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# GENERAL ROADMAP AND WORK PLAN FOR NUCLEAR DIPLOMACY WITH NORTH KOREA



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**APRIL 10 2018**

## I. INTRODUCTION

In this essay, the authors posit two alternatives for a successful summit. These are “a comprehensive settlement of the nuclear issue or a suspension of nuclear and missile testing and fissile material production under two different conditions — that the North has yet to complete proof testing of a thermonuclear device and demonstrate a functioning reentry vehicle for an intermediate-

and long-range missile and that it has done so.”

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Banner image: cropped from ROK television image

## **II. NAPSPNET SPECIAL REPORT BY MORTON HALPERIN, PETER HAYES, THOMAS PICKERING, LEON SIGAL**

### **GENERAL ROADMAP AND WORK PLAN FOR NUCLEAR DIPLOMACY WITH NORTH KOREA**

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#### **SUMMARY**

This concept paper explores how successful nuclear diplomacy with North Korea might unfold given the past lessons from the negotiating history that may still apply today, and under “the new conditions” of North Korean nuclear armament. It also draws on a careful assessment of North Korean statements, both public and private, that arise in any plausible pathway to denuclearizing the Korean Peninsula.

The paper posits two alternatives: a comprehensive settlement of the nuclear issue or a suspension of nuclear and missile testing and fissile material production under two different conditions — that the North has yet to complete proof testing of a thermonuclear device and demonstrate a functioning reentry vehicle for an intermediate- and long-range missile and that it has done so.

It lays out in broad terms what might be required for a comprehensive settlement of the nuclear issue. It suggests the need to spend some time exploring such a settlement in negotiation. It recognizes that such a settlement may gain new impetus if a Trump-Kim summit takes place and leads to breakthroughs that advance elements of the three phases, especially phase 3 on nuclear weapons dismantlement.

Nonetheless, subject to the above caveat, given the pace of North Korea’s nuclear and missile development and the imminent danger that poses to allied security, achieving a sustained suspension of its nuclear and missile testing and fissile material production is the first priority at least in the short term, before a renewed North Korean commitment to abandon nuclear arming and a more comprehensive settlement.

The paper provides a more detail analysis of what a sustained suspension would entail and possible incentives and disincentives, starting with some modest steps to build confidence and improve the atmosphere for negotiation.

Attachment I specifies a separate, indicative Work Plan derived from this roadmap that contains more detailed reciprocal steps to be taken in tandem, including monitoring and verification. Each of these roughly fifty work-steps must be broken down into detailed implementation plans shared by all parties to the agreements, which will range from one (for unilateral measures) to six or more for major activities (such as energy assistance to the DPRK).

No matter which “make it or break it” core elements<sup>[1]</sup> are required by each side to be “front loaded” in a Summit agreement, this Roadmap and Work Plan accounts for the full complexity of a US-DPRK deal that might be struck at US-DPRK presidential summit, assuming it occurs.

Given the structure of the situation and the relative capabilities of the six parties who are the primary players in relation to the nuclear weapons issue in Korea, eventually, *all* these elements of a comprehensive security agreement must be addressed. Obviously, we prefer that the United States, the two Koreas, and the other parties who can contribute to a comprehensive settlement start that process now.

If not, then after another period of strategic drift and/or confrontation, we are confident that all the parties will return to this negotiating agenda for the simple reason that war is not a credible option in Korea.

## **1. BACKGROUND**

This essay outlines a roadmap for entering into nuclear diplomacy with North Korea, preliminary to a more detailed study for the negotiation. It consists of four parts:

- A review of lessons from previous nuclear diplomacy with North Korea that might be applicable for a roadmap under today’s new conditions
- An examination of the scope, effectiveness and possibility of a comprehensive settlement with North Korea
- An examination of the scope, effectiveness and possibility of sustaining a suspension of missile and nuclear testing, and fissile material production on two assumptions:
  - That the proof testing of a thermonuclear device and demonstrated reentry vehicles are not yet fully accomplished
  - That the North has completed development of a more sophisticated capability including a thermonuclear weapon and credible intercontinental ballistic missile
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- An examination of potential incentives and incentives for achieving such a suspension.

## **2. PREVIOUS NUCLEAR DIPLOMACY WITH NORTH KOREA**

The history of nuclear diplomacy with North Korea strongly suggests that fundamental to its security concerns is its political relationship with the United States, South Korea, and Japan. Specifically, it seeks an end to enmity, or what it calls “the hostile policy,” with all three of its interlocutors. Failure to grasp how central a role that steps to end enmity played in the North’s strategy led to the ultimate failure of denuclearization efforts in the past.

The critical issue for future negotiations is whether this aim still motivates Kim Jong Un. If it is, then the past has some bearing on the future and denuclearization remains possible.

The negotiating history is usually portrayed as one of abject failure because the North has cheated. That is at best a half truth. The negotiating record is mixed — much more successful than its detractors acknowledge and far better than the record of pressure of sanctions and isolation without negotiations.

Any successes were temporary because *neither* side has kept its commitments or sustained negotiations. Although there were good grounds for skepticism about North Korea's willingness to keep its word, the allies' failure to live up to their obligations, especially steps to end enmity, is more difficult to understand — especially when they were the first to renege, thereby failing to test the North's reliability. That was the case with the 1994 Agreed Framework and the 2005 Six-Party Joint Statement.

Rather than calling into question the value of negotiating at all, the history suggests that sustained negotiations did limit North Korean arming — and might still do so.

### **A Key Implication of the Negotiating History**

What did the Kim Il Sung and Kim Jong Il see in a deal? A fundamental change in the political relationship with its lifelong foes, the United States, South Korea, and Japan. Throughout the years of negotiations this aim, in one form or another, stands out.

Why? One reason was to hedge against China. During the Cold War, Kim Il Sung played China off against the Soviet Union to maintain freedom of maneuver. In 1988, anticipating the Soviet Union's collapse, he reached out to the United States, South Korea and Japan in order to avoid overdependence on China. As China has grown stronger, that need became more compelling.

A second reason was economic. In 2002, when Kim Jong Il moved to improve his economy, an end to enmity as envisioned in the Agreed Framework would have facilitated his redirecting resources from military production. Unlike his father, Kim Jong Un has pledged to improve his people's standard of living. He may also see in a deal a chance to redeem that pledge by reallocating manpower and investment from military production to civilian goods. That was the basis of his *byungjin* strategic line, promulgated on May 31, 2013 "on carrying out economic construction and building nuclear armed forces simultaneously *under the prevailing situation*," or as North Korean diplomats explain it, as long the "hostile policy" persists. In its May 8, 2016 decision, the Seventh Korean Workers Party Congress characterized *byungjin* as "simultaneously pushing forward the economy construction and the building of nuclear force and boost self-defensive nuclear force both in quality and quantity *as long as the imperialists persist in their nuclear threat and arbitrary practices*." The conditionality of *byungjin* implies it may eventually limit its missile and nuclear weapons production.

From Pyongyang's viewpoint, the aim of ending enmity was the basis of the 1994 Agreed Framework, committing Washington to "move toward full normalization of political and economic relations," or in other words, end enmity. That aim was also the essence of the September 2005 Six-Party Joint Statement in which Washington and Pyongyang pledged to "respect each other's sovereignty, exist peacefully together, and take steps to normalize their relations" as well as to "negotiate a permanent peace regime on the Korean Peninsula." For the allies, suspension of Pyongyang's nuclear and missile programs was the point of these agreements, which succeeded for years in shuttering the North's production of fissile material and stopping test-launches of longer-range missiles. Both agreements collapsed, however, when the allies did little to implement its commitment to improve the relationship and Pyongyang reneged on denuclearization.

