclear program, such as the case of South Africa, or a single program, such as an enrichment program.
- If a single program is selected for verified dismantlement, the level of confidence about the absence of such activities is less than if all nuclear programs are dismantled, and the whole state is subject to verification.
- Nonetheless, sufficient confidence can be obtained that a single program has been dismantled.

Prerequisites for Effective Verification

- The state believes that verified dismantlement is in its vital interests.
- The verification organization is technically competent, professional, and politically fair.
- The process is supported politically by all concerned parties.
- The procedures or ground-rules of verified dismantlement are established in advance to the extent practicable, and both parties commit to solve future problems as they develop.

When to Dismantle

- Dismantlement can occur either prior to the onset of verification activities or concurrent with verification.
- Concurrent dismantlement and verification is in general the preferred option because it can result in greater confidence.
- Accomplishing adequate verification after the dismantlement of a program is possible, but it is more difficult and can take longer.

Critical State Commitments to the Verification Organization

- Transparency;
- Access “anywhere, anytime, and any place within reason.” This is the same commitment as South Africa gave to the IAEA when it verifiably dismantled its nuclear weapons program;
- Detailed declarations and other information;
- Access to documents, including program documents, procurement data, or personnel records;

Critical State Commitments to the Verification Organization (cont.)

- Allow interviews with program staff and officials;
- Permit environmental sampling at declared sites and elsewhere; and
- In general, the verification organization will need more extensive rights than established under the IAEA Model Protocol. But because the dismantlement process occurs over a finite period of time, these extraordinary rights could be temporary as well.

Critical Commitments of the Verification Organization

- The verification organization must possess extensive knowledge about the type of program to be dismantled.
- The verification organization must have the tools to ensure with a high degree of confidence that the program is dismantled, especially the ability to establish the completeness of any declaration.
- The organization must act in a professional and fair manner and protect sensitive information.

Ensuring Irreversibility of Dismantlement

- Irreversibility is an essential part of the verified dismantlement of a nuclear program.
- To achieve irreversibility, the state will need to destroy certain facilities, equipment, and documents.
- On-going monitoring of certain non-nuclear activities or dual-use items may be necessary.

Conversion of Parts of the Program to Other Purposes

- Nuclear programs often involve equipment and skills that can be converted to non-proscribed activities.
- Developing a viable conversion program may be part of the dismantlement program.
- The goal should be to create economically viable alternatives or to enable program personnel to transfer gradually to other allowed activities.
- Parties should explore opportunities for joint ventures.

On-Going Monitoring

- On-going monitoring of certain non-nuclear activities will likely be necessary.
- Nuclear materials will require on-going monitoring.
- The verification organization conducting the dismantlement is unlikely to be the best organization to conduct on-going monitoring.
- The IAEA is in general the best organization to conduct on-going monitoring of nuclear and non-nuclear activities or facilities.

Creating a Dismantlement Program

- Dismantlement will happen only with the agreement of the state.
- Dismantlement will likely be part of a larger agreement involving the state, other states, or international organizations.
- These negotiations should focus on creating the basic responsibilities, rules, and procedures for the dismantlement process for both the state and the verification organization.

Funding a Dismantlement Program

- The negotiations to create a dismantlement program should establish funding mechanisms for dismantlement, verification, on-going monitoring, and conversion activities.
- Methods to obtain additional funding should also be established during the negotiations.

Verification Organization: Size and Resources

- The resources and number of personnel required for a specific verification organization will vary.
- Core effort is expected to require 5-10 specialists and a budget of several million dollars a year.
- The dismantlement of a gas centrifuge or nuclear weaponization program can be accomplished on order of one year, if the state cooperates fully.
- The entire process of conversion and building confidence about the lack of undeclared activities would take at least one more year.

State Support to the Verification Organization

- States will need to support the verification organization, similar to support offered the IAEA safeguards department.
- Support should include analysis of environmental samples and the provision of “third party” information.

Conversion Funding

- Conversion costs could easily exceed tens of millions of dollars.
- Although this activity requires the participation of the verification organization, specific conversion activities should be funded by other parties.