SECURITY & FOREIGN AFFAIRS / BRIEFING PAPER

Hudson Institute

Thinking About a Korean Denuclearization Treaty

Christopher A. Ford

April 2012

Hudson Institute
1015 15th Street, NW
6th Floor
Washington, DC 20005
www.hudson.org

Thinking About a Korean Denuclearization Treaty

Christopher A. Ford[1]

April 2012

Note: *This paper was prepared for a "Track II" dialogue with North Korean officials sponsored by the Aspen Institute Germany, which took place at the* Gut Klostermühle *resort in Germany on March 31 and April 1, 2012. It is reproduced by Hudson Institute with the gracious permission of Aspen Germany.*

---

[1] Dr. Ford is a Senior Fellow at Hudson Institute in Washington. He previously served as U.S. Special Representative for Nuclear Nonproliferation, Principal Deputy Assistant Secretary of State for arms control, nonproliferation and disarmament verification and compliance, and as General Counsel to the U.S. Senate Select Committee on Intelligence. Formerly a reserve intelligence officer in the U.S. Navy, Dr. Ford manages and writes for the New Paradigms Forum website (www.NewParadigmsForum.com). He may be contacted at ford@hudson.org.

Even while officials of the United States and the Democratic People's Republic of Korea (DPRK) reportedly remain engaged in attempting to work out an arrangement pursuant to which the DPRK would return to the long-moribund Six-Party Talks process,[2] there has been no shortage of commentators—including this author—who feel these negotiations are likely to founder on the rocks of Pyongyang's unwillingness, under essentially any conditions, to relinquish its nuclear weapons and associated infrastructure.[3] Nevertheless, the DPRK claims that it remains genuinely interested in negotiations, making it at least theoretically possible that whatever their outcome, *some* kind of nuclear negotiations may recommence.

Accordingly, this paper attempts to explore some of the issues that would be raised, and the challenges that would be presented, if indeed a serious attempt were made to conclude a "Korean Denuclearization Treaty" (KDT). Drawing lessons from the history of arms control, disarmament, and nonproliferation negotiations and agreements between other countries and in other arenas, the paper aims to offer a conceptual framework through which negotiators can approach devising a potential future Korean Denuclearization Treaty.

I. *General Principles and Assumptions*

The analysis offered here builds upon a number of general principles and assumptions, which are set out and explained in the following pages.

A. *Objectives*

This paper assumes that the achievement of Korean denuclearization—that is, the elimination of all nuclear weapons and associated infrastructure, facilities, items, materials in the DPRK and ROK—is indeed the desired objective, and that this should be brought about by a negotiated process. The possibility of denuclearization by forcible means, for instance, will not be discussed here, nor any potential "end state" *other* than denuclearization, such as international acquiescence to DPRK or ROK possession of nuclear weapons, or alternatively, "nuclear inheritance" through regime collapse in Pyongyang followed by ROK-led unification. Our remit here is only to explore the necessary parameters of a negotiated KDT.

The aim of talks is thus posited *not* to be merely to prevent the sort of "miscalculations" that some fear could result from *non*-engagement, as some U.S. officials have suggested.[4] Nor is the goal to temporize by creating the mere *appearance* that negotiated denuclearization remains possible—*e.g.,* in order to avoid election-year problems in the United States, or in order to buy time in which the new DPRK government of Kim Jong-un can consolidate power without facing additional pressures from the outside.[5] I also assume that the objective is not simply to stall for time, creating "breathing space" in which one side or the other could advance its interests through some kind of strategic positioning,

---

2 *See, e.g.*, Chris Buckley, "U.S. envoys say North Korea talks make some progress," *Reuters* (February 24, 2012), *available at* http://www.reuters.com/article/2012/02/24/us-usa-korea-north-idUSTRE81N06U20120224.

3 *See, e.g.*, Christopher A. Ford, "North Korean 'Denuclearization' After Kim Jong-il," *New Paradigms Forum* (February 8, 2012), *available at* http://www. newparadigmsforum.com/NPFtestsite/?p=1203.

4 *See, e.g.*, Stephanie Nebehay, "U.S. and North Korea hold 'useful' talks in Geneva," *Reuters* (October 24, 2011), *available at* http://www.reuters.com/article/2011/10/24/us-korea-north-us-idUSTRE79N1Y020111024?feedType= RSS&feedName=topNews.

5 *See* Ford, "North Korean 'Denuclearization' After Kim Jong-il," *supra*.

awaiting more opportune circumstances for some unilateral move. This paper aims solely at the objective of real denuclearization.

Additionally, this paper is predicated upon the assumption that denuclearization must be not only actually *achieved*, but also persuasively *demonstrated*. Given the history of mutual recriminations and accusations of bad faith that have characterized nuclear negotiations with the DPRK since their commencement in the early 1990s, effective and successful international verification of any KDT is absolutely essential. The DPRK has a track record of noncompliance with every one of its previous nuclear agreements—including the Treaty on the Non-Proliferation of Nuclear Weapons (NPT),[6] the 1992 North-South Joint Declaration on the Denuclearization of the Korean Peninsula,[7] the 1994 Agreed Framework with the United States,[8] and the 2005 Joint Statement agreed in the Six-Party Talks process—as well as a long history of false and/or evasive public statements, both to the IAEA and to the United States, about its nuclear programs.[9] No KDT could succeed, or represent a sustainable solution to the Korean Peninsula's ongoing nuclear crisis, if it did not squarely address verification in a way that provides all the other Six-Party partners, and the international community as a whole, with strong and credible assurances that *this time*, at least, the crisis had in fact been resolved.

This assumption also necessarily incorporates another: that a mere "freeze" on DPRK nuclear activities, even if it could be verified, is *not* a solution to the crisis. A verified freeze might be a valuable step in the *direction* of a solution, of course, but it must be approached cautiously. The history of DPRK nuclear negotiations, moreover—particularly the collapse of the 1994 Agreed Framework upon the U.S. discovery that Pyongyang was engaged in secret nuclear activity (a Uranium Enrichment Program [UEP]) *elsewhere* than at the single facility known at the time—suggests that in order for even a "freeze" to be adequately verified, wide-ranging and potentially intrusive inspection activity would be needed.

A "freeze" *absent* such country-wide verification would not be *nothing*, of course—for it is presumably better for known facilities to be inactive than to be operating at full capacity—but it would be important not to mistake such an arrangement for more progress than it would really represent. (Such a location-specific "freeze," moreover, might even represent *retrograde* motion if it led one or more parties to undertake actions or relax vigilance in ways that make a *genuine* resolution less likely.) Rather than address "freeze" issues here, however, this paper will aim itself squarely at the genuine resolution represented by a Korean Disarmament Treaty.

Finally, this paper proceeds from the assumption that "denuclearization" in the DPRK refers to a situation in which Pyongyang no longer has the technical capacity to produce nuclear weaponry. This necessarily entails the absence of fissile material production

---

6 Treaty on the Non-Proliferation of Nuclear Weapons (July 1, 1968) (entered into force March 5, 1970) [hereinafter NPT], *available at* http://www.iaea.org/Publications/Documents/Infcircs/Others/infcirc140.pdf.

7 Joint Declaration of South and North Korea on the Denuclearization of the Korean Peninsula (January 20, 1992) [hereinafter Joint Denuclearization Declaration], *available at* http://www.fas.org/news/dprk/1992/920219-D4129.htm.

8 Agreed Framework Between the United States of America and the Democratic People's Republic of Korea (October 21, 1994) [hereinafter Agreed Framework], at Part III(2), *available at* http://www.kedo.org/pdfs/Agreed Framework.pdf.

9 *See generally, e.g.*, Christopher A. Ford, "Challenges of North Korean Nuclear Negotiation," *in Aspen DPRK-USA Dialogue* (C.K. Mallory IV, ed.) (Aspen Institute Germany, 2011), at 63, 70, *available at* http://aspeninstitute.de/en/publication/download/29/Aspen+DPRK-USA+Dialogue+.pdf.

capabilities of any sort. This is important both in its own right, in order to preclude future diversion of materials and/or technology to nuclear explosive purposes, and in order to provide outsiders with the verification confidence they need in order to trust that denuclearization has actually occurred.

B. *Cast of Characters*

All of the non-DPRK partners involved in earlier rounds of the Six-Party Talks process—that is, the United States, Russian Federation (Russia), People's Republic of China (China), Japan, and the Republic of Korea (ROK)—have important roles to play, and should be involved both in negotiating and in implementing a KDT. In particular, the ROK is an indispensible player, both because its relationship with the United States is maturing into a full security partnership with the pending transfer to ROK operational control of U.S. forces stationed on the Korean Peninsula, and because Seoul's core national security interests are more directly and immediately implicated in the denuclearization question than those of any other power apart from the DPRK itself. Both equity and practicality thus dictate that the ROK must be intimately involved in all denuclearization negotiation from its very earliest stages; these are issues that must not and cannot simply be decided by fiat between Washington and Pyongyang.

C. *Process*

This paper assumes that it is essential that any KDT be not merely agreed between foreign ministries, but in fact fully and formally ratified and accepted through the requisite institutions and legal procedures at least in the core signatories—the United States, ROK, and DPRK—and perhaps indeed by all Six-Party partners. In the United States, for example, this would necessitate U.S. Senate advice and consent pursuant to Article II, § 2, of the U.S. Constitution. In the ROK, treaty ratification would have to take place with the consent of the National Assembly,[10] and in the DPRK, with approval from the Supreme People's Assembly (SPA). (Interestingly, the phrasing of the DPRK's 2009 constitution also suggests that technically speaking, a treaty cannot even be *broken* without action having been taken by the SPA.)[11]

This is concededly a much higher hurdle than that imposed in connection with prior nuclear agreements with the DPRK, such as the 1994 Agreed Framework, which despite being "note[d] with satisfaction" by the U.N. Security Council,[12] was only *politically* binding and did not even amount to an "Executive Agreement" under U.S. law.[13] It certainly did not

---

10 *See, e.g.*, Constitution of the Republic of Korea (as amended October 29, 1987), at Art. 60(1) (giving the National Assembly "the right to consent to the conclusion and ratification of treaties pertaining to mutual assistance or mutual security; treaties concerning important international organizations; treaties of friendship, trade and navigation; treaties pertaining to any restriction in sovereignty; peace treaties; treaties which will burden the State or people with an important financial obligation; or treaties related to legislative matter"), *available at* http://www.ccourt.go.kr/home/ att_file/download/ Constitution_of_the_Republic_of_Korea.pdf.

11 *See* Constitution of the Democratic People's Republic of Korea (April 2009), at Art. 91(17) (giving the Supreme People's Assembly [SPA] authority to "[d]ecide on the ratification *or abrogation* of treaties presented to the SPA.") (emphasis added), *available at* http://asiamatters.blogspot.com/2009/10/north-korean-constitution-april-2009.html.

12 Statement by the President of the Security Council, S/PRST/1994/64 (November 4, 1994), *available at* http://daccess-dds-ny.un.org/doc/UNDOC/GEN/N94/433/ 86/ PDF/N9443386.pdf?OpenElement.

13 *See generally* André Poucet, "Arms Control and Non-Proliferation Treaties: An Ontology of Concepts and Characteristics," in *Verifying Treaty Compliance: Limiting Weapons of Mass Destruction and*

face full ratification with the consent of the U.S. Senate, the ROK's National Assembly, or the DPRK SPA. Nevertheless, such a ratification requirement is essential for a KDT precisely *because* real denuclearization is assumed to be the objective, and because multiple players' security interests would be so directly affected by the terms of a KDT.

*[**Editor's note:** The author has addressed the issue of KDT approval in more detail in this remarks to the 2012 Aspen-sponsored dialogue for which this paper was prepared. See http://www.newparadigmsforum.com/NPFtestsite/?p=1254.]*

At least for those participants in the Six-Party process that are democratic polities, such a ratification requirement increases the degree to which a broad swathe of policy constituencies and interest groups would be involved in evaluating, debating, and approving the treaty. Even in the DPRK, moreover, it might be that full ratification formalities provide an opportunity for greater engagement of interested parties, which could be an especially important factor given the recent transfer of power from the late Kim Jong-il to Kim Jong-un. Awareness that an agreement would be subject to such scrutiny would help keep negotiators keenly focused upon what is actually achievable, while this scrutiny itself—and the engagement of multiple domestic stakeholders in the approval process that it entails—should help ensure both the quality and the sustainability of any agreement actually reached. Accordingly, this paper proceeds on the basis that the full panoply of formalities is essential.

D. *Symmetry and Zone of Applicability*

The focus of the hypothetical KDT discussed herein would be, as its name implies, upon the *Korean Peninsula*. It would thus *not* represent a general strategic agreement as between the parties in other respects, and thus would avoid entanglement in issues related to the nuclear weapons posture of any country further afield. This paper assumes that any attempt to prescribe nuclear (or other military) force postures for countries *outside* the Korean Peninsula would ensnare KDT negotiations in insoluble conundra and preclude progress.

E. *Dismantlement Roles*

This paper builds its approach upon the idea that technologies and information related to nuclear "weaponization"—that is, items and knowledge pertaining specifically to the design and function of nuclear weaponry, and which generally do *not* have any other utility—require special handling and procedures. *All* such nuclear materials and related technologies require special handling and attention in a Verification and Elimination (V&E) process in order to ensure that such work does not make nuclear proliferation problems *worse*. Nevertheless, weaponization-specific technology is much more sensitive than "dual-use" material or technologies that can be used either for "peaceful" purposes *or* for the development or production of nuclear explosives.

