



**COMPLETE, VERIFIABLE, AND  
IRREVERSIBLE DISMANTLEMENT OF  
NORTH KOREAN NUCLEAR PROGRAM  
OR  
COOPERATIVE, VERIFIABLE, AND  
IRREVERSIBLE DEMILITARIZATION?**

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There have been problems promoting the historic summit between the United States and North Korea. US National Security Adviser John Bolton insisted on the “Libya model” in which a security guarantee, diplomatic recognition, lifting sanctions, and economic support would follow dismantlement of North Korea’s nuclear program. North Korea focused on the consequences of the Libya model – regime change – and insisted that the US demand for unilateral denuclearization was not acceptable. The two sides were able to agree to a summit only after [President Trump clarified](#) that he does not seek regime change in North Korea and North Korea showed a willingness to consider the “[Trump Formula](#).”

However, as [Trump noted](#), a single summit might not be enough to create a roadmap for the long-lasting US insistence on comprehensive, verifiable, and irreversible dismantlement (CVID) of North Korea’s nuclear program. In 2005, North Korea agreed to abandon its nuclear weapons and existing nuclear programs at the Six-Party Talks, but the agreement fell apart when the six governments could not agree on how North Korea’s denuclearization pledge would be verified. Likewise, the focal point for the US-North Korea summit is how complete and irreversible dismantlement (CID) can be verified. This article briefly explores what CID means in the current context, identifies six elements necessary for verification, and offers some recommendations.

### *Current status of North Korea’s nuclear program*

In the first Korean nuclear crisis of 1993, North Korea only had limited nuclear-related facilities and fissile materials such as a 5MW research reactor, a reprocessing plant, and declared and undeclared separated plutonium. In 1999, the International Atomic Energy Agency (IAEA) [estimated](#) that it would take three to four years to verify North Korea’s initial declaration on those items. Since then, North Korea’s nuclear program has significantly expanded and has been militarized. It has achieved a uranium enrichment capability, conducted six nuclear tests, along with a fusion explosion, which create a “miniaturized,” and “standardized” nuclear “deterrent.”

The North Korean nuclear program can be divided into two parts: military-oriented systems including nuclear explosive devices, fissile materials – highly enriched uranium (HEU) and plutonium – and nuclear weapon testing sites; and nuclear-related infrastructure that includes the 5MW research reactor, suspended reactor construction, enrichment and reprocessing plants, and other nuclear materials such as low-enriched uranium (LEU) and natural uranium and fusion-capable materials.

It took [five years](#) for South Africa to dismantle its nuclear program. It took five years for Ukraine to transfer all nuclear weapons inherited from the former Soviet Union to Russia under the Nunn-Lugar program. Since the scale of the North Korean nuclear program is greater than that of South Africa, its CID process would require a much longer time to dismantle. Some argue that a reasonable timeframe for complete dismantlement of the North Korean nuclear program would be up to [15 years](#). Furthermore, there could be a few additional years to verify the absence of undeclared nuclear activities before North Korea could be considered in full compliance with the Nonproliferation Treaty (NPT) as a non-nuclear weapons state (NNWS.)

### *Complete, verifiable, and irreversible dismantlement*

Based on publicly available [information](#), CID is assumed to be the total elimination of North Korea’s nuclear program, including all militarized nuclear items and nuclear-related infrastructure. “Complete” defines the scope of denuclearization. It suggests not only that all declared components of the North Korean nuclear program should be dismantled but also that there should be no undeclared nuclear activities. “Irreversible” confirms that the endgame of denuclearization is not just

deactivation or a freeze but a state of elimination that must be continued. In the context of CID, complete denuclearization requires inspections of sites, locations, and information that were not declared by North Korea while irreversible denuclearization necessitates monitoring dismantled facilities and prevention of proliferation by North Korean entities after dismantlement.

CID would proceed with the following steps: North Korea's declaration of its nuclear program, including access to related information and the location of facilities; monitored dismantlement of declared elements; a verification process for ensuring the absence of undeclared activities; establishing measures for proliferation prevention such as redirecting North Korean scientists to civilian programs and creating a system for export controls; confirming North Korea's full compliance with the NPT.