Whether or not an end to enmity remains Kim Jong Un's aim will determine how far negotiations can go to achieving denuclearization. If it is, a willingness to reconcile with the DPRK, however gradually, may arguably outweigh the leverage derived from sanctions.

### **Some Other Lessons of Past Negotiations**

The following empirically observed negotiating practices may be salient to the proposed roadmap and serve here as a checklist that should be applied to an operational roadmap:

- Sustained negotiations can limit DPRK arming. Explanations that contend it has been motivated by a determined quest for nuclear weapons ignore its self-restraint in the pace and scope of its weapons acquisition at various periods in the past.
- At times, North Korea has slowed or halted its pace of nuclear development; at other times, especially recently, it has accelerated that pace. The extent to which its pace was driven internally or responsive to external interactions is uncertain, but negotiation may help demonstrate the degree to which that pace is contingent on sustained engagement.
- It is an open question whether the United States remains a desirable security partner for the DPRK, given the negotiating history as viewed from Pyongyang and uncertainties of US global and regional reliability under current circumstances. Consequently, US and great power security guarantees have limited credibility to the DPRK, but even then, only if they are multilateral.
- "Commitment for commitment, action for action," is the principle enshrined in the September 2005 six-party joint statement. To test North Korea willingness to restrain arming, it is essential that the allies keep their commitments.
- Much about the North's policy process and internal tradeoffs remains unknown, but the thousands of hours of diplomatic engagement and high-level meetings with Kim Il Sung and Kim Jong Il have yielded important insights, including important indications that their calculus was susceptible to external influence. That record suggests the potential for negotiation to reveal continuities and discontinuities under Kim Jong Un and the degree to which he, too, may be open to the possibility of having outsiders shape his calculus before he makes critical decisions.
- In past negotiations, humanitarian, economic, and energy assistance was an important component of the North's demands and subsequent agreements. Whether the *byungjin* strategy is amenable to such provision is unknown but worth probing in negotiation.
- The DPRK has repeatedly demonstrated by its actions that it will not yield to pressure — whether from the United States alone or in concert with China. By contrast, moves to ease US hostility have been effective, most clearly after the United States' unilateral withdrawal of nuclear weapons in 1991, but also at a much lower scale, by the MIA Joint Recovery Team presence in the DPRK for many years.[\[2\]](#)
- Left to its own devices, the North will challenge redlines, make outrageous threats, conduct provocative attacks, and not back off.

### **3. ALTERNATIVE ROADMAPS TO DENUCLEARIZATION**

Given the history of relatively comprehensive agreements that led to temporary suspensions of the North's nuclear and missile programs, only to fall apart, the question is how best to proceed "under the new conditions" of North Korean nuclear armament and the emergence of new leaders in the United States, China, and the two Koreas.

#### **A Fundamental Choice**

This question boils down to a choice: Should the parties engage in a time-consuming negotiation for a comprehensive settlement at the outset. This could be done by exploring shared visions of possible end-states that prefigure what would need to be done to realize such a vision before starting to communicate in ways that reduce tension and enable the parties to rebuild some basic trust needed before they can cooperate meaningfully.

Or should they proceed more cautiously, step-by-step, starting with a sustained suspension of nuclear warhead and missile testing and possibly fissile material production and deployment of intermediate- and longer-range missiles, followed by dismantlement of the North's facilities for making nuclear weapons and missiles, and culminating later — if ever — in the elimination of its weapons.

The pending summit between President Trump and Kim Jong Un makes that question an urgent one. The Trump administration seems determined to put complete denuclearization on the negotiating table from the start, which implies the need for a comprehensive settlement. The North Korean position, according to the South Korean envoys who met with Kim Jong Un, is that it is prepared to discuss “denuclearization issues” and it has “no reason for them to possess nuclear weapons as long as military threats to the North are eliminated and the regime’s security is guaranteed” but it is not clear whether it is prepared to recommit to abandon all nuclear weapons and programs for now. It is self-evident that something in between is what is required to enable the six parties to resume realistic dialogue in which the vital interests of all parties are respected at the outset, but the commitments sought and made in the course of a dialogue reflect the existing state of distrust.

Leaders tend to discuss principles at summit meetings and leave the details to be worked out by professional diplomats. One set of principles would embody those in the first ever US-DPRK joint statement of 1993 and the joint communique of 2000, a commitment to reciprocity along the lines of “All subjects are on the table, each sides can raise whatever subjects they wish, and each side is obliged to address or respond to what the other raises” and “Commitment for commitment, actions for actions.” Yet that approach may not satisfy Kim, especially if Trump wants some commitment, however conditional, on denuclearization or an extension of the temporary suspension to fissile material production. If so, a declaration containing the six elements of a comprehensive settlement (listed below) might be tabled as a starting point and some elements of nuclear weapons dismantlement might be advanced from phase 3 to phase 1.

That said, the pace of nuclear and missile efforts in the North and urgency of curbing them suggest that the most that can be attempted is a step-by-step approach starting with confidence-building measures to improve the atmosphere for negotiation and followed by a temporary suspension of testing and/or fissile material production. Nonetheless, as a starting point for negotiation it is necessary to sketch out and explore at the outset a comprehensive settlement as an ultimate end point.

### **A Comprehensive Settlement**

What would a comprehensive settlement look like? On the model of the September 2005 Six-Party Joint Statement, it has six inter-locking essential elements:

1. Set up a Six Party Northeast Asia Security Council.
2. Gradually relax sanctions over time.
3. Declare non-hostility.
4. Begin a peace process to replace the Korean Armistice with a peace treaty, or establish what the September 2005 Joint Statement refers to as a “peace regime.”

5. Provide humanitarian assistance to the DPRK and economic and energy aid, especially aid which benefits the whole region by completing many types of energy, telecom, logistics, transport, mobility, trading, financial networks that link the land-bridge from Eurasia to the ROK and Japan via North Korea.
6. Establish a nuclear weapons free-zone (NWFZ) in which to re-establish DPRK's non-nuclear commitment in a legally binding manner that provides a framework to dismantle its nuclear facilities and weapons and to manage the nuclear threat in the region in a manner that treats all parties, including North Korea, on an equal basis.

This comprehensive approach envisions three distinct phases, albeit partly overlapping in implementation:

### ***Phase 1***

Initial agreement is reached that:

1. North Korea suspends all nuclear and missile tests and fissile material production, including enrichment,<sup>[3]</sup> either simultaneously or in a defined sequence and timeline, allowing the IAEA and possibly US inspectors to monitor and verify these steps;
2. In return for a sustained suspension of testing, the United States and South Korea will scale back joint exercises, especially deployment of nuclear assets. In return for freeze on all fissile material production and deployment of medium- and longer-range missiles, the allies will lift the Trading with the Enemy Act for a third time and commence rapid, sensible energy assistance to the DPRK for small-scale cooperation on power generation, provide some humanitarian food and agricultural technical aid, and medical assistance, and commit to begin a peace process during phase two.

Even if Phase 1 can be done in a series of reciprocal steps over a relatively short time frame (roughly three to six months), the difficult bargaining is only beginning.

### ***Phase 2***

Six Party Talks or other format for talks resume on the on basis that (1) there are no preconditions; (2) all issues can be considered; and (3) each phase can be implemented as talks proceed with nothing agreed in each phase until everything in the phase is agreed. North Korea declares all nuclear production facilities, include enrichment, and begins disablement and dismantlement of these facilities, under monitoring by IAEA and possibly US inspectors.