The International Atomic Energy Agency (IAEA or Agency) has enormous experience in safeguarding dual-use items and material through its role in doing verification-related work under the Comprehensive Safeguards Agreements (CSAs) that NPT States Party are required to reach with the Agency pursuant to Article III of that treaty. The IAEA also

---

Monitoring Kyoto Protocol Compliance (Rudolf Avenhaus et al., eds.), (Berlin: Springer, 2006), at 41, 48.

has a large and growing reservoir of experience with dual-use technologies through its work in trying to verify the absence of undeclared nuclear activities under the Additional Protocol adopted by an increasing number of states since the late 1990s. The Agency even has *some* experience in Libya and the Republic of South Africa (South Africa), as we shall see, in observing the elimination of dual-use technologies formerly part of a state's nuclear weapons program.[14] This paper assumes, therefore, that whatever *additional* role might be played by inspectors and verification and compliance experts from other Six-Party participants, the IAEA—if provided with resources and diplomatic support sufficient for such purposes—is well-positioned to play a major (and perhaps the lead) role in V&E work *for dual-use materials and technologies* in the DPRK.

With respect to weaponization-specific information and technology, however, this paper assumes the IAEA to be an *inappropriate* institution for conducting V&E work under a denuclearization treaty. On account of its extraordinary sensitivity, weaponization information is handled under extremely tight security conditions in all responsible weapons possessor states. The IAEA, however, is structurally incapable of providing weaponization information with the requisite degree of security. As an international organization, the Agency is unable to conduct security background checks upon its employees, employs personnel on a semi-quota basis from a range of member countries that nominate them for this purpose, is unable to invoke and rely upon either "national" loyalty or criminal penalties to ensure staff loyalty, and is in various additional ways an extremely "soft" target for espionage penetration.

This paper thus assumes that it would be improper to entrust weaponization information or technology to the IAEA: giving such data to the Agency would present an unacceptable risk of onward transfer, either to the home government of one or more IAEA staffers, or to third parties. Indeed, for this reason, it might raise problems under the NPT's Article I[15] for any NPT Nuclear Weapon State (NWS) to permit or facilitate the transfer of weaponization information to the Agency.

Nevertheless, because Pyongyang has developed, openly tested, and is believed currently to possess multiple nuclear warheads, denuclearization V&E work in the DPRK will necessarily have to deal with weaponization information, not simply dual-use technologies. Accordingly, it is an assumption of this paper that in order to minimize onward proliferation risks and prevent the emergence of potential NPT Article I problems, one or more NPT Nuclear Weapon States must be directly involved in DPRK denuclearization in order to handle weaponization-related V&E work, since this cannot safely be assigned to the IAEA.

It is further assumed that in order to increase international confidence that denuclearization has actually occurred, all weaponization-related elimination work will have

---

[14] The so-called "disablement" work undertaken, at least briefly, by the DPRK at part of its Yongbyon nuclear facility in 2007-08, however, was overseen not by the IAEA but by American V&E experts. *See* Ed Johnson, "Rice Says North Korea Disablement is Progressing Well," *Bloomberg* (November 7, 2007), *available at* http://www. bloomberg.com/apps/news?pid=newsarchive&sid=asdCaReqhYwY. The DPRK also invited reporters to film the demolition of a cooling tower at Yongbyon in 2008. "Yongbyon cooling tower demolished," World Nuclear News (June 30, 2008), *available at* http://www.world-nuclear-news.org/NP_Yongbyon_cooling_tower_demolished_3006081.html.

[15] NPT, *supra*, at Art. I ("Each nuclear-weapon State Party to the Treaty undertakes … not in any way to assist, encourage, or induce any non-nuclear-weapon State to manufacture or otherwise acquire nuclear weapons or other nuclear explosive devices, or control over such weapons or explosive devices.").

to be conducted either directly by such weapon-state outsiders themselves, or by DPRK authorities operating under their close observation and supervision. (The latter would presumably be much more acceptable to Pyongyang, but either option would presumably suffice to satisfy verification requirements.) This elimination would also have to take place under conditions that had been carefully agreed in advance, and subject to appropriate documentation requirements.

This paper assumes that it would *not* be sufficient for weaponization-related elimination to be undertaken independently by DPRK authorities. To be sure, that outcome was deemed sufficient in the case of South Africa's nuclear weapons, which were dismantled secretly, with the resulting fissile material only being turned over to international verifiers afterwards, and then in an essentially "sanitized" form. As we will see hereinafter, however, South African dismantlement is a very special case, and cannot—as a practical matter—be separated from the broader circumstances in which it occurred: political reforms attendant to the end of the *apartheid* régime, at a point at which preparations were already beginning to be made for a negotiated transfer of power to a democratically-elected government. Under those conditions—*i.e.*, the National Party *apartheid* government's *own* presumed desire *not* to see Nelson Mandela's African National Congress (ANC) inherit nuclear weaponry or the ability to develop it—this mode of independent dismantlement was considered adequately trustworthy.

Given the DPRK track record of nuclear deception and concealment, however—and the presumed *unwillingness* of DPRK negotiators to agree to analogous circumstances of regime change as a means of increasing outsiders' verification confidence—this paper assumes that international partners would find it inadequate for weaponization-related dismantlement to be conducted by DPRK officials entirely on their own. Accordingly, weaponization V&E must be undertaken either by NPT Nuclear Weapon State officials themselves or by DPRK authorities under their supervision. Anything less, it is assumed, would not create adequate verification confidence.

I do not mean to minimize the difficulty of obtaining agreement on these points. Presumably with these sorts of nonproliferation considerations in mind, U.S. authorities submitted a denuclearization verification proposal to the DPRK in 2008 that covered much of this ground. Under that plan, verification activities involving "weaponization-related activities, information, facilities, or material" were to be carried out by "experts from the [NPT] Nuclear Weapon States." Information about weaponization-related work in the DPRK would be shared with other Six-Party partners only "to the extent consistent with the NPT," and provided to the IAEA only through communications with "select [IAEA] inspectors from the Nuclear Weapons States" and only where specifically necessary for the Agency to perform its duties. The U.S. proposal envisioned that the IAEA would be involved "[w]hen necessary" in order to provide "consultancy and assistance," and would generally handle issues related to dual-use technology.[16] As we will see below, however, this plan was apparently rejected by Pyongyang. Nevertheless, this paper assumes that careful management of weaponization information is necessary, and that this entails special roles and responsibilities for Nuclear Weapon State representatives not unlike what was described in the 2008 plan.

---

[16] U.S. Government, "Verification Measures Discussion Paper" (2008), at 1-2 & 4, *available at* http://www.washingtonpost.com/wp-srv/politics /documents/kesslerdoc_092608.pdf?sid=ST2008092600020&s_pos=list.

F. *Verification and Elimination Technology*

This paper also assumes that suitable technologies both for finding and for appropriately eliminating nuclear items and facilities would be available for implementing a Korean Disarmament Treaty. This may be more easily said than done, especially on the verification side—at least when it comes to searching broad swathes of territory for undeclared activities—but for present purposes, we will leave these challenges largely aside.

Once nuclear items and facilities have been identified, elimination is not likely to be particularly challenging. By way of comparison, U.S. and Russian collaborative studies of warhead elimination methodologies in anticipation of a possible START III agreement began in the late 1990s, and continued well into the 2000s.

> "The U.S. Department of Defense began conducting Warhead Monitoring Technology Project exercises in 2001, for example, and U.S. experts have been doing some technological and operational development work on transparency measures for several years. The United States even conducted a fissile-material technology-transparency demonstration for a delegation of Russian scientists, and in the late 1990s the U.S. national laboratories began collaborating, at least fitfully, with their Russian counterparts on measures for verifiable warhead storage and transport tracking."[17]

Studies jointly conducted by the United Kingdom and the Kingdom of Norway in the late 2000s have also focused upon verifying warhead elimination and establishing chains of custody for sensitive fissile materials derived from weapons. Although that Anglo-Norwegian effort appears not to have examined how vulnerable such systems might be to deliberate "spoofing" by a host government that wished to create the *impression* that more warheads had been eliminated than was actually the case, there is reason to think that elimination is a manageable technical challenge.

Indeed, the biggest challenges suggested by the Russo-American and Anglo-Norwegian work have stemmed principally from the difficulties of doing elimination in a superpower context in which each side wishes to conceal the details of its nuclear warhead designs from the other. This sets up a tension between how little the host government wishes to reveal and what the other side—or international verifiers—need to *know* in order to have confidence that elimination is indeed taking place (*e.g.*, that a particular shrouded object earmarked for elimination really *is* a warhead). To resolve *this* tension requires the use of sophisticated scanning and data-"sanitization" techniques in order to verify relevant warhead signatures without compromising sensitive information about the devices themselves. It is this sanitization process that raises the toughest issues of potential "spoofing" or other deception, which would presumably *not* arise if so much design-related information did not need to be thus concealed. This paper assumes that in the DPRK context—with "de-weaponization" being carried out by, or under the close observation of, Nuclear Weapon State (NWS) experts from whom no weapons data need be concealed—this type of challenge will not arise. (This approach has the added advantage of allowing KDT implementation to occur without delaying elimination due to the requirement to wait for the development or certification of new technical methodologies.)

---

[17] Christopher Ford, "Why Not Nuclear Disarmament?" *The New Atlantis*, no. 27 (Spring 2010), *available at* http://www.thenewatlantis.com/publications/why-not-nuclear-disarmament.

The technical challenges are surely greater with regard to *finding* things to eliminate, especially in the DPRK context. For better or for worse, international verifiers will depend principally upon DPRK declarations—and close analyses of their internal consistency, technical basis, and correspondence with information acquired by other means—in order to identify relevant locations and activities. Nevertheless, given Pyongyang's track record of nuclear deception, relying *only* upon declarations in this manner would be unlikely to produce meaningful verification confidence in the outside world.

This paper assumes, therefore, that a KDT would have to provide for international investigations and monitoring capable of effectively verifying the absence of undeclared material, locations, and activities beyond what are admitted by DPRK authorities. For the most part, a KDT would approach this challenge by giving appropriately broad investigative authorities to international inspection teams, an issue which we will discuss below. From the standpoint of technology, however, it may be that there are methods and approaches that could contribute to verification confidence while at least somewhat *reducing* the need to rely upon wide-ranging "boots on the ground" investigation by international inspectors. (If some method for airborne scanning for subtle radionuclide contamination were available, for instance, it could be combined with an aerial surveillance regime analogous to the multilateral 1992 Treaty on Open Skies,[18] using broad-area surveillance in the DPRK in order to increase confidence that no undeclared sites remained.)

Apart from acknowledging the value that such technological innovations could have in increasing both verification confidence and the "negotiability" of a KDT, however, this paper will hereinafter leave the question of elimination and verification technology aside. For present purposes, we will assume that elimination is a manageable challenge, and that verification-related monitoring and investigative challenges will have to be addressed through conventional inspection authorities (*i.e.*, "boots on the ground"). To the extent that this is the case, the main V&E challenges for DPRK denuclearization are *political* and *procedural*, rather than technical.

G. *No Treaty Precondition*

This paper also assumes that negotiation and implementation of a KDT would *not* have to be delayed by waiting for a peace treaty to be negotiated between the DPRK and the United States and/or the ROK. Officials in Pyongyang have from time to time seemed to suggest that achievement of a peace treaty to formally end the hostilities of the Korean War—a step that has not hitherto been possible, even though the fighting actually came to an end several decades ago—must necessarily precede serious denuclearization talks. This, however, is not the case.

It may well be possible for a KDT to be negotiated and implemented *in parallel* with other aspects of a hypothesized general improvement of relations– *i.e.*, with denuclearization proceeding at the same time as progress is made on other issues, among them the question of a peace treaty. Even if this is not possible, moreover, there is ample precedent for denuclearization and international verification agreements *without* a peace treaty. The IAEA, for instance, had some considerable verification experience in the DPRK in the 1990s after the DPRK's negotiation of a safeguards agreement after acceding to the NPT, and U.S.

[18] Treaty on Open Skies (March 24, 1992), *available at* http://www.osce.org/library/14127.

experts were invited to verify the limited "disablement" activities DPRK officials undertook at Yongbyon in 2008. There is also precedent for DPRK-ROK agreement on denuclearization and mutual inspections, also without any requirement of a prior peace treaty. The two Koreas agreed to establish a short-lived Joint Nuclear Control Commission (JNCC) pursuant to the Joint Declaration on the Denuclearization of the Korean Peninsula in 1992.[19] (This body subsequently collapsed, but the DPRK claimed at the time that this was due to the conduct of the joint U.S.-ROK "Team Spirit" military exercises,[20] not for want a peace treaty.) The lack of a peace treaty, therefore, clearly need be no obstacle to achievement and implementation of a KDT.

H. *Assumptions About These Assumptions*

Finally, this paper assumes that the above assumptions represent what are effectively *sine qua non* conditions for a meaningful and successful denuclearization agreement. If, for example, the agreement did not appear to be aimed at the genuinely verified elimination of the DPRK's nuclear programs and failed to provide inspection authority commensurate to this challenge, if an attempt were made to prescribe force postures beyond the Korean Peninsula itself, if South Korea were not a full partner to the deal, if the agreement were not subjected to formal ratification procedures, or if weaponization V&E were not done by or under the close supervision of NPT weapon-state experts, our hypothetical KDT would likely represent an inadequate and unsustainable *faux* "resolution" of the nuclear crisis.