CID is a goal that North Korea should be required to accept during the summit. Yet, a negotiation on how the CID process will be verified is not going to be easy. Bolton's version of CID insists on a front-loaded model that requires North Korea to transfer all its nuclear explosive devices and fissile materials to the US at the outset. North Korean acceptance of this approach would be the best scenario for the US. However, it is reasonable to believe that North Korea would reject the front-loaded model as political surrender. There is [a different view](#) that it is better to let North Korean scientists disassemble the nuclear explosive devices without transferring them to the US due to safety concerns. If the summit is to be successful, there needs to be an alternative verification plan.

### *Six factors to consider*

In devising an alternative plan, there are six factors to consider. First, the current South Korean administration does not want the US to take military action against North Korea. This means that Trump must get a clear and firm North Korean pledge of CVID on June 12.

Second, other states such as China and Russia support a phased and incremental approach to CVID rather than North Korea's political surrender. This indicates that an inclusive approach to CVID could acquire more political support from other regional actors.

Third, there is a deep distrust between the US and North Korea, which means that CVID should be conducted in

a cooperative manner based on mutual trust. The US may need to admit that it cannot get everything it wants while North Korea should take some bold action to show its sincerity about denuclearization.

Fourth, the IAEA is the entity that eventually makes a judgment on North Korea's compliance with the NPT. Cooperation with the IAEA from the early stage of the CID process could shorten the verification timeframe.

Fifth, the NPT stipulates that member states have an inalienable right to peaceful nuclear energy. When North Korea eventually returns to the NPT as a NNWS, a part of the current nuclear-related infrastructure might be useful for civilian purposes.

More importantly, it might not be possible to finish verification of the CID process within Trump's current presidential term. Therefore, he needs to prioritize elements of the North Korean nuclear program that must be verifiably and irreversibly dismantled by 2020.

### *Suggestion: cooperative, verifiable, and irreversible demilitarization*

President Trump needs to consider setting a feasible short-term goal that can be achieved within his first presidential term while still keeping CVID as an ultimate goal. Combining the six factors, an immediate goal could be "cooperative," verifiable, and irreversible "demilitarization." In this formulation, cooperative demilitarization means that the military elements of North Korea's nuclear program that pose an imminent and direct threat to the US should be prioritized for immediate removal while other components could be dismantled in cooperative and inclusive ways. Specifically, North Korean nuclear explosive devices designed for intercontinental and medium-range ballistic missiles should be transferred to the US to eliminate the threat to the US and Japan from the outset. Although [Dr. Sig Hecker](#) insists that it is safer to let North Korean scientists dismantle their nuclear explosive devices, the US has experience in providing financial and technical resources for nuclear weapons transfer under the Nunn-Lugar program.

As to the remaining nuclear devices, the [UK-Norway Initiative \(UKNI\)](#)-model could be considered. For example, a special organization led by the US and North Korea with possible extension to other regional actors and the IAEA could be established to create transparent and cooperative procedures for the dismantlement of

nuclear explosive devices. Those procedures would cover issues of safety for monitoring agents, managed access, and information barriers to sensitive North Korean military data. Nuclear explosive devices could be disassembled by North Korea. However, the fissile materials from those devices should be dispatched to the US or the IAEA for further analysis to restore the continuity of knowledge of the North Korean nuclear program that has been disrupted for decades. This approach could create a precedent for cooperative dismantlement of nuclear weapons between nuclear weapon states and NNWS.

While demilitarizing the North Korean nuclear program, applying [item-specific safeguards](#) to nuclear-related infrastructure could be considered an interim step between freeze and dismantlement/civilian-use. Unlike a comprehensive safeguards agreement (CSA) which is applied to all peaceful nuclear items within a NNWS, item-specific safeguards agreements are implemented by states not a party to the NPT such as India and Pakistan. Under this type of safeguards agreement, monitoring and verification measures are applied only to facilities that were specified in a bilateral agreement between a state and the IAEA. This approach can signal North Korean efforts to rejoin the international community. However, if North Korea terminates their safeguards agreement with the IAEA and expels inspectors, there might be no other choice less than a dire option taken by the US.

### ***Conclusion***

Ronald Reagan insisted on “Trust, but Verify” at the end of the Cold War, and persuaded his Soviet counterpart to terminate the military competition. Now, many insist on “Verify, then Trust.” Skepticism and caution prevent us from moving forward while excessive hope and confidence render our plan unattainable and infeasible. Some might consider cooperative, verifiable, and irreversible demilitarization unrealistic or insufficient but it is better to prepare an alternative plan, and a new approach to CVID could open a door for a more viable plan.

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