In return, the United States, China, and the two Koreas commence a peace process to bring about a Northeast Asia "peace regime." The Korea focus of this regime would be a non-hostility declaration and military confidence-building measures culminating in the replacement of the Korean Armistice with a peace treaty acceptable to all parties. At the same time, the six parties would establish a regional security structure including a regional Security Council, and would take initial steps to create a Northeast Asian security and economic community and cooperative security measures on a range of shared security concerns.

The United States and South Korea would adjust their unilateral sanctions in an incremental and calibrated manner to allow for phased resumption of trade and investment with North Korea, including revival of the Kaesong industrial zone by South Korea.

The United States and the other four parties may commence confidence-building steps to cooperate with the DPRK on nuclear and energy security. Such steps might include implementation after preparation of the DPRK's 1540 nuclear security obligations, examination of nuclear safety requirements for fuel cycle operations in the DPRK, and/or initial joint work with DPRK on grid rehabilitation in the context of regional grid integration and tie lines with the ROK, Russia, and China.

One issue to be resolved early in talks would be whether missile production facilities will also be designated for dismantlement and controlled by the agreement in defined ways that may include facilities in both Koreas.

South Korea will also initiate discussions with the other five on a Northeast Asia Peace Regime.

Defining what Phase 2 would cover can be done in a few months, but implementation of measures required of the DPRK side will take several years to complete in verified manner. Initial nuclear safety and security measures, and early energy cooperation steps, may be undertaken in six to eighteen months.

Likewise, a peace and regional security process can begin in Phase 2, but completion of key elements of each of these interrelated elements will also take years. North Korea will want to see the result tested over multiple administrations representing both political parties in the United States and South Korea to see if a peace regime is durable before they give up their weapons and weapons-usable fissile materials.

### ***Phase 3***

Declaration and implementation of a legally binding Nuclear Weapons Free Zone (NWFZ) by the other five parties for eventual acceptance and entry by the DPRK in lockstep with agreed timelines and specific actions to eliminate nuclear weapons by the DPRK; and commitment to come into full non-nuclear compliance over an agreed timeline, in return for lifting of multilateral and unilateral sanctions, large-scale energy-economic assistance package as part of a regional development strategy, successful experience with no US hostile intent and conclusion of a peace treaty, and a calibrated nuclear negative security assurance to the North from the Nuclear Weapons States.

Such a treaty is a standard UN multilateral convention that both Koreas have had no problem signing in the past and would not confront the constitutional issue that otherwise makes the two Koreas loathe to sign treaties with each other that might affect their respective claims to exercise sovereignty over the entire Korean peninsula. Moreover, the other four parties may be skeptical as to the durability of a Korea-only denuclearization agreement and prefer the multilateral rather than unilateral guarantees provided by the Nuclear Weapons States to an NPT-compatible nuclear weapons-free zone treaty. A UN NWFZ with the two Koreas as founding non-nuclear weapons states would be made accessible to other non-nuclear weapons states in the region such as Japan or Mongolia. They could choose to join at the outset; or at a later date.

Phase 3 may take ten years to complete, maybe longer, during which incremental nuclear weapons disarmament may be undertaken by the North and verified by the other parties to the NWFZ as part of a regional inspectorate, accompanied by effective implementation of peaceful relations by the five parties. Phase 3 would enable a six-party presidential summit to take place within two to three years from now.

Again, a comprehensive settlement may be more than the negotiating traffic can bear under current conditions. That suggests a step-by-step approach that focuses on the more urgent steps.



Nonetheless, if the Trump-Kim summit re-orders the sequencing and priorities, the steps outlined below remain the substantive actions to be implemented in a logical manner that recognizes many interdependencies among them and among the different implementing parties.

With these considerations in mind, an examination of the operational details of a comprehensive settlement will be deferred to a subsequent paper. Instead, the focus here will be on the initial steps leading to a sustained suspension of North Korean arming.

#### **4. THE ROADMAP BEGINS WITH SUSTAINED SUSPENSION OF NORTH KOREAN NUCLEAR ARMING**

History suggests that halting the DPRK's acquisition of additional nuclear and missile capability is a worthwhile goal and may be achievable. Leaving aside the ultimate issue of whether North Korea will ever give up its small but growing nuclear arsenal, limiting it to its current capability is an urgent and worthwhile goal in the near term. It addresses the imminent danger that an unbounded weapons program in North Korea poses to allied and global security. History also demonstrates that diplomatic engagement enabled the United States and its partners to shape the DPRK's decisions at various junctures, often slowing or halting and sometimes reversing its acquisition of nuclear weapons capabilities.

Some of the critical conditions that held in the past no longer do. Leaders have changed along with significant organizational practices, making it harder to replicate past patterns of engagement and joint outcomes. Most important of all, North Korea's nuclear weapons are declared and demonstrated and some capability to deliver a nuclear attack beyond the Korean peninsula now exists, changing the calculus of all the powers, and especially the United States. Given this new strategic reality and the uncertainty created by new leaderships, past precedents may have limited applicability and issues of deterrence and the impact of diplomatic engagement on deterrence among the four nuclear-armed states parties to the Korean conflict now directly enter the picture. These factors will affect the roadmap, for instance, by increasing the requirement for stringent monitoring that each of the parties — especially the United States — may demand of the others, with respect to each other's nuclear weapons capabilities.

Consequently, a roadmap to denuclearization today, as distinct from the one envisioned in September 2005, must increase substantially the emphasis on confidence-building measures that help ensure that a nuclear attack is not underway and to clarify the intentions and capabilities of the nuclear-armed states to assure to the extent possible that no such attack is imminent. This means front-loading comprehensive security measures that were treated in the Six Parties Talks context.

Yet the initial task is to devise an on-ramp to get to negotiation in the first place.

##### **Improving the Atmosphere for Negotiation.**

Mutual suspicion between the sides has seldom been higher since the nineteen eighties. The resulting potential instability makes it imperative to improve the atmosphere for negotiation by taking modest steps to boost mutual confidence. The joint North-South hockey team at the Pyeongchang Winter Olympics serves as a model.

A number of such confidence-building measures between the United States and the DPRK are available, such as resuming the search for MIA remains from the Korean war (which serves as an early warning system for the DPRK while US boots are on the ground in the DPRK), the repatriation of detained Americans, token humanitarian aid to the DPRK by the US government through the World Food Program, a cultural exchange perhaps more modest than a visit by the New York

Philharmonic to Pyongyang. Such steps could facilitate kick-starting negotiation.

### **Kick-starting Phase I: Sustained Mutual Suspension**

North Korea has already likely tested boosted fission nuclear device, and the latest may well have been a high yield-to-weight ratio thermonuclear or hydrogen warhead. However, it certainly needs more tests to validate their performance. It has test-launched mobile intermediate-range missiles and ICBMs to deliver them but has yet to perfect a reentry vehicle or longer-range solid-fuel missiles. It is generating plutonium and highly enriched uranium at a rate of five or six bombs' worth per year. Stopping those developments would be beneficial to allied security and could open the way to more far-reaching arrangements.

For this reason, achieving a sustained suspension of nuclear arming is the first objective for negotiation. Without achieving that, the six parties will never get to the negotiating table to try to draw up a comprehensive roadmap for denuclearization.

This rest of this paper therefore examines the possibility, scope, and effectiveness of a sustained suspension under current conditions. It will then examine what a sustained suspension might look like should the North complete proof testing of a thermonuclear device and demonstrates a functioning reentry vehicle for an intermediate- and long-range missile.