(The only potential exception to this final meta-assumption concerns the possibility of the DPRK being permitted to retain a single nuclear power-generation facility under rigorous international safeguards by the IAEA—and perhaps also national observers from Six-Party partner governments—and subject to international fuel-supply and fuel-return requirements analogous to what even U.S. President George W. Bush was in theory willing to accept in the Islamic Republic of Iran [hereinafter Iran] with regard to its Bushehr reactor.[21] The irreducible danger of seizure and separation of plutonium from partially-irradiated reactor fuel in any such facility[22] would certainly make such a "Bushehr option" a decidedly weak, second-best approach, and for this reason it might be very hard—or perhaps impossible—to achieve diplomatic agreement on this. Nevertheless, as an analytical matter, the fact that such an exception was apparently considered acceptable in Iran makes it difficult to rule this out, *a priori*, in the DPRK context. If Pyongyang's enrichment and reprocessing capabilities were definitively eliminated, and if verification procedures of sufficient intrusiveness to minimize the risk of undeclared activities existing elsewhere in the DPRK were agreed and successfully implemented, it remains at least *conceivable* that a carefully-structured "Bushehr option" might prove negotiable for the DPRK.)

---

19 *See* Joint Denuclearization Declaration, *supra*, at ¶ 5 (mandating establishment of JNCC).

20 *See generally, e.g.*, Nuclear Threat Initiative, "Joint Declaration of South and North Korea on the Denuclearization of the Korean Peninsula," background paper and chronology (undated), *available at* http://www.nti.org/treaties-and-regimes/joint-declaration-south-and-north-korea-denuclearization-korean-peninsula/.

21 *See, e.g.*, "Russia ships nuclear fuel to Iran," *BBC* (December 17, 2007) (quoting Bush on Russian fuel supply), *available at* http://news.bbc.co.uk/2/hi/7147463.stm.

22 *See* Henry Sokolski, "Reactors and Bombs," *Weekly Standard*, vol. 17, no. 19 (January 30, 2012) (pointing out that even light-water nuclear reactors "can be copious producers of plutonium suitable for nuclear weapons"), *available at* http://www.weeklystandard.com/articles/reactors-and-bombs_617429.html.

The following pages will explore lessons that might be learned in the DPRK context from various other countries' experiences with arms control negotiation, and will help further explain the reasoning behind some of these assumptions.

II. *Structure and Scope of a Possible Agreement*

A. *Lessons from U.S.-Soviet Practice?*

(1) *Challenges of Symmetry*

The most significant human experience to date with strategic negotiation over nuclear weapons issues has been between the nuclear superpowers: the United States and the Soviet Union (now Russia). Their bilateral negotiations over nuclear weapons, arms control, and disarmament go back to the earliest years of the nuclear era, in which Washington and its allies argued endlessly with Moscow and its allies over the "Baruch Plan" proposed by the United States for international control of nuclear technology.[23] The two superpowers could not agree on that, but they subsequently led the negotiation of the Limited Test Ban Treaty (LTBT) in 1963.[24] They were also the prime movers and principal drafters of the NPT in 1968, and their own bilateral strategic talks have dominated the arms control world, from the Strategic Arms Limitation Treaty (SALT I) of 1972,[25] through the Strategic Arms Reduction Treaty of 1991[26] at the end of the Cold War, and to the so-called "New START" agreement in force today.[27] Given this nuclear negotiating experience, it thus seems reasonable to ask what present-day DPRK nuclear negotiations can learn from the history of U.S.-Soviet/Russian arms control.

One difficulty with drawing lessons from the superpower experience, however, stems from the rough nuclear symmetry that obtained between them during (and since) the Cold War, and the very great degree to which their nuclear postures and huge arsenals made the two parties *unlike* any other nuclear weapons possessors. Because of their symmetry, negotiations between them could proceed on a generally reciprocal basis, as between peers. At the same time, because of their *uniqueness* as nuclear mega-powers—each with an arsenal that at its peak contained *tens of thousands* of weapons, deployed on a range of intercontinental-range delivery systems—they were well-positioned to lead the negotiation of multilateral nuclear arrangements such as the LTBT and the NPT; the really important questions were, in effect, decided between them, defining the limits of what could be accomplished, while their Cold War alliance relationships permitted them to bring a great many other states along with them almost by fiat.

---

23 *See, e.g.*, "Statement by the United States Representative (Baruch) to the United Nations Atomic Energy Commission," June 14, 1946, *in* U.S. Department of State, *Documents on Disarmament: 1945-1959, Vol. I*, (Washington, DC: Department of State Historical Office, 1960), at 7.

24 Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space, and Under Water (August 5, 1963), *available at* http://www.state.gov/www/global/arms/treaties/ltbt1. html#2.

25 Interim Agreement Between the United States of America and the Union of Soviet Socialist Republics on Certain Measures With Respect to the Limitation of Strategic Offensive Arms (May 26, 1972) [hereinafter SALT I], *available at* http://cns.miis.edu/inventory/pdfs/aptsaltI.pdf.

26 Treaty Between the United States of America and the Union of Soviet Socialist Republics on the Reduction and Limitation of Strategic Offensive Arms [START] (July 31, 1991), *available at* http://www.state.gov/www/global/arms/ starthtm/start/start1.html.

27 Treaty Between the United States of America and the Russian Federation on Measures for the Further Reduction of Strategic Offensive Arms (April 8, 2010) (entered into force February 25, 2011) [hereinafter New START], *available at* http://www.state.gov/documents/organization/140035.pdf.

These structural dynamics of symmetry between the principal parties and *asymmetry* between them and everyone else, however, probably limit the potential applicability of U.S.-Soviet/Russian arms control lessons to Korean denuclearization. At its heart, Korean denuclearization is a negotiation aimed at strategic accommodation between three states each in *very* different circumstances: (a) the DPRK, which possesses nuclear weapons but has few other aspects of national power; (b) the ROK, which is an NPT *Non*-Nuclear-Weapon State (NNWS) but which is emerging as a global economic powerhouse, has a growing political importance in the international arena, and is acquiring an increasingly capable conventional military; and (c) the United States, which remains a global superpower in both economic and conventional military terms, as well as possessing a very large residual nuclear arsenal even after decades of post-Cold War reductions. Even if one were to ignore the other Six-Party partners—Japan, Russia, and China, whose involvement in negotiating a KDT would likely have to be significant—it is clear that an agreement between these three very *unlike* principals could not be based upon the kind of overall symmetry and basic reciprocity that has characterized United States treaties with the Soviets and Russia.

For this reason, a successful KDT would have only a *limited* or *bounded* symmetry, and could *not* be based upon overall, aggregative reciprocity between all the negotiating parties. A *degree* of symmetry, however, could be salvaged if the agreement were limited to matters within the Korean Peninsula itself: the core of a denuclearization deal could be based upon symmetry and reciprocity to the extent that it prohibited *anyone* from possessing nuclear weapons or any sort of fissile material production capabilities on the Korean Peninsula, and provided international verification mechanisms capable of demonstrating all parties' adherence to this rule. This approach would emphatically *not* be symmetrical with regard to extra-Peninsular forces possessed by countries other than the DPRK and ROK, though DPRK officials have previously called—albeit perhaps only for propagandistic and either negotiation-preclusive "poison pill" purposes, or (more optimistically) as bargaining "trade bait"—for verification inspections of U.S. bases in Japan or nuclear weapons facilities in the United States itself.[28] A KDT might yet be feasible, however, if negotiated on the basis of a general form of nuclear symmetry on the Peninsula itself.

This issue of local symmetry, however, raises a question about nuclear electricity generation. The two Peninsular principals—the DPRK and the ROK—are *not* similarly situated in this respect, making strict symmetry along this axis both difficult to achieve and in fact inappropriate. Seoul has a large and sophisticated peaceful nuclear power industry, and has even emerged as an important player in international markets for power-generation technology, recently winning a significant competition to provide light-water nuclear reactors to the UAE.[29] By contrast, Pyongyang has not hitherto possessed any nuclear facility that is *not* related to its nuclear weapons program, and although it is apparently now building what it claims are peaceful power-generation reactors at Yongbyon and Taechon, few observers believe this, not least because the DPRK's electrical grid seems entirely unable to handle the anticipated output.[30] Pyongyang's emergence as a supplier on the international nuclear stage,

---

28 *See, e.g.*, Choe Son Hui, "Efforts by the DPRK Government to Normalize Relations Between the DPRK and the U.S.," *in Aspen DPRK-USA Dialogue*, *supra*, at 51, 53.

29 *See, e.g.*, Amena Bakr, "South Korea wins landmark Gulf nuclear power deal," *Reuters* (December 27, 2009), *available at* http://www.reuters.com/article/2009/12/27/us-emirates-korea-nuclear-idUSLDE5BQ05O20091227.

30 *See, e.g.*, Marianne Lavelle, "North Korea: Nuclear Ambition, Power Shortage," *National Geographic* (December 20, 2011) ("North Korea's electric grid is ill-equipped, and likely would need massive

moreover, has apparently so far been limited to promoting nuclear weapons proliferation—such as by supplying uranium centrifuge feedstock to Libya[31] and a plutonium-production reactor to Syria,[32] and perhaps even by engaging in some kind of nuclear weapons collaboration with Pakistan beyond simply receiving Pakistani uranium enrichment technology.[33]

The degree to which the Peninsular principals are *unlike* with respect to civilian nuclear power endeavors, therefore, will limit a KDT's ability to operate symmetrically in this regard. Because of their long and exclusive association with Pyongyang's weapons efforts, existing DPRK nuclear facilities would need to be dismantled in order to provide real verification confidence. If it ended up being decided to permit the "Bushehr option" of a closely-supervised, single-point power generation facility in North Korea operated on a fuel-supply and fuel-return basis—a possibility apparently envisioned in the Joint Statement agreed by the Six-Party participants in September 2005, which described them as being willing to "discuss, at an appropriate time," the issue of providing the DPRK with a light-water nuclear reactor[34]—this would have to *follow* successful conclusion of the KDT's international V&E mission, and the establishment of a robust and effective ongoing safeguards and monitoring process.

(2) *Caps Versus "Zero"*

Another challenge in applying U.S.-Soviet/Russian arms control lessons to the Korean denuclearization context has been that most of the nuclear negotiating history between Washington and Moscow has concerned arms *limitations* or *reductions*, rather than arms elimination. It is one thing to negotiate *keeping* some states at the point of "nuclear zero," as the NPT has aimed to do with all but five of its States Party, and as a KDT would aim to do with regard to the ROK by effectively *supplementing* Seoul's obligations under Article II and III of the NPT. It is quite another thing, however, to contemplate *bringing* a negotiating party *down* to "zero," which would be the principal objective of a KDT with regard to the DPRK. For this task, U.S.-Soviet/Russian arms control history—or, for that matter, *all* of nuclear arms control history—so far offers few models.

---

upgrades to handle the energy from a nuclear power plant, experts agree."), *available at* http://www.greatenergychallengeblog.com/blog/2011/12/20/north-korea-nuclear-ambition-power-shortage/.

31 *See, e.g.*, Thomas C. Reed & Danny B. Stillman, *The Nuclear Express* (Minneapolis: Zenith Press, 2009), at 277.

32 *See, e.g.*, David Albright, *Peddling Peril* (New York: Free Press, 2010), at 154 & 166-67; David E. Sanger, "Bush Administration Releases Images to Bolster Its Claims About Syrian Reactor," *New York Times* (April 25, 2008).

33 *See, e.g.*, Sharon A. Squassoni, "Weapons of Mass Destruction: Trade Between North Korea and Pakistan," *Congressional Research Service* report RL31900 (March 11, 2004), at CRS-8, note 29 (recounting unconfirmed reports that DPRK experts were in attendance at Pakistan's 1998 nuclear tests), available at http://fpc.state.gov/ documents/organization/30781.pdf; David E. Sanger & William J. Broad, "Pakistan May Have Aided North Korea A-Test," *New York Times* (February 27, 2004) (recounting speculation about nuclear collaboration), *available at* http://www.nytimes.com/2004/02/27/world/pakistan-may-have-aided-north-korea-a-test.html?pagewanted=all&src =pm.

34 Joint Statement of the Fourth Round of the Six-Party Talks (September 19, 2005), *available at* http://www.acronym.org.uk/docs/0509/doc04.htm.

The only U.S.-Soviet/Russian precedent for actual *elimination* is the Intermediate Range Nuclear Forces (INF) Treaty of 1987,[35] pursuant to which the United States and the USSR agreed to entirely prohibit possession of ballistic missiles with a range of between 500 and 5,500 kilometers. Any INF analogy to the Korean situation would be highly imperfect, however, since that treaty was a classically reciprocal and symmetrical arrangement in which recently-undertaken NATO deployments of U.S. Ground-Launched Cruise Missiles (GLCMs) and Pershing II ballistic missiles were essentially traded off against the Soviets' prior emplacement of SS-20 ballistic missiles in Eastern Europe. The Soviets showed no interest in serious negotiation over their SS-20s until *after* those NATO deployments had, as it were, evened the score.

This is not necessarily a reassuring model. The kind of nuclear symmetry that led to the successful elimination of U.S. and Soviet intermediate-range missiles *as an entire class of delivery system* is not present today on the Korean Peninsula, though it *would have* existed today had the United States not unilaterally removed its small stock of non-strategic nuclear weapons from ROK territory in 1991.[36] Considerations of strict symmetry along the lines of the "INF analogy" might thus suggest that nuclear weapons be *returned* to the ROK before being negotiated away in return for DPRK denuclearization. Since such a redeployment is unlikely for both U.S. *and* ROK political reasons, however, KDT negotiators will probably have to content themselves with nuclear bargaining from a position of asymmetric nuclearization.

Nevertheless, because Pyongyang at least *claims* to fear U.S. nuclear weapons—and to suspect that, all evidence to the contrary, some of them have somehow secretly been *kept* in the ROK—it might be possible to imagine a denuclearization agreement on the basis of the sort of Peninsular symmetry discussed above. In effect, Seoul would trade away its *right* to invite U.S. (or any other) nuclear weapons back into the country, in return for which the DPRK would dismantle its existing weaponry and renounce any analogous foreign deployments. Thereafter, *no one* would be permitted to develop or deploy any nuclear explosive devices in the DPRK *or* the ROK, with the Korean Denuclearization Treaty thus serving as a *de facto* Nuclear Weapons Free Zone (NWFZ) for the Korean Peninsula.

Indeed, if it were felt useful to have some notionally greater assurance against foreign nuclear weapons deployments or (re-)proliferation assistance, *other* nuclear weapons possessors—including those (*e.g.*, the United Kingdom, France, India, and Pakistan) not already part of the Six-Party Talks process—could be invited to joint Six-Party nuclear weapon states in signing a special KDT protocol to this effect. Precedent exists for such a provision in NWFZs signed elsewhere, such as the Treaty of Tlatelolco, Additional Protocol II which binds the NPT Nuclear Weapon States, *inter alia*, "not to contribute in any way" to any signatory state's violation of the Latin American NWFZ treaty by developing or permitting the deployment of any nuclear weapons on their territory.[37]

---

[35] Treaty Between the United States of America and the Union of Soviet Socialist Republics on the Elimination of their Intermediate-Range and Shorter-Range Missiles (December 8, 1987), *available at* http://www.state.gov/www/global/arms/ treaties/inf1.html.

[36] *See, e.g.*, Arms Control Association, "Chronology of U.S.-North Korean Nuclear and Missile Diplomacy" (undated), *available at* http://www.armscontrol.org/factsheets/ dprkchron.

[37] Treaty for the Prohibition of Nuclear Weapons in Latin America and the Caribbean (Treaty of Tlatelolco) (February 14, 1967), at Additional Protocol II, *available at* http://www.opanal.org/opanal/tlatelolco/tlatelolco-i.htm; *cf. id.* at Art. 1 (establishing basic obligations for Latin American and Caribbean signatories).

A second potential lesson from the INF Treaty relates to the importance of accompanying elimination provisions with elaborate and intrusive verification mechanisms. INF, after all, created the most comprehensive verification regime ever negotiated until that point, and provided the key conceptual and practical model for the provisions subsequently agreed in START and "New START." In addition to binding the parties to special procedures designed to make it easier for both sides to observe each other's missile activity using technical intelligence means (*e.g.*, reconnaissance satellites), the INF Treaty created mechanisms for on-site inspections—including "baseline inspections" to establish the initial data set, short-notice inspections, visits to closed-out facilities, and observation missions to monitor the destruction of prohibited missile systems pursuant to pre-agreed procedures—and continuous monitoring for more than ten years at the portal and perimeters of missile production facilities. The treaty also established a standing "Special Verification Commission" (SVC), the role of which was to provide

> "a forum for discussing and resolving implementation and compliance issues, for considering additional procedures to improve the viability and effectiveness of the Treaty, and for determining the characteristics and methods of use of inspection equipment as anticipated by Section VI of the Protocol on Inspection."[38]

Operating under this framework, U.S. and Soviet authorities eliminated 2,692 missiles after the treaty's entry into force, with the last covered weapons being destroyed in 1991.

To be sure, the verification requirements for Korean denuclearization are likely to be *more* demanding than those agreed under the INF Treaty. The two sides in that negotiation knew much more about each other's missile infrastructure than is presently known today by outsiders about the DPRK's nuclear weapons program, and in any event ballistic missiles in that context were relatively "knowable" commodities, subject to open-air flight-testing and satellite-visible road-mobile deployments. The INF Treaty, moreover, made no effort to ensure that the United States and the Soviet Union no longer possessed the *ability* to build intermediate-range missiles, nor to verify the elimination of ballistic missile *technology* possessed by either side. That treaty was aimed simply at eliminating specific *models* of missile, and closing the particular factories where they had been produced; both the United States and the Soviet Union still possessed both short-range and intercontinental-range missiles, and remained formidable ballistic missile powers in all other respects.

By contrast, to make a serious attempt at real denuclearization in Korea, verification of compliance in the DPRK—a mountainous country known for its government's assiduousness in protecting and hiding military facilities in deeply-buried underground tunnels concealed from overhead observation—would presumably require procedures much more elaborate and intrusive, not to mention less predictably bounded to officially-declared locations and facilities, than those agreed between Washington and Moscow in 1987. Particularly with rumors now abounding of possible *additional* DPRK nuclear tests conducted in secret, and perhaps supporting the development of tritium-"boosted" nuclear devices[39] involving more advanced design technology and potential weapon miniaturization than previously-assessed systems—developments which, if true, that would come not long on

---

[38] U.S. State Department, "Treaty Between the United States of America and the Union of Soviet Socialist Republics on the Elimination of their Intermediate-Range and Shorter-Range Missiles, undated narrative, *available at* http://www.state.gov/www/global/arms/treaties/inf1.html.

[39] Geoff Brumfiel, "Isotopes hint at North Korean Nuclear Test," *Nature* (February 3, 2012), *available at* http://www.nature.com/news/isotopes-hint-at-north-korean-nuclear-test-1.9972.

the heels of the DPRK's *own* revelation of its long-concealed possession of a fairly sophisticated uranium enrichment infrastructure[40]—the requirements for verifying elimination and adequately assuring the absence of undeclared capabilities in the DPRK context are likely to be very demanding indeed.

Nor, of course, would the verification procedures of a Korean Denuclearization Treaty be *reciprocal* in the sense that INF Treaty provisions were, since in this case neither the ROK nor the United States—nor indeed any Six-Party partner other than the DPRK itself—would be moving to "zero" from a starting point of weapons possession. There might perhaps be DPRK inspection rights in the ROK with an eye to verifying compliance with a prohibition on indigenous, United States, or other foreign nuclear-weapons-related activity there, but the principal inspection and verification burdens would be inescapably asymmetric, falling most heavily upon the DPRK. Officials in Pyongyang might feel this to be "unfair," but it is not: it is merely a structural necessity that arises out of Peninsular asymmetries that in fact *favor* the DPRK, since the ROK currently has no nuclear weaponry and no nuclear weapons infrastructure that could be subject to verified dismantlement.

(3) *An Interpretive and Compliance and Issues Forum?*

As noted, the INF Treaty established a Special Verification Commission (SVC) to provide a forum for discussions of problems that might arise in implementing missile elimination, or over how to interpret the treaty. In practice, moreover, the SVC served as a forum for further negotiating, such as in establishing agreement upon inspection procedures at the continuous monitoring site for the Votkinsk Machine Building Plant in Russia.[41] Building upon this INF model and experience, subsequent U.S.-Russian arms agreements—with the exception of the Moscow Treaty of 2002, which to a great extent piggybacked upon START verification procedures[42]—have usually provided for a similar body. START set up a Joint Compliance and Inspection Commission (JCIC),[43] for instance, while "New START" established its own Bilateral Consultative Commission (BCC).[44] (Indeed, the idea of such a forum goes back at least as far, in U.S.-Soviet practice, as the ABM Treaty, pursuant to which a Standing Consultative Commission [SCC] was established to "consider questions concerning compliance" with that agreement, provide a forum for information exchanges, and discuss "possible changes in the strategic situation which have a bearing on the provisions of th[e] [ABM] Treaty," and for other purposes.[45])

The track record of these bodies is mixed. The ABM Treaty's SCC, for instance, struggled endlessly but was unable to address the noncompliance issue raised by the Soviets' construction of a huge phased-array radar near the city of Krasnoyarsk in the early 1980s.

---

40 *See, e.g.*, Sigfried S. Hecker, "What I Found in North Korea," *Foreign Affairs* (December 9, 2010), *available at* http://www.foreignaffairs.com/articles/67023/siegfried-s-hecker/what-i-found-in-north-korea.

41 *See, e.g.*, U.S. Department of State, "Treaty Between the United States and the Union of Soviet Socialist Republics on the Elimination of their Intermediate-Range and Shorter-Range Missiles," explanatory narrative (undated), *available at* http://www.state.gov/www/global/arms/treaties/inf1.html.

42 *See, e.g.*, U.S. Department of State, "Comparison of the START Treaty [sic], Moscow Treaty, and New START Treaty" (April 8, 2010), *available at* http://m.state. gov/md139901.htm.

43 START, *supra*, at Art. XV.

44 New START, *supra*, at Part Six.

45 Treaty Between the United States of America and the Union of Soviet Socialist Republics on the Limitation of Anti-Ballistic Missile Systems (May 26, 1972) (entered into force October 3, 1972) (terminated June 13, 2002), at Art. XIII(1), *available at* http://cns.miis.edu/inventory/pdfs/ aptabm.pdf.

U.S. officials began raising the Krasnoyarsk problem at the SCC in 1983, but it was not acknowledged by the Soviets to have been a treaty violation until October 1989—by which point the Berlin Wall had fallen and the Soviet Union itself was well into its own internally-generated process of regime change.[46] The JCIC established under START, moreover, was unable to address a number of compliance concerns raised therein, though it did resolve others. As reported by the U.S. State Department, "a number of long-standing compliance issues … remained unresolved" when START itself expired in December 2009.[47]

Nevertheless, for all their faults—and of course it would be unreasonable for a mere bilateral discussion forum to solve compliance problems, such as the Krasnoyarsk radar, that the violator does not *want* resolved—such bodies have clearly been found more useful than useless in U.S. and Russian practice, suggesting a potential lesson for Korean denuclearization. The 1994 Agreed Framework negotiated between the DPRK and the United States, pursuant to which Pyongyang was to freeze its nuclear program in return for fuel oil and other assistance and the eventual provision of two light-water nuclear reactors, lacked any such discussion forum for addressing interpretive and compliance issues. No one would attribute that agreement's collapse to this deficiency, of course. (Its failure clearly went deeper than that, and was cemented by the U.S. discovery of Pyongyang's secret uranium enrichment effort, which traduced an agreement reached between the DPRK and the ROK in 1992 which had been incorporated by reference into the 1994 Agreed Framework.[48]) Nonetheless, having some kind of dispute resolution forum akin to the SCC, SVC, JCIC, or BCC might have been useful.

It must here be observed, however, that the DPRK's track record in other such analogous fora leaves much to be desired. A system for periodic meetings to discuss interpretive, compliance, and other issues, after all—as well as an international monitoring mission, the Neutral Nations Supervisory Commission (NNSC) to verify the absence of military reinforcement in the DPRK and ROK—was set up by agreement with the DPRK after the ceasefire that ended hostilities in the Korean War of 1950-53. The functions of the Military Armistice Commission (MAC) included that of investigating and settling through negotiations any violations of the armistice agreement that had ended the conflict, and of conducting such other negotiations as might be necessary in order to supervise the proper functioning of the armistice agreement. As ably chronicled by Chuck Downs and others, however, the DPRK routinely used the MAC process for grandstanding and disruptive tactics. (As for the NNSC, its operations in the DPRK were stymied at every turn by DPRK officials, and by 1957 it had effectively ceased to function, although it remained notionally in existence for years thereafter.)[49]

---

46 *See, e.g.*, Federation of American Scientists, "Anti-Ballistic Missile Treaty Chronology" (undated), *available at* http://www.fas.org/nuke/control/abmt/chron.htm.

47 U.S. Department of State, *Adherence to and Compliance With Arms Control, Nonproliferation, and Disarmament Agreements and Commitments* (July 2010), at 8, *available at* http://www.state.gov/documents/organization/145181. pdf.

48 Paragraph 3 of the Joint Declaration on the Denuclearization of the Korean Peninsula calls for the DPRK and ROK not to possess uranium enrichment and nuclear reprocessing facilities. Joint Denuclearization Declaration, *supra*, at ¶ 3. Under the 1994 Agreed Framework, the DPRK pledged to "consistently take steps to implement the North-South Joint Declaration on the Denuclearization of the Korean Peninsula." Agreed Framework, *supra*, at Part III(2).