### **Suspension under Current Conditions**

Pyongyang has said it is willing to suspend nuclear and missile while "dialogue continues" and may be willing to commit to a sustained suspension of its nuclear and missile programs if its concerns are satisfied.

That was the thrust of its January 9, 2015, offer of "temporarily suspending the nuclear test over which the US is concerned" if Washington "temporarily suspends joint military exercises in South Korea and its vicinity this year." It was intended to show that it could address the nuclear issue on the table if the United States was ready to respond in kind, but like most opening bids, it was unacceptable as formulated. Instead of probing it further, Washington rejected it out of hand — within hours — and publicly denounced it as an "implicit threat."

Unofficial contacts shortly thereafter indicated that Pyongyang might be prepared to suspend not only nuclear testing but also missile and satellite launches and fissile-material production. In return, it was willing to accept a scaling back of joint exercises, rather than their cancellation. This underscored the need for reciprocal steps to improve both sides' security. Those contacts might have opened the way to talks at that time, but the initiative was squelched in Washington. Instead, US officials, with the zealous backing of Seoul, continued to insist Pyongyang had to take unilateral steps to demonstrate its commitment to denuclearizing and ruled out reciprocity by Washington at Seoul's behest. Their stance was based on the flawed premise that the North alone had failed to live up to past agreements. As Daniel Russel, assistant secretary of state for East Asian and Pacific Affairs, put it on February 4, "North Korea does not have the right to bargain, to trade or ask for a pay-off in return for abiding by international law."

Subsequent actions and statements by the DPRK suggest what the scope of a sustained suspension deal might be and what elements of past agreements may or may not be attainable now.

### **Missile and Nuclear Testing**

Ever since fireworks display of July 4, 2006 during which it conducted seven launches including the Taepodong-2, North Korea has been on a strategic path to demonstrate that it has an ICBM and a

thermonuclear weapon. Kim Jong Un has now hinted that the nuclear and missile testing has achieved his objective — even though experts doubt that the North has a proven thermonuclear warhead or reentry vehicle. In “guiding” the launch of the Hwasung-12 intermediate-range missile on September 16, 2017, Kim said, “We should clearly show the great-power chauvinists how our state attain the goal of completing its nuclear force despite their limitless sanctions and blockade, he said, underlining the need to finalize the work with mobilization of all-state efforts as it *nearly reached the terminal.*”

That statement raised the possibility of a test suspension once the terminal was reached. After the second successful test-launch of the Hwasong-14 ICBM, Kim declared that “the test-fire reconfirmed the reliability of ICBM system, *demonstrated the capability* of making surprise launch of ICBM in any region and place any time, and clearly proved that the whole US mainland is in the firing range of the DPRK missiles.” After the successful launch of the Hwasong-15 ICBM on November 29, 2017, Kim was more categorical: “He said that the day was a significant day when *the historic cause of completing the state nuclear force, the cause of building a rocket power was realized.*” In his New Year’s speech on January 1, 2018, he hinted that testing was now accomplished but that full-scale production would continue: “The nuclear weapons research sector and the rocket industry should *mass-produce nuclear warheads and ballistic missiles*, the power and reliability of which have *already been proved to the full*, to give a spur to the efforts for deploying them for action.” That may open the way to a suspension of testing, but it cast doubt on near-term prospects for a freeze on fissile material production or limiting the number of weapons.

Verification of a nuclear and missile test suspension could be accomplished by national technical means. In the past, the North has begun preparations at test sites for resuming testing to put pressure on negotiators. Demanding that no such preparations be undertaken at test sites may have limited utility, especially for missiles, some of which are mobile and can be launched from remote sites.

### **Satellite Launches**

As it did in the Leap Day accord, the North insists both publicly and privately that it has a sovereign right to launch satellites — despite U.N. Security Council resolutions barring such launches. In informal talks North Korean diplomats had earlier accepted the possibility of not exercising that “right,” suspending satellite launches along with missile tests, but they backed away from that position in more recent meetings.

In asserting that it intends to exercise that “right,” DPRK diplomats note that it is possible to distinguish satellite launches from missile test-launches. That is correct: a space launch vehicle is not the same thing as a ballistic missile. Whether the North is willing to facilitate monitoring of that distinction with reconnaissance satellites and other national technical means is not clear because it has never been thoroughly probed.

### **Fissile Material Production**

Prior agreements halted the production of fissile material at Yongbyon and allowed monitoring by IAEA inspectors. They also halted construction of new reactors, such as the light-water reactor now nearing completion, but received commitments in both 1994 and 2005 to replacement reactors. Amid continuing disputes over a 1992 safeguards agreement with the IAEA, IAEA inspectors regularly monitored the 5 MW (e) reactor, the fuel fabrication plant, and the reprocessing facilities by installing seals that enabled them to detect tampering, surveillance by video cameras, and short-notice inspections allowing access to particular equipment and areas in those facilities that could not be sealed and to ensure the operation of cameras. Glove swipes taken by inspectors could date when

reprocessing took place, but not how much plutonium was extracted. In December 2002 after allied energy aid was suspended, the DPRK removed the seals and cameras, barred the inspectors, and reprocessed the spent fuel frozen since 1994 under the Agreed Framework. Similarly, after inspections had resumed in 2007, a dispute over verification in 2008 prompted South Korea to halt delivery of promised energy aid to the DPRK and the North, in turn, demanded that IAEA inspectors remove seals and surveillance cameras from the reprocessing facility, then denied further access, and resumed reprocessing.

To expedite a shutdown, the reactor and reprocessing sites at Yongbyon and the light-water reactor construction can be monitored by national technical means if need be. By contrast, monitoring of enrichment would necessitate pinpointing the location of any enrichment facility and likely require on-site inspections, as would continuing low-level enrichment. Emissions from such facilities are detectable, but remote monitoring is a technical challenge yet to be overcome. On-site monitoring of the enrichment facility at Yongbyon may be feasible using gamma ray detectors and other means, as in Iran, but the North has tacitly acknowledged the existence of a second enrichment site in an informal meeting in 2013 and there may be more suspect sites elsewhere. Locating them would allow them to be targeted for attack, something that the North might be loath to do. But the fact that Pyongyang now has a nuclear deterrent might preclude any such attacks and open the way to its identifying those sites. Interestingly, in Track II, DPRK diplomats have indicated that the subject might be negotiable. Whether it is, and when, is not known. Simply visiting such a facility and observing the equipment would enable inspectors to glean useful information about the rate of production and clues about other sites.

The complexity of negotiating such monitoring arrangements suggests that the initial aim of negotiation should be the sustained suspension of nuclear and missile testing and not fissile material production other than the facilities at Yongbyon.