49 Chuck Downs, *Over the Line: North Korea's Negotiating Strategy* (Washington, D.C.: AEI Press, 1999), at 98-110.

Another historical precedent might be found in the Joint Nuclear Control Commission (JNCC) that was established pursuant to the 1992 Joint Declaration on the Denuclearization of the Korean Peninsula between the DPRK and the ROK in order to implement the terms of that arrangement.[50] That body, however, was never able to reach agreement on an inspection regime for denuclearization—its principal *raison d'être*—after Pyongyang refused to allow mutual nuclear inspections with the ROK. The JNCC collapsed in January 1993, shortly before the DPRK first announced its intention to withdraw from the NPT.[51]

If *these* precedents were to be the model for DPRK behavior in a future consultative forum established pursuant to a KDT, its prognosis might be grim. Nevertheless, these historical precedents are now some years in the past, and it is not preordained that some such forum could not work under a future denuclearization agreement. Indeed, an "Interpretive and Compliance Issues Forum" (ICIF) could itself serve as a kind of confidence-building measure, giving outsiders the opportunity to evaluate Pyongyang's good faith and negotiating seriousness even while accustoming DPRK officials to ongoing engagement. It should also be remembered that the historical precedent of the postwar MAC is not *entirely* dispiriting. Even Downs, for example, concludes that for all its frustrations, the MAC still "performed a vital role as a channel for communication," and that "the process of calling meetings routinely served a number of valuable tension-reducing purposes." In his description, the MAC process, "despite its shortcomings, proved of value."[52]

An additional potential benefit of establishing an ICIF might be its role in at least partly attenuating the road to withdrawal from a KDT, providing an initial alternative to departure if and when compliance or treaty interpretive issues arise between the parties. As for withdrawal provisions in the KDT itself, in order to reduce the danger of confusion and misinterpretation, it would be important to provide a very clear description of the procedural steps a country must take in order for its withdrawal to be legally effective. One of the steps that might be specified would be a sort of "exhaustion-of-remedies" requirement—that is, providing that in order for withdrawal to be effective, the point of grievance in question must first have been raised, and unsuccessfully addressed, in the ICIF.

(It also seems wise to follow the example of treaties such as the NPT, and require not only a delay before withdrawal becomes effective, but also that the party giving notice of such withdrawal officially provide an account of its reasons to the other parties, as well as the U.N. Security Council.[53] The idea here is not to authorize any formal second-guessing of the rationale offered—which must, in the end, be left to the withdrawer's discretion and good faith—but to provide the rest of the world with maximal clarity, giving other countries a chance to assess the potential implications of withdrawal, evaluate the withdrawing country's claims, and have a chance to respond in an appropriate fashion before the move becomes legally irrevocable.)

---

50 *See* Joint Denuclearization Declaration, *supra*, at ¶ 5 (mandating establishment of JNCC).

51 *See generally, e.g.*, Nuclear Threat Initiative, "Joint Declaration of South and North Korea on the Denuclearization of the Korean Peninsula," *supra*.

52 Downs, *supra*, at 114-15.

53 *Cf.* NPT, *supra*, at Art. X(1) ("Each Party shall in exercising its national sovereignty have the right to withdraw from the Treaty if it decides that extraordinary events, related to the subject matter of this Treaty, have jeopardized the supreme interests of its country. It shall give notice of such withdrawal to all other Parties to the Treaty and to the United Nations Security Council three months in advance. Such notice shall include a statement of the extraordinary events it regards as having jeopardized its supreme interests.").

(4) *Geopolitics and Arms Control*

There may be an additional lesson in the history of the U.S.-Soviet nuclear negotiations, however, and one that seems less encouraging with regard to a potential Korean Denuclearization Treaty: the degree to which, historically at least, arms control and disarmament progress has *followed* rather than *preceded* fundamental changes in the political relationship between rival powers. With the single partial exception of the INF Treaty, no U.S.-Soviet arms control agreement ever proceeded into the business of weapons *reductions*—let alone elimination—until *after* the end of the Cold War.

It did prove possible for Washington and Moscow to negotiate certain types of arms limits or prohibitions, as well as agreements—*e.g.*, the 1972 U.S.-Soviet Incidents at Sea Agreement[54]—designed to reduce the hazards attendant to their competitive interaction. But in order for the parties actually to *reduce* arms in a significant way, the fundamental nature of their relationship apparently had to change first.

Even the INF Treaty, moreover—the only exception to the account suggested above—was signed at a point when Soviet General Secretary Mikhail S. Gorbachev had already been in power for two years, and after he had already begun to make it clear (*e.g.*, to the January 1987 Plenary Session of the Communist Party's Central Committee) that the "restructuring" entailed by his *perestroika* reforms would involve a "broad democratization of Soviet society."[55] The conclusion of the INF Treaty did *not* occur against a backdrop of traditional Cold War-style competition and ideological rivalry; change was clearly in the air.

The pregnant question for Korean denuclearization is whether dramatic progress in elimination and verification—akin in some ways to that made between Washington and Moscow *after* the Cold War, but in an essential respect *more* dramatic, since one party would be moving to "nuclear zero" from a *status quo* of weapons possession—can be achieved in negotiations between the United States and the two Koreas *without* something analogous to *perestroika* and democratization having first occurred in Pyongyang. It may perhaps be that this is impossible, with the nature of the political system there ensuring that there remains an unbridgeable gap between what outsiders would need (*e.g.*, with respect to intrusive verification) if they were *really* to verify denuclearization, and what the notoriously cautious and secretive DPRK regime would itself be willing to accept even if it *were* on some level willing to denuclearize. Nevertheless, this question is probably not even answerable without a feel for what a serious denuclearization agreement would *have* to entail, so there remains good reason to explore the likely parameters for a KDT.

B. *Other Lessons*

(1) *Multilateral Conventions*

But the U.S.-Russian nuclear arms control experience is not the only one from which one might learn in exploring the idea of a Korean Denuclearization Treaty. There may be lessons, as well, in the experience of multilateral conventions that have attempted to prohibit or control the spread of weapons of mass destruction.

---

[54] Agreement Between the Government of The United States of America and the Government of the Union of Soviet Socialist Republics on the Prevention of Incidents On and Over the High Seas, (signed & entered into force May 25, 1972), *available at* http://www.state.gov/t/isn/4791.htm.

[55] *See, e.g.*, Archie Brown, *The Gorbachev Factor* (Oxford: Oxford University Press, 1996), at 123.

The Chemical Weapons Convention (CWC)[56] and the Biological and Toxin Weapons Convention (BTWC)[57] both represent attempts to take their respective States Party to the "zero" of abolition by prohibiting entire categories of weapon. Since they are multilateral agreements with all parties' rights and obligations being in the most important respects identical, however, they may provide only limited lessons for a KDT.

DPRK officials would apparently *like* their "denuclearization" negotiations with outside powers to be taking place on such a basis, and have from time to time suggested that DPRK denuclearization can be dealt with only in the context of a *broader*—and genuinely symmetrical and reciprocal—agreement on global nuclear disarmament.[58] Such a "we'll give up ours when everyone else gives up theirs" approach is no doubt rhetorically and politically satisfying, but it clearly does not fit the structural realities, and asymmetries, of the Peninsular situation. (For this reason, some commentators, myself included, have interpreted Pyongyang's position in this regard as indicating the DPRK's fundamental *unwillingness* to accept any feasibly-negotiable denuclearization agreement.[59]) In the context of the limited or bounded symmetry made necessary by the nature of KDT negotiations as between parties that are fundamentally *unlike* even in the main subject matter of their negotiation, DPRK denuclearization cannot simply emulate the CWC or BTWC in imposing identical rules upon all signatories.

Nevertheless, since only a minority of parties to these conventions had chemical or biological weaponry in the first place—with the result that their (symmetrical) prohibition rules compelled *some* countries to disarm while not meaningfully affecting others at all—even these treaties may offer some lessons. In particular, the CWC combined declaration requirements and internationally-overseen destruction protocols for weapons possessors with what is in essence merely a transparency regime applicable to other parties. The specifics of chemical destruction and the verification mechanisms employed by the Organization for the Prohibition of Chemical Weapons (OPCW) are to some degree unique to that form of weaponry, of course. KDT negotiators may be able to take heart, however, at least from the fact that there exists a precedent for a technically symmetrical treaty that obliges *some* of its parties completely to destroy an existing stock of weaponry and its associated infrastructure under international verification, while imposing merely transparency requirements on others.

Additional—and in some ways more interesting—lessons may be suggested by the NPT, which is *not* a flatly prohibitory regime and has no dismantlement provisions, but which explicitly embraces a two-tiered structure in which *some* parties are barred from

---

56 Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and On Their Destruction (January 13, 1993) [hereinafter CWC], *available at* http://www.opcw.org/index.php?eID=dam_ frontend_push&docID=6357.

57 Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction (April 10, 1972), *available at* http://www.opbw.org/convention/documents/ btwctext.pdf.

58 *See, e.g.*, Ri Gun, "National Defense Policy, Dialogue and Negotiation," *in Aspen DPRK-USA Dialogue*, *supra*, at 40; "Talk Between Kim Jong-Il and Chinese Premier Wen," *Tongil News* (October 5, 2010) [translation courtesy of U.S. Committee for Human Rights in North Korea] (recounting that denuclearization was a last request of Kim Il Sung); *see also*, *e.g.,* "Peaceful Offensive Following Kim Il-Sung's Three Wishes," *Tongil News* (October 30, 2010) [translation courtesy of U.S. Committee for Human Rights in North Korea].

59 *See, e.g.*, Ford, "North Korean 'Denuclearization' After Kim Jong-il," *supra*.

possessing nuclear weaponry and others are not.[60] In broad conceptual form, a KDT would function like the CWC *within the Korean Peninsula*, inasmuch as it would require possessors to dismantle a now-prohibited form of weaponry and impose merely transparency-based verification rules upon those who did not have them to start with. Farther afield, however, a KDT would function more like the NPT, imposing prohibition rules upon some parties (*i.e.*, the Korean partners) but leaving others' arsenals unaffected except insofar as possessors—much like under the NPT's Article I—would be obliged not to assist the Peninsular parties with nuclear weapons development or supply them with such devices. (In addition, as noted above, the NWFZ-like aspects of a KDT would bar possessor states from *bringing* weapons to the Peninsula, and prohibit the Koreas from inviting such deployment.) Such a combination of a generally CWC-like and NPT-like structure—marrying the prohibitory and dismantlement focus of the CWC to the two-tiered structure of the NPT in order to take account of geopolitical realities—may be a promising general model for our hypothetical KDT.

(2) *Special Verification & Elimination Cases*

As indicated, one weakness of the NPT as a model is that its structure in no way envisioned elimination and its associated verification tasks. That is not to say, however, that the IAEA and other international verification institutions have never had any role in nuclear verification work in connection with trying to bring NPT *non*-parties into the NPT framework, or to bring violators back into compliance. It has, and we may thus be able to learn some lessons from those episodes too.

(a) *South Africa*

In South Africa, as we have seen, nuclear weapons elimination was undertaken by the South African government itself, shortly before the end of the *apartheid* regime. International verifiers were invited only at later stages, after weaponization-related "sanitization" had been carried out by South African officials. South Africa acceded to the NPT in July 1991, having already dismantled its weapons program, and permitted the IAEA to visit in November of that year. To ensure that all potential bomb material was accounted for, IAEA inspectors spent many months painstakingly verifying South African figures for uranium production, and conducted widespread environmental sampling in order to check for signs of plutonium work. (None was found.)[61]

With the exception of two deep underground shafts dug for purposes of weapons testing, however—the destruction of which was ultimately overseen by IAEA verifiers—the Agency was only informed after the fact about South Africa's destruction of its weapon-related hardware. Indeed, South Africa did not at first even admit, even to the IAEA, that it had possessed a nuclear weapons program, let alone six actual nuclear weapons; this was kept secret until 1993. After President F.W. de Klerk publicly revealed the previous existence of these weapons aspects of his country's program, however, IAEA inspectors were permitted to examine program logbooks and dismantlement records, to see some destroyed or partially-

---

60 NPT, *supra*, at Arts. I, II, & IX(3) (providing different obligations for nuclear weapon states and non-nuclear-weapon states, and defining the former as those that had "manufactured and exploded a nuclear weapon or other nuclear explosive device prior to 1 January 1967").

61 *See, e.g.*, Waldo Stumpf, "South Africa's Nuclear Weapons Program: From Deterrence to Dismantlement," *Arms Control Today* (December 1995/January 1996), at 6-7, *available at* http://www.armscontrol.org/system/files/ACT_South% 20Africa_9601.pdf.

destroyed weapons-related components, to visit the facilities involved and interview personnel there, and to compare dismantlement records to what the Agency already knew about the program's fissile material balances.[62]

For the reasons suggested earlier, however, the South African model probably has only very limited potential as a model for Korean denuclearization. The National Party-run *ancien régime* in South Africa was by the point of its nuclear dismantlement already in its waning days, with the IAEA's first visit coming nearly two years after de Klerk's first meeting with the imprisoned Nelson Mandela, and more than eighteen months after the government had released Mandela, legalized both the African National Congress (ANC) and the Pan-Africanist Congress (PAC), ended the country's state of emergency, and eased most *apartheid* laws. This context of ongoing regime change and democratization surely influenced outsiders' willingness to accept South Africa's claim of complete weapons-related dismantlement, as well as Pretoria's own willingness to *accept* what was in effect an "anytime, anywhere" mandate for IAEA inspectors charged with after-the-fact verification. Since part of the *point* of de Klerk's dismantlement decision was presumably to keep a future ANC government from having nuclear weapons, moreover, Pretoria *itself* had a strong incentive to ensure that the process was genuine and complete.

Unfortunately, these trust-conducive conditions would not obtain in the DPRK in the context we have presumed for a KDT. To begin with, the DPRK has a history of nuclear deception and violation of past nuclear agreements with other powers—having at one point or another failed to honor, as I have noted earlier and elsewhere,[63] essentially every nuclear promise it has ever made. For purposes of this paper exploring the possibilities of a Korean Denuclearization Treaty, moreover, I have assumed that regime change in Pyongyang—either in the self-dissolving Soviet or South African mode, or by any other means—is *not* pursued as a means of increasing outsiders' verification confidence. Even *without* considering the greater technical challenges of verification in the DPRK—*e.g.*, Pyongyang's possession of both plutonium- *and* uranium-based weapons programs, the DPRK's history of involvement in foreign nuclear proliferation, and Pyongyang's fondness for deep underground tunneling, none of which were complications faced in South Africa—this political context makes the DPRK situation a more challenging verification case.

Nonetheless, the DPRK case might be *easier* than South Africa was in one particular respect, at least: international weaponization-related V&E work under a future KDT would *not* have to be done on a South African-style "after the fact" basis. The IAEA's *post hoc* analysis in 1993 of South Africa's "self-deweaponization" was necessary because Pretoria had delayed revealing the existence of its weapons program, firstly in order to avoid roiling the domestic political waters while the *apartheid* system was itself being dismantled, and also in order to avoid being depicted as a "nuclear outlaw" like the Saddam Hussein regime then in power in Iraq.[64] (It had been discovered just after the Gulf War of 1991 that Iraq had been surprisingly close to building a nuclear weapon, leading to an outpouring of international alarm and nonproliferation concern. This was a coincidence of timing that clearly did F.W. de Klerk's contemporaneous dismantlement agenda no favors.) These particular reasons for secrecy and delay are not of a sort, however, that are likely to affect the DPRK, which seems in no danger

---

62 *See, e.g.*, Adolf van Baeckmann, Garry Dillon, & Demetrius Perricos, "Nuclear Verification in South Africa," *IAEA Bulletin* (January 1995), at 42, 47-48, *available at* http://www.iaea.org/Publications/Magazines/Bulletin/Bull371/37105394248.pdf.

63 Ford, "Challenges of North Korean Nuclear Negotiation," *supra*, at 64-67 & 69.

64 *See* Stumpf, *supra*, at 7.

of deliberately abandoning its current constitutional structure, has had no qualms about boasting of its "nuclear deterrent," and appears less to *fear* than actually to *relish* the image of a nuclear outlaw.

More importantly, however, there is little need in the DPRK to shield deweaponization from international observation, and powerful reason not to. As we have seen earlier, the IAEA is, for various reasons, *not* an optimal institution for handling weaponization-related V&E work. It is open to question, therefore, whether it would actually have been appropriate for IAEA inspectors to involve themselves in South African weapon dismantlement in the first place. Perhaps fortunately for the DPRK case, however, no such proliferation-risky IAEA role is necessary. As outlined in Part I of this paper, the best way to handle weapons-related V&E work in the Korean Peninsula is through the involvement of international verifiers from Six-Party partners who are also NPT Nuclear Weapon States. NWS verification of these most sensitive aspects of DPRK dismantlement in real time and under pre-agreed destruction protocols would simultaneously minimize onward proliferation risks and maximize verification confidence.

NWS involvement is thus clearly optimal from an outsiders' perspective. There is reason to believe, furthermore, that it would not be unduly problematic from the DPRK's perspective either—at least if one presumes that Pyongyang is indeed acting in good faith in accepting a denuclearization deal in the first place. With neither porous international organizations such as the IAEA nor NPT Non-Nuclear-Weapon States (NNWS) in any way involved in this aspect of the denuclearization process, the DPRK would have no need to shield the details of its weaponization work from international verifiers. All the relevant V&E experts, after all, would come from states—specifically, the United States, Russia, and China—that already have weaponization knowledge and technology notably more advanced than Pyongyang possesses: the process would "teach" them, in a proliferation sense, nothing they did not already know. (It is conceivable that Russian and/or Chinese authorities might end up being embarrassed by the degree to which *their* weapons technology is revealed to have been provided to the DPRK and incorporated into its weaponry, but this is a different question—and not, at any rate, a particular problem for Pyongyang with regard to a KDT.) With the DPRK's own need for nuclear secrecy disappearing with the very implementation of denuclearization, a consortium of Six-Party NWS verification experts would thus seem to be an ideal solution, thus further distinguishing DPRK denuclearization from the South African precedent.

(b) *Libya*

Another interesting potential V&E model is provided by Libya. In connection with a "Track II" dialogue with DPRK officials in 2011, I previously argued the merits of a "Libyan Model" for the DPRK, pursuant to which an isolated regime with a poisonously tempestuous relationship with the outside world can turn that relationship around—ending its diplomatic isolation and creating opportunities for more "normal" economic relations with other states—by relinquishing its Weapons of Mass Destruction (WMD) programs through a collaborative V&E process.[65] This is precisely what Libya did in 2003-04, taking the remarkable step of forswearing WMD development and permitting U.S. and British experts to oversee and participate in the dismantlement of Libya's nuclear and chemical weapons programs.

[65] Ford, "Challenges of North Korean Nuclear Negotiation," *supra*, at 77-79.

In this sense, the "Libyan Model" remains a powerful and attractive alternative one for the DPRK. In the years since Muʿammar al-Qaḏḏāfī's groundbreaking relinquishment of WMD in 2003-04, however, other events—namely, the uprising in Libya in early 2011, and the involvement of a coalition of foreign air forces in helping homegrown rebels overthrow Qaḏḏāfī—have helped make this model appear much less attractive when viewed from Pyongyang. Through DPRK eyes, Libyan WMD relinquishment seems now to be a powerful *anti*-model. Judging from DPRK statements about Libya during the course of 2011,[66] in fact, the events of 2003-04 and 2011 are felt to be causally connected, with Libya being seen as an example of a dictatorship that disarmed itself only to be left defenseless when outside forces intervened. If the DPRK does not wish to suffer Qaḏḏāfī's gruesome fate, the logic seems to run, it must at all costs *retain* the nuclear weaponry Qaḏḏāfī forswore developing.

These apparent DPRK conclusions are both logically and factually flawed, not least because the Qaḏḏāfī regime appeared to be in no immediate danger of actually acquiring nuclear weapons. Libya had procured a great many things from the A.Q. Khan proliferation network—including high-efficiency centrifuges, uranium centrifuge feedstock, and actual weapons designs—but it seems to have lacked the expertise and technical infrastructure to put this to much use, and at the time of elimination a good deal of the gear was simply being warehoused in its original packing crates.[67] Accordingly, there would almost certainly have been no nuclear weapons in 2011 with which to deter foreign involvement in the Libyan Revolution even if Qaḏḏāfī had kept his program. (The greatest nuclear-related danger associated with the intervention, in fact, would have been that of *onward* proliferation—*i.e.*, the risk of this equipment, material, and design information being spirited *out* of Libya to terrorists or other proliferators—and this is a factor that might have helped bring about *faster* and bloodier foreign military involvement, to seize or destroy the entire program as a prophylactic measure as quickly as possible after the popular revolution erupted.) The events of 2003-04 and 2011 are thus *not* causally connected in the way DPRK officials assume them to be, and the "Libyan Model" *of* normalization-through-WMD-relinquishment remains viable.

Even putting aside the merits of the broader "Libyan Model" of politico-strategic rapprochement, however, it may still be possible to learn something useful from the way in which Libyan V&E work was handled in 2003-04, for it represents, in its particular details, an approach that might well have applicability in the DPRK. The bulk of the verification and elimination work in Libya was done on a genuinely collaborative basis between three national governments: Libya, the United States, and the United Kingdom. The IAEA was also involved, however, both in providing an additional layer of international verification observation—*e.g.*, being able to certify that various items were indeed accounted-for and removed from Libya by U.S. and British experts—and in giving the Libyans a degree of political "cover" when "surrendering" program elements to those "imperialist" powers. (The IAEA also oversaw the maintenance of ordinary NPT Article III safeguards on those nuclear facilities that Libya retained because they predated and had not been part of that country's weapons program, such as the research reactor at Tajura—which the United States and

---

66 "Foreign Ministry Spokesman Denounces U.S. Military Attack on Libya," *KCNA* (March 22, 2011) (quoting DPRK official that "'Libya's nuclear dismantlement' … turned out to be a mode of aggression whereby the latter coaxed the former with such sweet words as 'guarantee of security' and 'improvement of relations' to disarm itself and then swallowed it up by force."), *available at* http://www.kcna.co.jp/ item/2011/201103/news22/20110322-34ee.html.

67 *See* Elena Geleskul, "The History of the Libya Nuclear Program: Reasons for Failure," *Security Index*, vol. 15, no. 2 (87) (Spring 2009), at 139, 143.

Russia agreed to help the Libyans convert from highly enriched to low-enriched uranium in order to reduce proliferation risks. [68])

Through the use of a chartered 747 aircraft, a C-17 airlifter from the U.S. Air Force, and a hired commercial seagoing vessel, American and British officials organized the removal of various weapons program elements from Libya—including large canisters of uranium hexafluoride, P-1 and P-2 centrifuge components, and an entire suite of uranium conversion equipment and relevant machine tools.[69] U.S. and British officials were permitted extraordinarily broad *de facto* inspection rights in Libya, being able to visit facilities at their discretion with what turned out to be remarkably good cooperation from the host government.[70] The nuclear weapons designs given to the Libyans by A.Q. Khan himself were flown out of Tripoli in January 2004 by a small U.S. team.

The IAEA played a role in "shadowing" these various cooperative elimination operations, which were all carried out pursuant to detailed procedures negotiated trilaterally, between Libyan, American, and British officials. The Agency's role, however, was carefully nuanced in order to reflect both the political and proliferation concerns involved, and was conducted under "rules of the road" for U.S./UK/IAEA cooperation negotiated beforehand in Vienna between IAEA Director-General Mohammed ElBaradei and U.S. Under Secretary of State John R. Bolton.

This nuancing was most visible with regard to the handover of the weapons designs themselves. U.S. and British experts—and it should be recalled that U.S. and British officials had first seen the Libyan designs during the earlier, *secret* phase of the trilateral WMD negotiations that preceded Qaḏḏāfī's public announcement of a deal in December 19, 2003[71]—were permitted to inspect these documents *in situ* at the office of the head of Libya's nuclear weapons program. This was done in the presence of two representatives of the IAEA. With the U.S. and UK experts having concurred that these were indeed the same documents, a memorandum was hastily drafted and typed to memorialize the proceedings, and then signed by various officials present, after which the documents were handed by the Libyans *to the IAEA representatives*, and then immediately passed along to the Americans before being locked in a briefcase using both U.S. *and* IAEA seals.[72]

This procedure allowed the Libyans to say that they had given the designs "to the IAEA"—and involved the Agency in providing a patina of "international" verification

---

68 *See, e.g.*, U.S. Department of State, Adherence to and Compliance With Arms Control, Nonproliferation, and Disarmament Agreements and Commitments (August 2005) [hereinafter August 2005 Noncompliance Report], at 86, *available at* http://merln.ndu.edu/archivepdf/wmd/State/52113.pdf.

69 *See generally, e.g.*, Sharon A. Squassoni & Andrew Feikert, "Disarming Libya: Weapons of Mass Destruction," CRS Report RS21823 (April 22, 2004), at 3-5 (describing removals), *available at* http://fpc.state.gov/documents/ organization/32007.pdf.

70 *See e.g.*, U.S. Assistant Secretary of State for Verification and Compliance Paula A. DeSutter, interview in *Arms Control Today* (March 12, 2004), *available at* http://www.armscontrol.org/aca/DeSutterInterview.

71 *See e.g.*, "Libya Agrees to Give Up WMD," *PBS NewsHour* (December 19, 2003), *available at* http://www.pbs.org/ newshour/bb/africa/july-dec03/libya_12-19.html.

72 By way of full disclosure, it should be noted that this author was closely involved in all these events, traveling with Bolton to Vienna for the IAEA negotiations and then on to Tripoli to convey their results to the U.S. and British V&E teams then just getting established on the ground. I participated in the handover of the designs, and accompanied the U.S. group carrying Libyan nuclear weapons designs when it flew out of the country a week later.

credibility atop the collaborative trilateral process worked out by Libyan, U.S., and British officials—but it did not change the fact that the elimination work was actually being done by NWS representatives. The IAEA's role was also carefully circumscribed with regard to weaponization information, since pursuant to the Bolton-ElBaradei agreement, the IAEA did not get custody of the weapons designs, and the only two of its officials briefly permitted to see them were French and American nationals who had previously worked in their home countries' nuclear weapons programs and would thus be unlikely to learn anything "new" through such involvement.

Not all the elements of this approach can be applied by analogy to Korea, of course. The details of these arrangements are quite specific to the peculiarities of the Libyan situation, and the only *extremely* sensitive information involved in that case was the weapons design documentation itself. Any future Korean V&E program would presumably be much more complicated and involve many more moving pieces—as well as a somewhat different role for the IAEA, with the Agency perhaps playing a *bigger* role in V&E work for dual-use technology, but surely a *smaller* one with regard to weaponization, on account of the greater range and quantity of sensitive technologies, materials, items, and information likely present in the DPRK.

Nevertheless, the basic structural mechanics of the Libyan V&E example are probably very instructive in the DPRK context. It remains a useful model for the negotiation of collaborative elimination and verification procedures among several national governments, with major elements of this work conducted under IAEA observation. In the Libyan case, moreover, such methods were deemed to have produced adequate verification confidence *without* regime change in Tripoli: after the completion of the V&E mission in 2004, most U.S. and other international sanctions were quickly lifted, U.S. oil companies resumed lucrative contract relationships with the Libyan government, and the United States reopened diplomatic relations.[73] Whatever happened several years later for unrelated reasons, the dramatic *volte face* of Washington's hostile policies toward Libya as a result of WMD relinquishment remains an important precedent.