### **The Goal of Denuclearization**

A July 6, 2016 statement by the DPRK government rejected the idea that the North had to “denuclearize first” but hinted that denuclearization of the Korean peninsula remained a possibility. It set out its own conditions that would have to be satisfied before that could be considered:

*Firstly, all the nuclear weapons should be opened to public, first of all, which the US has neither acknowledged nor denied after bringing them to south Korea. Secondly, all the nukes and their bases should be dismantled and verified in the eyes of the world public. Thirdly, the US should ensure that it would never bring again the nuclear strike means to south Korea, which the US has frequently deployed on the Korean peninsula and in its vicinity. Fourthly, it should commit itself to neither intimidating the DPRK with nukes or through an act of nuclear war nor using nukes against the DPRK in any case. Fifthly, the withdrawal of the US troops holding the right to use nukes from south Korea should be declared. If the US and the south Korean authorities truly want to see the denuclearization on the Korean peninsula and build a "peaceful world without nuclear weapons", there will be no reason for them to turn down the just demand of the DPRK. If such security guarantee comes true, the DPRK will also take steps in response to it and a decisive breakthrough will be made in realizing the denuclearization on the Korean peninsula.*  
[note italics added by authors]

Upon guiding the successful test-launch of the Hwasong-14 ICBM on July 5, 2017, Kim Jong Un set a general condition for negotiating reductions or elimination of nuclear weapons and longer-range ballistic missiles: “He stressed that the DPRK would neither put its nukes and ballistic rockets on the *table of negotiations* in any case nor flinch even an inch from the road of bolstering the nuclear force chosen by itself *unless the US hostile policy and nuclear threat to the DPRK are definitely*

*terminated.*” That statement stops short of precluding acceptance of denuclearization as the ultimate goal of negotiation, and it suggested that the door may open to consider nuclear and missile issues at the negotiating table.

Nor have DPRK diplomats precluded that possibility in informal talks. Instead, they have said that the goal of denuclearization is off the table *for now*. Some observers have contended that the North wants the United States to recognize the DPRK as a nuclear weapons state, but North Koreans have disavowed that aim both publicly and privately. Instead, they have said that they have nuclear weapons and the world must live with that fact. In informal probes, they have hinted at a willingness to conduct “talks about talks” with the goal of denuclearization neither on nor off the table.

At what point they may be willing to recommit unconditionally to the goal of denuclearization is not clear, but insisting that they do so as a prelude to a sustained suspension is likely to preclude any agreement.

Since any agreement that does not include that unconditional commitment is likely to prove politically parlous, negotiation might have to continue without any announced interim agreement while a sustained suspension and accompanying reciprocal steps remain in place.

### **A Sustained Testing Suspension Once a Workable ICBM and Thermonuclear Device Exist**

A sustained suspension of missile and nuclear testing would still be worthwhile negotiating even if the North completes proof testing of a thermonuclear device and demonstrates a functioning reentry vehicle for both its intermediate and long-range missiles.

The North is working on solid fueling, which would make its missiles more capable of mobility and rapidly launch. It is also seeking to improve guidance to increase accuracy and rocket engine efficiency to enhance lift. That may increase pressure to include space launch vehicles in any sustained missile testing suspension.

The North may also seek to pursue a suite of nuclear weapons beyond those currently or in the near future capable of being borne by missiles. A suspension of nuclear testing would impede their development, but it also makes a suspension of fissile material production all the more imperative. The more fissile material they have, the more likely they can consider making tactical nuclear weapons, which would make the security situation much more parlous because decisions regarding their use are less amenable to central control.

### **Potential Incentives and Disincentives**

The incentives can be grouped in four categories. Most important for North Korea’s security is the political relationship with the United States, South Korea, and Japan, or what the North calls an end to the “hostile policy.” Second is the future of the joint military exercises. Third and also important politically, more than economically, is some easing of sanctions. Fourth may be modest humanitarian, energy, or other assistance.

### ***The Political Relationship***

It is often alleged that the DPRK has never made clear what it means by an end to the “hostile policy,” and it is the case that it has focused on different elements at different times, but it has issued several authoritative statements that do list what it seeks. While most of its demands may be relevant inducements for much more far-reaching agreements such as dismantlement of its weapons production facilities or elimination of the weapons themselves, some may be pertinent to a sustained suspension of nuclear and missile testing and fissile material production.

August 31, 2012 memorandum by the DPRK Ministry of Foreign Affairs, entitled “DPRK Terms US Hostile Policy Main Obstacle in Resolving Nuclear Issue,” lays out perhaps the most comprehensive list of demands. Significantly, it draws on prior agreements for a number of them. The memorandum starts by citing the so-called Leap Day agreement, in which:

The US reaffirmed that “it no longer has hostile intent towards the DPRK and that it is prepared to take steps to improve the bilateral relations in the spirit of mutual respect for sovereignty and equality and agreed to provide a substantive amount of food assistance to the DPRK.

It then goes back to the first-ever US-DPRK Joint Statement of June 11, 1993 and cites “US assurances against the threat and use of force, including nuclear weapons.” It notes the mutual commitment in the 1994 Agreed Framework “to move toward full normalization of political and economic relations.” And it adds the pledge in the October 12, 2000 Joint Communiqué that “neither government would have hostile intent toward the other.” The memorandum also cites the mutual commitment in the Six Party Joint Statement of September 19, 2005 “to take steps to normalize their relations subject to their respective bilateral policies.” In addition to these agreements, the memorandum cites past DPRK proposals, namely, its proposal in the Declaration for the development of North-South relations and peace and prosperity of October 4, 2007 and the Statement of the Ministry of Foreign Affairs of the DPRK of January 11, 2010 that the signatories to the Korean Armistice Agreement sit together to discuss on declaring the end of the war and that the talks should be held to replace the Armistice Agreement with a peace treaty on the occasion of the 60th year of the Korean War outbreak. It also enumerates various US and multilateral economic sanctions as “an important tool” of the hostile policy. It concludes by recalling Kim Jong Il’s statement of August 4, 1997 that we did not intend to regard the US as the sworn enemy but wished for the normalization of the DPRK-US relations and concludes, “The respected Marshal Kim Jong Un wants to open up a new chapter for the development of relations with the countries friendly towards us, unbound to the past.”

A January 14, 2013 Foreign Ministry memorandum stipulated that the acid test “in deciding whether the US will maintain or not its anti-DPRK hostile policy” is “whether the US immediately dismantles the ‘UN Command.’”

A July 6, 2016 statement by the DPRK government indicated its willingness to discuss denuclearization—not first, but in return for reciprocal measures, including a peace process:

The US has declined the DPRK’s constructive proposal for replacing the Armistice Agreement with a peace treaty under such absurd preconditions as “north’s dismantlement of nukes first” and squarely challenged the DPRK’s sincere proposals and efforts for dialogue for the improvement of the north-south ties and Korea’s reunification with such words as “north’s denuclearization first.” ... If the US and the South Korean authorities have an iota of interest in the denuclearization on the Korean peninsula, they should accept the principled demand of the DPRK before anything else, the statement said, and went on: Firstly, *all the nuclear weapons should be opened to public*, first of all, which the US has neither acknowledged nor denied after bringing them to south Korea. Secondly, *all the nukes and their bases should be dismantled* and verified in the eyes of the world public. Thirdly, *the US should ensure that it would never bring again the nuclear strike means to south Korea*, which the US has frequently deployed on the Korean peninsula and in its vicinity. Fourthly, *it should commit itself to neither intimidating the DPRK with nukes or through an act of nuclear war nor using nukes against the DPRK* in any case. Fifthly, *the withdrawal of the US troops holding the right to use nukes* from south Korea should be declared. If the US and the South Korean authorities truly want to see the denuclearization on the Korean peninsula and build a “peaceful world without nuclear weapons,” there will be no reason for them to turn down the just demand of the DPRK. *If such security guarantee comes true, the DPRK will also take steps in response to it and a decisive*

*breakthrough will be made in realizing the denuclearization on the Korean peninsula.*

All these demands except the reference to dismantling “bases” in the second point seemed negotiable — though not in return for a mere suspension.

Whether these demands remain the basis of the DPRK’s ultimate position for a comprehensive settlement, at a minimum it will want some pledge of non-hostile intent for suspending its nuclear and missile activities testing. In addition, it may want a commitment by the United States and South Korea to commence a peace process on the Korean peninsula, especially if the suspension extends to its fissile material production.

### ***The Joint Military Exercises***

The DPRK has long complained about the US-ROK joint exercises and has publicly called for their cancellation. In its January 9, 2015 proposal, it called for their temporary suspension. The problem with that so-called freeze for a freeze is that it could entail giving up exercises for longer than is militarily sound in order to keep North Korean nuclear and missile activities under suspension.

North Korean diplomats have since said that scaling back the size and operating tempo of the largest exercises instead of suspending them temporarily would suffice. They expressed particular concerns about nuclear-capable B-52 bombers, the B-1 bombers (which are not wired for nuclear delivery), and nuclear-powered ships. They specifically sought to remove those nuclear assets from the exercises. Kim Jong Un himself hinted at this more acceptable version of a freeze for a freeze in his 2018 New Year’s Day address. South Korea, he said, “should discontinue all the *nuclear* war drills they stage with outside forces.” *Rodong Sinmun* made that explicit on January 11, 2018: “If the South Korean authorities really want detente and peace, they should first stop all the efforts to bringing in US nuclear equipment and conducts exercise for nuclear warfare with foreign forces.”

The United States did just that in its August 2016 exercise after North Korea threatened a Hwasong-12 missile test-launch in the vicinity of Guam, and Kim Jong Un responded by postponing the launch during an August 15 inspection of the KPA Strategic Force Command. Yet after South Korean aircraft conducted a mock decapitation attack as part of the exercises, the North launched three short-range missiles on August 26. Prefiguring the launches was a *Rodong Sinmun* article the previous day criticizing what it called a “beheading operation” as part of OPLAN 50. Two days later Kim Jong Un personally “guided” a Hwasong-12 launch that overflew Japan rather than Guam. This strongly suggests that the North will want to exclude any decapitation strikes from the exercises. What other restraints on the scope of the exercises it may seek is not clear.

### ***Sanctions***

The DPRK has long taken the imposition of sanctions, whether authorized by the U.N. Security Council or undertaken unilaterally, as a sign of enmity. They will likely want some sanctions easing as an inducement to suspend testing. Undoing Security Council sanctions may be too much to ask for, although China and Russia may take an agreement to suspend testing as an opportunity to relax their own implementation.

Informal contacts suggest that some easing of US unilateral sanctions may suffice, specifically the Trading with the Enemy Act sanctions, imposed before the nuclear issue arose and first relaxed by President Clinton, then re-imposed by his successor, then relaxed once more, only to have President Obama re-impose them once more.

If it wants a further easing of sanctions, a relaxation of unilateral South Korean sanctions might

serve as an added inducement.

### ***Humanitarian and Development Aid***

As was the case in all prior deals, Pyongyang may seek some humanitarian assistance. While the humanitarian situation in the North may be less dire now than in the past, there is still need for food, medicine, and other humanitarian aid that is unmet by current international efforts. Sanctions, while exempting humanitarian aid, still impedes its delivery. Humanitarian aid may have the added benefit of building popular support for engagement, a point made by North Korean diplomats in the past in recommending that the source of the aid deliveries be identified on the aid packaging.

As was also the case in past deals, a quid pro quo for the suspension of fissile material production is energy aid, such as that halted by South Korea in 2008. If a sustained suspension of fissile material production, even a partial one, is negotiated, appropriate energy assistance might include some relaxation of the oil import quota and/or provision of portable energy generators.

## **5. CONCLUSION: THE BOTTOM LINE**

The DPRK's actual negotiating position is of course unknown at this point, but past negotiations and subsequent contacts suggest that a sustained suspension of ballistic missile and nuclear tests and some fissile material production is potentially negotiable. Will the reciprocal steps proposed above suffice to demonstrate to Kim Jong Un some US relaxation of hostility? Judging by public and private statements from DPRK officials, they might. Only direct negotiation will tell.

Nonetheless, it is important to spend some time exploring a comprehensive settlement before seeking a sustained suspension. The United States understandably wants a commitment to denuclearization of the Korean peninsula. And the DPRK may want to have some idea of the long road ahead. Yet insisting that Kim Jong Un commit to abandoning his deterrent up front before seeking a sustained suspension is to sacrifice the practical on the altar of the hypothetical. It will likely lead the DPRK to balk - and continue its unbounded nuclear and missile development.

Faithfully implementing such a sustained suspension along with reciprocal steps to address DPRK concerns is essential to build a modicum of trust between the two sides, which in turn can open the way to a more comprehensive outcome. The DPRK retains significant leverage in the event of US non-compliance: it can resume testing to develop a reentry vehicle and a reliable thermonuclear weapon and retains a capability to enrich uranium.

Should negotiation fail, economic sanctions and political isolation would resume and deterrence maintained. Even then, however, because of the risk of deadly clashes on the peninsula, deterrence alone will not suffice and some diplomatic engagement will be needed to manage the relationship.

Concurrently, the risk of the DPRK exporting nuclear weapons related knowledge, hardware, materials, and even devices will increase in this situation, and the corresponding need for enhanced non-proliferation efforts will similarly rise as part of the cost of failure.

## **ATTACHMENT I: INDICATIVE MONITORING AND VERIFICATION WORK PLAN FOR ROADMAP**

This table outlines the separate but concerted measures that the United States (and the other four parties) and the DPRK (sixth party) may take to denuclearize the Korean Peninsula.

After each measure, possible concrete form of implementation, monitoring and verification, and critical issue to be determined are also stated in *italics*.



## Improving the Atmosphere for Negotiations

DPRK	US
Resume search for MIA remains in DPRK with US military teams	Humanitarian US government aid through WFP
Repatriate three Americans	
Exhibit of North Korean packaging art	Taekwando exhibition or match

## Phase 1 Suspension and Phase 2 Dismantlement

DPRK	US
Temporarily suspend nuclear and missile tests	Low-end: scale back spring joint exercises, tacit non-inclusion of nuclear-capable assets and decapitation
Sustained suspension of nuclear and missile testing	, At Trump-Kim summit, restate non-hostile intent, commitment to reconcile by normalizing political and economic relations, respect for sovereignty, peaceful resolution of nuclear issue on the Korean peninsula, words for words and action for action; or commit to six principles of a comprehensive settlement Joint exercises: explicit non-inclusion of nuclear-capable assets and decapitation attacks, reducing size of force, possible relocation overseas At Summit, announce re-posting of US MIA Joint Recovery teams to DPRK
<i>Emplacement of seismic and gas sampling sensors</i>	<i>Invitation to observe US-ROK military exercises</i>
<i>Agreement for logistical and communications support to US MIA-JRT including organic sat phones.</i>	<i>Explore reciprocal observation of military exercises</i>
Suspend satellite launches.	UNSC resolution waiving ban on SLV launches, or share satellite imaging of ROK  Provide additional humanitarian aid, hold ROK-DPRK summit