(c) *Iraq and UNSCOM*

The long and contentious history of WMD and missile inspections in Iraq is well enough known that it needs no extensive treatment here. After Iraq was discovered to have been surprisingly far along the road to nuclear weapons development—progress which apparently came to a halt with Saddam Hussein's quick but crushing defeat and expulsion from Kuwait at U.S. and allied hands in early 1991—visits by the IAEA and a newly-established United Nations Special Commission (UNSCOM) began in mid-1991, operating under the authority of U.N. Security Council.[74] For most of the next decade, with the exception that UNSCOM was institutionally superseded by the U.N. Monitoring Verification and Inspection Commission (UNMOVIC) in 1999,[75] these institutions operated in Iraq under varying conditions of cooperation and non-cooperation from Iraqi authorities. Altogether, though controversies and disputes raged over what Iraq might still have *retained*, these

---

73 *See generally, e.g.*, Ford, "Challenges of North Korean Nuclear Negotiation," *supra*, at 77-78.

74 *See* U.N. Security Council S/RES/687 (April 3, 1991), at op. ¶ 9(b), *available at* http://www.fas.org/news/un/iraq/ sres/sres0687.htm.

75 *See* U.N. Security Council S/RES/1284 (December 17, 1999), at op. ¶¶ 1-2, *available at* http://www.un.org/Depts/ unscom/Keyresolutions/sres99-1284.htm.

institutions oversaw or verified the destruction of considerable quantities of prohibited Iraqi material.[76]

The Iraq V&E case would seem to provide only limited lessons for purposes of exploring the possibility of a negotiated Korean Denuclearization Treaty, however. For one, the U.N. process in Iraq was notably coercive, beginning in the wake of Iraq's defeat in war, operating under the legally-binding authority of resolutions adopted by the United Nations Security Council under Chapter VII of the U.N. Charter, and occasionally actually involving the use of military force against the Iraqis—as occurred, for instance, when U.S. and British aircraft bombed a range of Iraqi targets in 1998 after the expulsion of U.N. and IAEA inspectors.[77] (During this period, moreover, "no-fly zones" were also established over parts of Iraq—and rigorously enforced by allied air forces—while "safe havens" were also set up for the protection of Iraq's much-abused Kurdish and Shīʿah Muslim minorities.[78]) These circumstances are ones that are unlikely to apply in the near future in Korea, making Iraq's "coercive model" of V&E work largely inapplicable.

Iraq may yet be instructive in other respects, however. On the positive side, the Iraq case does appear to provide at least an organizational and logistical model, demonstrating how large and sophisticated teams of foreign V&E specialists—drawn from a variety of countries and reflecting hugely diverse expertise across a spectrum of relevant disciplines—can be assembled and can operate in a country on sustained basis and across a wide geographic area. All indications are that any Korean V&E mission would require a large and complex organization, both on the presumptively IAEA-led dual-use side of the effort and for NWS-managed deweaponization. The Iraqi example certainly demonstrates that this is possible.

On the negative side, however, while Iraqi inspections do seem successfully to have constrained Iraq's programs *for so long as these inspections continued*, it took *years* to peel back Iraq's layers of deception and secrecy, and the inspection program did *not* prevent Iraqi officials from planning to reconstitute their various WMD programs the moment the inspection regime was relaxed. As the Iraq Survey Group (ISG) concluded in 2004, it had been the objective of Saddam Hussein's regime to "preserve intellectual capital for WMD" reconstitution after sanctions had been lifted.[79] According to the ISG report, Saddam Hussein's objective was

> "to recreate Iraq's WMD capability … after sanctions were removed and Iraq's economy stabilized … [and] to develop a nuclear capability—in an incremental fashion, irrespective of international pressure and the resulting economic risks—but he intended to focus on ballistic missile and tactical Chemical Warfare (CW) capabilities."[80]

---

76 *See, e.g.*, "Note by Secretary General," S/2003/580 (May 30, 2003) (transmitting letter from UNMOVIC Executive Chairman describing work of mission), *available at* http://www.un.org/Depts/unmovic/documents/S-2003-580.pdf.

77 *See, e.g.*, "Operation Desert Fox 16-19 December 1998," *BBC* (undated), *available at* http://news.bbc.co.uk/ 2/shared/spl/hi/middle_east/02/iraq_events/html/desert_fox.stm.

78 *See, e.g.*, "No-fly zones: The legal position," *BBC* (February 17, 2001), available *at* http://news.bbc.co.uk/2/hi/ middle_east/1175950.stm.

79 *Comprehensive Report of the Special Advisor to the DCI on Iraq's WMD* (September 30, 2004) [hereinafter ISG Report], vol. I, from the "Key Findings (Regime Strategic Intent)," *available at* https://www.cia.gov/library/ reports/general-reports-1/iraq_wmd_2004/index.html.

80 *Id.*

Many former Iraqi officials told the ISG that it had been the regime's intention to reconstitute WMD as soon as sanctions were eased: Saddam "encouraged Iraqi officials to preserve the nation's scientific brain trust essential for WMD," and was reported to have made it his "primary concern" to "retain[] a cadre of skilled scientists to facilitate reconstitution of WMD programs after sanctions were lifted."[81]

To this end, the Iraqis maintained a carefully-preserved "potential breakout capability" in missile manufacture, positioning themselves to reconstitute a longer-range ballistic program after sanctions were lifted, and indeed stepping up illicit equipment procurement after inspectors were expelled in 1998.[82] With regard to chemical weaponry, the Saddam regime maintained throughout the inspection period a secret network of chemical laboratories operated by its intelligence service to research "various chemicals and poisons"—laboratories which "could have provided an ideal, compartmented platform from which to continue CW agent R&D or small-scale production efforts." (Saddam Hussein, after all, "never abandoned his intentions to resume a CW effort when sanctions were lifted and conditions were judged favorable.")[83] Even in the nuclear field, the Iraqis managed to preserve "a limited number of post-1995 activities that would have aided the reconstitution of the nuclear weapons program once sanctions were lifted," "prevented scientists from the former nuclear weapons program from leaving either their jobs or Iraq," and gave such skilled experts pay raises and "undertook new investments in university research in a bid to ensure that Iraq retained technical knowledge" that would support subsequent reconstitution.[84]

Accordingly, although the Iraqi regime "made a token effort to comply with the disarmament process," it

> "never intended to meet the spirit of the [U.N. Security Council's] resolutions. Outward acts of compliance belied a covert desire to resume WMD activities. Several senior officials also either inferred or heard Saddam say that he reserved the right to resume WMD research after sanctions."[85]

In sum, the ISG reported that its investigations had revealed "extensive" evidence suggesting that "Saddam [Hussein] pursued a strategy to maintain a capability to return to WMD after sanctions were lifted by preserving assets and expertise." There was also "clear evidence of his intent to resume WMD as soon as sanctions were lifted."[86]

And the government of Iraq seemed to have real hope that the sanctions system would indeed collapse, and some reason for this belief. According to the ISG, Saddam Hussein's "primary goal from 1991 to 2003 was to have U.N. sanctions lifted,"[87] and the Iraqis were willing to cooperate with inspections only to the minimum degree necessary in order to accomplish this (*i.e.*, in order to avoid providing an excuse for the tightening or prolongation of sanctions). With help from those in the international community who sought to ease

---

81 *Id.*, vol. I, at 44.
82 *Id.*, vol. II, from the "Key Findings (Delivery Systems)."
83 *Id.*, vol. III, from the "Key Findings (Iraq's Chemical Warfare Program)."
84 *Id.*, vol. II, from the "Key Findings (Nuclear)."
85 *Id.*, vol. I, at 49.
86 *Id.* at at 59.
87 *Id.*, vol. I, from the "Key Findings (Regime Strategic Intent)."

sanctions for humanitarian, political, or other reasons, the Iraqis indeed had reason to hope that their travails under the intrusive and coercive UNSCOM/UNMOVIC system would eventually end. As the ISG Report put it, by 2000-01, Saddam had "managed to mitigate many of the effects of sanctions and undermine their international support," leaving Iraq "within striking distance of a *de facto* end to the sanctions regime."[88] By early 2001, the Iraq sanctions system was widely perceived to be on the verge of collapse, with regional trading partners becoming increasingly brazen in defying U.N. restrictions, even to the point of sending official trade delegations to Baghdad.[89]

Through this prism, then, the problem in Iraq may have been less that inspections "didn't work" than that they only "worked" for so long as highly coercive and intrusive sanctions and inspections continued to be forced upon the Iraqi government—and that this coercive system had begun to come apart at the seams by the early 2000s. This, in turn, had the effect of leaving the international community with an unpleasant choice: not between continued sanctions and war, but between war and an increasingly unconstrained Saddam, who seems clearly to have had WMD reconstitution in mind.

This excursion into the pathologies of the Iraqi case may be relevant to Korean denuclearization, in that Iraq suggests the fundamental *political* difficulty of international V&E work when dealing with a deceptive regime. I do not mean merely that outsiders can find it difficult to trust such a government, eliciting *de facto* requirements of verification "certainty" that are hard to satisfy even under the best of conditions. It is also very difficult to conclude that V&E work in such a regime has ever quite *finished*, given the ever-present possibility that some degree of ongoing deception might be wedded to an intention to undertake reconstitution the moment that international attention and scrutiny falter. Seen from the perspective of a potential KDT, therefore, the Iraq case suggests a gloomy potential lesson: even to the extent that negotiated international V&E mechanisms *do* work in dealing with a totalitarian regime, the successful maintenance of any real verification confidence over time will require an extreme degree of global commitment and concern for as long as that regime continues to exist. How *realistic* it is to expect such a fever pitch of attentiveness to last is open to question.

It should also be noted that the issues of human capital preservation and potential WMD reconstitution illustrated by the Iraqi case suggest a further challenge for a KDT: how to keep DPRK nuclear weapons scientists from forming the core cadres of a later reconstitution program, or being the vectors for onward proliferation. This "human capital problem" is one that a KDT will need somehow to address if it is to provide a sustainable long-term solution.

But there are lessons, in this regard, that may be learned from experiences elsewhere. In the longstanding (and expensive) U.S. work to support WMD threat reduction in the former Soviet Union, for instance, there was much concern about the potential of un- or under-employed weapons scientists to contribute to proliferation elsewhere—a fear that seems regrettably to have come true, at least in the case of Iran.[90] Efforts to mitigate these

---

88 *Id.*

89 *See, e.g.*, "Egyptians on trade mission to Iraq as sanctions weaken," *CNN.com* (February 18, 2001), *available at* http://articles.cnn.com/2001-02-18/world/iraq.sanctions_1_sanctions-iraq-policy-embargo-on-iraqi-oil?_s=PM: WORLD.

90 *See* International Atomic Energy Agency, "Implementation of the NPT Safeguards Agreement and relevant provisions of Security Council resolutions in the Islamic Republic of Iran," GOV/2011/65

risks involved, *inter alia*, establishing an International Science and Technology Center (ISTC) in order to help "provid[e] former weapons scientists (FWS) from Russia and the Commonwealth of Independent States (CIS) with new opportunities for sustainable, peaceful employment."[91] This program has sometimes been questioned—on the grounds that it was not always clear whether U.S. support for ISTC projects *replaced* weapons work or simply *supplemented* the income of those engaged in ongoing, if perhaps intermittent, weapons-related projects—but ISTC is generally credited with having played a valuable role in preventing more migration of WMD expertise to other countries. To date, ISTC claims that "over 58,000 weapons scientists and their team members in 765 research institutes spread across Russia/[and other members of the Commonwealth of Independent States] have been involved in ISTC projects and activities."[92] Perhaps not surprisingly, therefore, ROK officials, among others, have suggested that aspects of this ISTC model could be used to help DPRK weapons scientists find "nonmilitary work."[93]

Not all aspects of the ISTC model may be directly transferable to the Korean context, of course. Russia, at least, still retains a sophisticated nuclear arsenal, for instance, and the ISTC program had no ambition to get Moscow out of that line of work entirely, nor to remove the Kremlin's potential ability to reconstitute a nuclear weapons program in the future. Concerns also persist that despite the ISTC's scientific "reemployment" efforts, Russia may have played somewhat fast and loose with its purported abandonment of chemical and biological weaponry, retaining a covert BW program—perhaps a continuation of the biological weapons effort it maintained for years even while a signatory to the BTWC[94]—and apparently developing new anti-personnel chemical compounds.[95]

Because of these issues involving Russia, therefore, the ISTC's experience in *other* former Soviet States may be more relevant than that in Russia, for those states neither retain nuclear weapons today nor have been dogged by the ongoing compliance concerns that tarnish the Kremlin's reputation on chemical and biological weaponry. Nevertheless, the apparent role of a Ukrainian expert formerly involved with the Soviet nuclear weapons program in assisting Iran with multipoint implosion technology usable in the core of a plutonium weapon[96] suggests that the ISTC system has not been foolproof—and that even a little porousness can have grave consequences. Since the objective in the DPRK would be to

---

(November 8, 2011), at ¶ 44, *available at* http://isis-online.org/uploads/isis-reports/documents/IAEA_Iran_8Nov2011.pdf.

91 International Science and Technology Center, "Who We Are" (undated), *available at* http://www.istc.ru/istc/ istc.nsf/va_WebPages/WhoweareEng.

92 *Id.*

93 *See* "North Korea Nuclear Disablement Mostly Complete," *Global Security Newswire* (February 1, 2008) (quoting ROK envoy Chun Young-woo), *available at* http://www.nti.org/gsn/article/north-korean-nuclear-disablement-mostly-complete/.