<p>Verification by DSP satellites, radar, other NTM If satellite launches not suspended, facilitate monitoring by NTM by openly demonstrating distinguishing characteristics of rocket and payload</p>	<p><i>Size and specify aid, milestones, monitoring and verification of delivery to target populations, access to monitors provided, permission for monitors to enter DPRK provided</i></p> <p><i>Specify aid routes, support infrastructure for UN, bilateral, and private aid delivery</i></p>
<p>Suspend plutonium production at Yongbyon, including 5 MW(e) reactor, reprocessing facility, LWR construction</p>	<p>Provide token energy assistance with partial easing of oil sanctions, small-fast in-country energy assistance (e.g., shipload of weather stripping and insulation for energy efficient buildings, some wind turbines) Scale back fall exercises</p>
<p>Install seals, surveillance cameras, post inspectors on site</p>	<p><i>On site access for joint implementation of energy projects to international development standards</i></p> <p>Exchange of liaison offices; or diplomatic recognition of DPRK by US, ROK (?) Commit to begin peace process with declaration of treaty as goal Relax some US and ROK unilateral sanctions</p>
<p>Resume international inspections of plutonium facilities at Yongbyon under 1992 safeguards agreement</p>	<p>Commence discussion of converting IRT medical isotopes reactor to LEU; and possible replacement of IRT reactor Commence discussion of safety and E-LWR options (including "reunification reactor," and requisite supporting grid rehabilitation) &amp; possible future nuclear fuel cycle cooperation measures (U export, enrichment consortium, R&amp;D on joint Korean spent fuel dry cask interim underground storage or disposal sites)</p>
<p>Install seals, surveillance cameras, post inspectors on site</p>	<p>Prefigure equivalent Additional Protocol Safeguards measures being applied to the above until DPRK returns to IAEA SG system</p>
<p>Suspend uranium conversion and enrichment at Yongbyon</p>	<p>Provide additional energy, humanitarian aid, relax more unilateral sanctions, reopen Kaesong JIA</p>
<p>Suspend all uranium conversion and enrichment, suspend production of tritium.</p>	<p>Commit to principles of comprehensive security settlement (if not done earlier), and prefigure or enact regional Security Council Arrange for confidence-building measures at DMZ, withdrawal of artillery in West Sea area; begin discussion of regional security arrangements</p>
<p>Provide complete and correct declaration of all uranium conversion facilities, enrichment facilities, any other reactor and reprocessing facilities, tritium production facilities and operations.</p>	

<p>Agree to verification protocol for monitoring Yongbyon enrichment facility along the lines of JCPOA</p>	<p>Begin three- or four-party peace process with peace declaration committing sides to complete a treaty</p>
<p>Commit to abandon nuclear weapons and programs and to a Nuclear Weapons-Free Zone UN treaty (Korea only at the outset, open to others to accede; or regional at the outset).</p>	<p>Five parties commence cooperation on nuclear and energy security with study of nuclear safety requirements for fuel cycle operations in the DPRK and/or begin joint work on grid rehabilitation to enable regional grid integration and tie lines with ROK, China, Russia</p>
<p><i>DPRK may file first UNSC 1540 national report on implementation of national controls on non-state actors and proliferation activity</i>  <i>Install monitoring devices at graphite and zircon mines</i></p>	<p><i>China, Japan, Korea, US may provide technical assistance and training on UNSC 1540 implementation and reporting</i>  <i>Limited sanctions relief for US mining investment</i></p>
<p>If LWR construction to resume, install seals, surveillance cameras, and allow on-site inspections to prevent diversion begin</p>	<p>Allow inspections at sites in ROK, including some bases and KAERI</p>
<p>Install gamma ray monitoring and other instrumentation at enrichment plant to limit enrichment level and quantity of LEU to fuel LWR, allow on-site inspections</p>	<p>Allow LWR construction to resume and production of limited amount of LEU to fuel it</p>
<p><i>Monitor tritium and fluorine production sites.</i>  <i>Issue: what is needed? Cameras? Flow meters?</i></p>	<p><i>Provision of LWR design information, drawings, joint review of design from energy and safety perspective, maybe a joint examination of LWR size-grid stability issue</i></p>
<p><i>Issue: uranium mining, conversion of ore?</i>  <i>Is mining and processing yellowcake a time constraint for DPRK resumption of fuel cycle activities</i>  <i>Possible CBM as against M&amp;V might be to sample U ore in DPRK to determine grade, from which outside analysts can determine stock and flow analysis given observed extraction and processing technology, chemicals used, etc. Russia has significant insight into DPRK U ores and mining and might be able to assist. Also, IAEA did Technical Assistance missions on U mining in 80s; may be able to track down the consultants.</i></p>	<p><i>Maybe training on LWR construction standards, flaws and failure modes, and risk analysis</i>  <i>Problem: we don't want to encourage the completion of the E-LWR; it's inherently unsafe. Although failure won't irradiate much outside DPRK (too little core radiation) nor meltdown (too little thermal mass), we don't want to be blamed for its failure if it's ever turned on. .</i>  <i>Consider replacement of E-LWR and refurbishing local grid needed to support it.</i></p>
<p>Permanently end satellite launches</p>	<p>Hold US-DPRK summit</p>
<p>Six-Party Talks resume, begin negotiation of principles of comprehensive settlement</p>	<p>Allow Open Skies flights over South  Six-Party Talks resume, begin negotiation of principles of comprehensive settlement</p>
<p>Commit to abandon all production of intermediate- and long-range missiles?</p>	<p>ROK commits to suspend all medium-range missile testing and production</p>

*Complete and correct declaration of missile production facilities?*

*Portal monitoring at missile factories?*

*Issue: what M&V at hydrazine (UMDH) site?*

Declare location of main operating bases for intermediate- and long-range missiles and number of missiles?

*Parades to permit NTM to verify count of missiles requiring all missiles to return to MOB and be left in the open, one base at a time to permit count without jeopardizing entire force?*

*Other zero knowledge measures*

### **Phase 3 Disarmament**

Begin dismantlement of 5 MW (e) reactor and second enrichment facility  
Possible breakthrough: DPRK takes nuclear weapons dismantlement step much earlier based on Summit.

*Convene a six party expert working group on NWFZ-NEA (either inter-Korean, noting this would not be legally binding treaty because neither Korea will forego constitutional claims over the other), or as a full-blown regional NWFZ UN treaty (which would be legally binding).*

Begin dismantlement of missile production plants

Determine how much plutonium was reprocessed in three pre-1991 campaigns  
*Match already provided records with graphite core drill results to verify Pu inventory*

Determine HEU inventory

*Match operating records of enrichment facilities to data from swipes; what other techniques?*

Gradually deliver significant energy aid, including generating capacity, grid refurbishment

Begin negotiations of a nuclear-weapons free zone for Northeast Asia. This might be advanced into phase 1 if there is a Summit breakthrough and DPRK is willing to kick-start weapons dismantlement

*Who begins negotiating NEA NWFZ: ROK and Japan? North and South?  
Other six-parties and perhaps nuclear-weapon states eventually affirm not to deploy, threaten or use nuclear weapons in the region*

Ban ROK missiles with range over 150 km?

Assist with cleanup of fissile material production sites

DPRK declaration on number of warheads, fissile material used in tests and warheads, stockpiles of HEU, separated plutonium, weapons facilities, facilities locations, defined milestones, standards, procedures, for access to these locations, records, interviews, then actual weapons dismantlement, removal and disposition of fissile material, destruction of balance of weapons components; ditto test sites

NWFZ treaty can come into force quickly; signing it might be subject of first Six Party Summit if it hastens DPRK nuclear weapons dismantlement steps

Begin weapons dismantlement

Complete regional security agreement or U.S.-DPRK mutual security treaty

Specify Dismantlement Steps, milestones, and verification process and agency. See breakout below this table.\*

Assumption: ROK will not be involved in dismantlement process

Complete weapons dismantlement

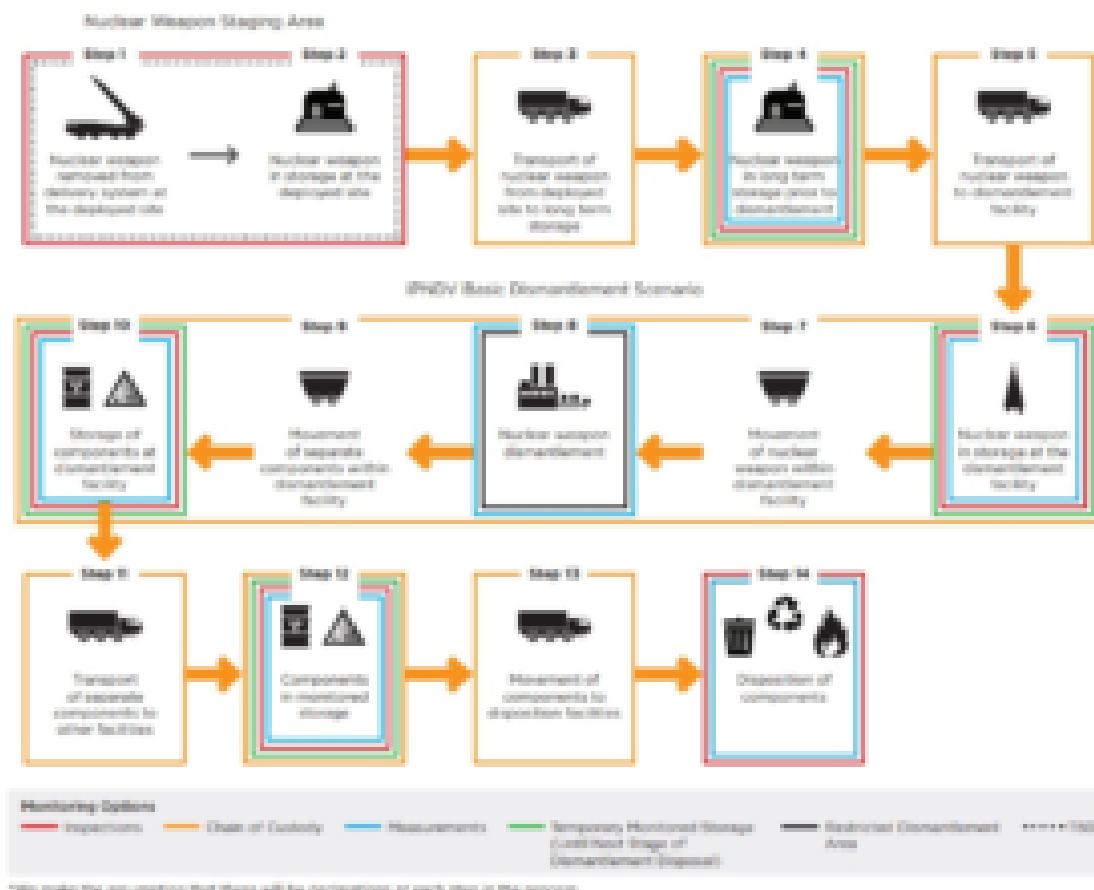
Sign peace treaty at Six Party Summit

### **Nuclear Weapons Dismantlement**

One generic breakdown for verifiable nuclear weapons dismantlement in a cooperative process, that does not divulge sensitive design information to non-nuclear participants, is provided below in summary. The approach was developed by the International Partnership for Nuclear Disarmament Verification.[\[4\]](#)

It involves [14 key steps](#) in the nuclear weapons dismantlement lifecycle, beginning when a nuclear weapon is removed from a delivery vehicle (step 1), until final disposition of the components resulting from the physical dismantlement of a nuclear weapon (step 14).

MONITORING AND VERIFICATION ACTIVITIES, AS IDENTIFIED BY THE IPNDV,  
FOR KEY STEPS IN THE PROCESS OF DISMANTLING NUCLEAR WEAPONS



(Hit diagram for link to original)

Given that monitoring nuclear warhead dismantlement is an essential element of the disarmament process, the IPNDV initially focused on steps 6 to 10, associated with monitoring the nuclear warhead physical dismantlement process. Many options exist for verification and possible technologies and approaches are specified on the IPNDV website.<sup>[5]</sup> The detailed objectives and measures for each step are also detailed in the IPNDV’s “A Verifiable Path to Nuclear Weapon Dismantlement.”<sup>[6]</sup>

The steps below do not include prior steps to come to agreement on a cooperative dismantlement process. These steps include a declaration of number of warheads, possibly including quantities and types of fissile materials, and specification of whether the warheads are militarized and on delivery systems, or in production or storage.

Also, each step on the dismantlement process entails a declaration of achievement, which also offers a point for implementing related quid pro quos with the DPRK during the dismantlement process

This option would allow the ROK and other non-nuclear states parties to a nuclear weapons-free zone agreement to participate, possibly as party an inspection entity created for a peninsular agreement or a regional NWFZ treaty.

Alternately, the verification entity might be a specific organization created by the United States, other acknowledged nuclear weapons states (NWS), and other states in the region; or an “IAEA Plus,” which would involve appropriately cleared P5 staff members of the IAEA safeguards department supplemented by experts or assistance from key member-states (variants of this model were used in Libya and South Africa).

### III. ENDNOTES

[1] These are most likely to be a) the front-loading of DPRK nuclear disarmament steps, ending the Armistice and replacing UN Command and shifting from a one-sided to a two-sided US deterrent force stationed in Korea; b) how DPRK space launch rockets are treated alongside access to space services; c) DPRK continued production and d) use of low-enriched uranium in a nuclear fuel cycle for power context, and d) a Korean-Peninsula nuclear weapons-free zone in the appropriate legally binding framework. This fourth issue is the subject of a forthcoming NAPSNet Special Report.

[2] A short history of US military operations in North Korea to recover MIA remains is found in Ashton Ormes, "Memorandum on Areas In Which US/DPRK Joint Recovery Operations Have Been Conducted", NAPSNet Policy Forum, April 19, 2004, <https://nautilus.org/napsnet/napsnet-policy-forum/memorandum-on-areas-in-which-usdprk-joint-recovery-operations-have-been-conducted/>

[3] This might be suspension of enrichment above a certain level (for example, 5 percent U235; or simply an outright suspension of all enrichment activity. The former would require on-site monitoring to verify; the latter might be monitored at the start by international remote technical monitoring of facilities and national technical means.

[4] The Partnership is steered by countries with and without nuclear weapons: Phase I working groups were chaired by Australia, the Netherlands, Poland, Switzerland, Sweden, the UK, and the US. Representatives from the following have attended various activities of the partnership: Argentina, Australia, Belgium, Brazil, Canada, Chile, China\*, the European Union, Finland, France, Germany, Holy See, Indonesia, Italy, Japan, Jordan, Kazakhstan, Mexico, the Netherlands, Norway, the Philippines, Poland, Russian Federation\*, South Korea, Sweden, Switzerland, Turkey, the United Arab Emirates, the United Kingdom, and the United States. The details may be found at the IPNDV website: <https://www.ipndv.org>

[5] At: <https://www.ipndv.org/reports-analysis/deliverable-ten-mapping-existing-potential-technical-capabilities-monitoring-verification/>

[6] At: <https://www.ipndv.org/learn/dismantlement-interactive/>

### IV. NAUTILUS INVITES YOUR RESPONSE

The Nautilus Asia Peace and Security Network invites your responses to this report. Please send responses to: [nautilus@nautilus.org](mailto:nautilus@nautilus.org). Responses will be considered for redistribution to the network only if they include the author's name, affiliation, and explicit consent

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