94 *See, e.g.*, Nuclear Threat Initiative, "Biological" country profile for Russia (November 2011), *available at* http://www.nti.org/country-profiles/russia/biological/.

95 *See, e.g.*, Chemical and Biological Weapons Nonproliferation Program, James Martin Center for Nonproliferation Studies, "The Moscow Theater Hostage Crisis: Incapacitants and Chemical Warfare" (November 4, 2002), *available at* http://cns.miis.edu/stories/02110b.htm; Amy E. Smithson, Vil S. Mirzayanov, Roland Lajoie, & Michael Krepon, "Chemical Weapons Disarmament in Russia: Problems and Prospects," Henry L. Stimson Center report No. 17 (October 1995), *available at* http://www.stimson.org/images/ uploads/research-pdfs/Report17.pdf.

96 *See, e.g.*, David Albright, Paul Brannan, Mark Gorwitz, & Andrea Stricker, "ISIS Analysis of IAEA Iran Safeguards Report: Part II Iran's Work and Foreign Assistance on a Multipoint Initiation System for a Nuclear Weapon," Institute for Science and International Security (November 13, 2011), *available at* http://isis-online.org/uploads/isis-reports/documents/Foreign_Assistance_Multipoint_Initiation_System_14Nov2011.pdf.

effect complete denuclearization and dramatically retard any future reconstitution capability, as well as to prevent onward proliferation, the best answer there would be to *relocate* scientists and technicians to suitable employment elsewhere—presumably abroad in existing Nuclear Weapon States, where their knowledge would not significantly add to the local reservoir of weapons-related knowledge but where the risk of onward proliferation would be greatly reduced.

(d) *The IAEA in Iran*

The IAEA's long—and, at the time of writing, painfully unfinished—experience of conducting inspections in Iran in connection with verifying compliance with nuclear safeguards and the terms of multiple Chapter VII resolutions of the U.N. Security Council may also provide some lessons. To be sure, this IAEA effort had nothing to do with dismantlement: it has been purely a verification and monitoring mission, and its primary role to date has been, in effect, simply to *document* Iran's determination to ignore its obligations. The effort has also primarily involved dual-use technology, rather than weaponization information or items—though in the course of its investigations the Agency has gained access to some weaponization-related information (*e.g.*, Iranian documentation related to the manufacture of hemispherical uranium components, electronic files related to ballistic missile fusing and warhead engineering, and some information about the aforementioned ex-Soviet scientist's role in assisting Iran with the development of spherical high-explosive implosion arrays).[97]

In light of their experiences with Iranian Denial and Deception (D&D) operations, IAEA officials have been candid about their need for more investigative authority even when it comes to their ordinary dual-use verification missions. After the discovery in 1991 of how close *Iraq* had gotten to developing nuclear weaponry even while subject to ordinary IAEA nuclear safeguards inspections for many years, the Agency developed a new "Model Additional Protocol" designed to add to IAEA investigatory authorities in adherent countries.[98] Rather than focusing exclusively on verifying the accuracy of country declarations about specific facilities and activities—that is, simply double-checking that what a government told the IAEA about *things it was willing for the Agency to know about* was in fact correct—the Additional Protocol (AP) moved the IAEA into the business of also attempting to verify the absence of *undeclared* nuclear activities. Since its promulgation in 1997, the AP has come to be regarded as the "state of the art" in nuclear safeguards, though its very intrusiveness has ensured that it remains controversial in some quarters, and some countries have refused to adopt it.

The IAEA's experience in Iran, however, suggests that even the "state of the art" AP is *inadequate* when confronted with D&D activity by a relatively sophisticated and determined proliferator government. The IAEA has shown some ability to penetrate Iranian D&D—especially at first, when Iran sought to conceal almost all of the nature and breadth of

---

97 *See* GOV/2011/65, *supra*, at ¶¶ 38-45 & Annex, *available at* http://isis-online.org/uploads/isis-reports/documents/ IAEA_Iran_8Nov2011.pdf.In fairness to the Agency, it must be noted that I am aware of no indication that it has not handled this information responsibly – though this does not change my assessment that *in general* the IAEA is an inappropriate institution to be entrusted with weaponization-related technology.

98 International Atomic Energy Agency, "Model Protocol Additional to the Agreement(s) Between State(s) and the International Atomic Energy Agency for the Application of Safeguards," INCFIRC/540 (Corrected) (September 1997), *available at* http://www.iaea.org/Publications/Documents/ Infcircs/1997/infcirc540c.pdf.

its secret nuclear activities—with inspectors winkling out more information than Iranian officials appear to have expected, to Tehran's sometimes considerable embarrassment. Initial Iranian falsehoods about nuclear activity at some sites, for instance, were exposed by IAEA environmental sampling techniques that revealed the presence of radionuclides—an investigative methodology that also led to the Agency's exposure of Iran's connections to the A.Q. Khan network through trace elements found on Iranian equipment that connected it to Pakistan.[99]

Iran, however, seems to have learned from these experiences, such as by abandoning early efforts to "sanitize" facilities before IAEA visits and undertaking on at least one occasion thereafter simply to *raze* a building and scoop away the surrounding topsoil before IAEA inspectors were permitted to visit the spot.[100] On other occasions, including as recently as February 2012, the Iranians have simply denied access to facilities that IAEA officials wished to visit.[101] Iranian authorities also seem to have learned simply to refuse to respond to awkward questions, now preferring to couple substantive silence with blanket denials of ill intent, rather than risking the embarrassment of yet again having Agency experts pick apart detailed explanations that are inconsistent, wildly implausible, and/or empirically falsifiable.

(It must also be added that the scope of what Tehran now seeks to conceal has narrowed considerably from the early days of the Iranian nuclear crisis that began in 2002 with public revelation of the Natanz enrichment facility then under construction. Now freely admitting to—and even bragging about—its fissile material production program, Iran today needs to conceal only the weaponization activity it has been undertaking in order to provide a home for this fissile material. This is much easier than concealing the entire nuclear infrastructure, and suggests yet another reason why real verification confidence in the Korean context would have to include a flat prohibition on the possession of any fissile material production capabilities.)

As a result, despite acquiring information strongly suggestive of the continued clandestine existence of an Iranian weaponization effort—paralleling the country's ongoing development of a fissile material production capability optimized for providing weaponeers

---

99 *Cf.* International Atomic Energy Agency, "Implementation of the NPT Safeguards Agreement in the Islamic Republic of Iran," GOV/2003/75 (November 10, 2003), at ¶¶ 9, 30, & 34 (recounting Iran's claim that "its enrichment programme was indigenous and based on information from open sources," but noting inconsistencies between uranium samples found at two locations and the nuclear material declared in Iranian inventory, and recounting Iranian claim that this contamination resulted from contamination of imported centrifuge components imported), *available at* http://www.iaea.org/Publications/Documents/Board/2003/gov2003-75.pdf.

100 *Compare* GOV/2003/75, *supra*, at ¶ 44 (noting "considerable modification of the premises" at the Kalaye Electric Workshop since the first visit of IAEA inspectors and before environmental sampling was permitted), *with* International Atomic Energy Agency, "Implementation of the NPT Safeguards Agreement in the Islamic Republic of Iran," GOV/2004/85 (November 15, 2004), at ¶ 102 (noting that "vegetation and soil samples collected from the Lavisan-Shian site have been analysed, and reveal no evidence of nuclear material," but that "detection of nuclear material in soil samples would be very difficult in light of the razing of the site" and that "given the removal of the buildings, the Agency is not in a position to verify the nature of activities that have taken place there"); *see also* Institute for Science and International Security, "ISIS Imagery Brief: Destruction at Iran Site Raises New Questions About Iran's Activities" (June 17, 2004) (discussing commercially-available satellite imagery of changes at Lavisan site), *available at* http://isis-online.org/publications/iran/lavizanshian.html.

101 *See, e.g.*, "UN watchdog 'denied access to key Iran site,'" *Al Jazeera* (February 22, 2012), *available at* http://www.aljazeera.com/news/middleeast/2012/02/201222202920481596.html.

with nuclear material—the IAEA remains in some regards as far from completing its investigatory mission in Iran than ever. An inquiry that began in the hope of verifying that all was well, and that the proliferation fears of outside countries were unjustified, moreover, has in practice made Iran's weapons-development push more obvious than ever.

This may have important implications as officials today ponder what authorities would be needed in order to verify a Korean Denuclearization Treaty. Hamstrung by Iranian uncooperativeness in Iran, IAEA officials have admitted that even the authorities provided by the Additional Protocol are insufficient to cope with host government D&D. As it was conceded even by IAEA Director-General Mohammed ElBaradei—a man known more for his eagerness to protect Iran from outside pressure in connection with its nuclear pursuits[102] than for his eagle-eyed rigor as a nuclear verifier[103]—doing verification work in Iran really required authorities *beyond* what the AP provided.[104]

This is no doubt true, and is a lesson that must be borne in mind when shaping a KDT. Nevertheless, so far it has proven very difficult to persuade the DPRK to accept sweeping verification authorities. The issue of how intrusive international inspection authorities must be in the DPRK has long been contentious, both within the U.S. government[105] and in its discussions with Pyongyang.

So far, the DPRK seems to have resisted any suggestion of expansive inspection authorities. As mentioned earlier, U.S. officials presented a three-page verification proposal to the DPRK in September 2008, which envisioned investigative authorities that were indeed quite broad. These included "full access" to all facilities where nuclear materials had at any

---

102 *See, e.g.*, Elaine Sciolino & William J. Broad, "ElBaradei at center of standoff over Iran's nuclear program," *New York Times* (September 16, 2007) (recounting ElBaradei describing himself as proud to be seen as doing "God's work" in protecting Iran from foreign "crazies" who might use its nuclear violations as an excuse for war), *available at* http://www.nytimes.com/2007/09/16/world/africa/16iht-baradei.5.7527308.html.

103 Remarkably, even in late 2009 – at a point when he was apparently suppressing a draft report prepared by his own inspectors that argued precisely to the contrary – ElBaradei still liked to declare to the press that there was "no credible evidence" that Iran was trying to develop nuclear weapons. *Compare, e.g.*, Julian Borger & Richard Norton-Taylor, "'No credible evidence' of Iranian nuclear weapons, says UN inspector," *The Guardian* (September 30, 2009), *available at* http://www.guardian.co.uk/world/2009/sep/30/ iranian-nuclear-weapons-mohamed-elbaradei, *with* William J. Broad & David E. Sanger, "Report Says Iran Has Data to Make Nuclear Bomb," *New York Times* (October 3, 2009), *available at* http://www.nytimes.com/2009/10/04/world/ middleeast/04nuke.html?pagewanted=all.

104 *See* International Atomic Energy Agency, "Implementation of the NPT Safeguards Agreement in the Islamic Republic of Iran," GOV/2005/67 (September 2, 2005) at ¶ 50 ("Given Iran's past concealment efforts over many years, such transparency measures should extend beyond the formal requirements of the Safeguards Agreement and Additional Protocol and include access to individuals, documentation related to procurement, dual use equipment, certain military owned workshops and research and development locations. Without such transparency measures, the Agency's ability to reconstruct, in particular, the chronology of enrichment research and development, which is essential for the Agency to verify the correctness and completeness of the statements made by Iran, will be restricted."), *available at* http://www.iaea.org/Publications/Documents/Board/2005/gov2005-67.pdf.

105 *See, e.g.*, Christopher Ford, "Challenges of Knowing and Not Knowing: Verification Diplomacy and Politics," *New Paradigms Forum* (June 1, 2011) (recounting internal disputes over U.S. verification proposals in 2004), *available at* http://www.newparadigmsforum.com/NPFtestsite/?p=894; Glenn Kessler, "Far-Reaching U.S. Plan Impaired N. Korea Deal: Demands Began to Undo Nuclear Accord," *Washington Post* (September 26, 2008) at A20 (recounting internal disputes over U.S. verification proposals in 2008), *available at* http://kenthink7.blogspot.com/2008/09/nuclear-accord-with-north-korea.html.

point been stored, or where any weaponization-related activity had been carried-out, as well as to "any site, facility or location," whether or not declared by the DPRK, "in order to confirm the absence of undeclared nuclear material, equipment, or related activities." (Broad provision was also made for access to and review of documents, interviews with personnel, and a variety of investigative measurement activities.)[106] DPRK officials, however, apparently rejected this plan.[107]

Though it was subsequently reported that Washington and Pyongyang *had* finally agreed on a verification plan later that year, what actually appears to have been accepted were merely procedures for *starting* verification by focusing initially only upon plutonium-related work at the Yongbyon facility. Investigation of the DPRK's *uranium* program—the U.S. discovery of which had so roiled the diplomatic waters since 2002—was to be put off indefinitely, as apparently was any nuclear verification work *beyond* Yongbyon. (As explained by U.S. Principal Deputy Assistant Secretary of State Patricia McNerney, the idea was "to start" by looking at Yongbyon plutonium because that was "the largest program that we all are aware of.")[108] As of late 2008, therefore, despite all the concerns about uranium enrichment and onward proliferation that had arisen, and despite the DPRK having conducted its 2006 nuclear weapons test on the other side of the country, the negotiated verification process had barely moved beyond the exclusively Yongbyon-focused conceptual paradigm of the 1994 Agreed Framework.[109] (Even the partial "freeze" agreement announced at the end of February 2012, it must also be noted, only appears to apply to Yongbyon, though it does explicitly encompass uranium-related work for the first time.[110]) The difficulty of obtaining DPRK agreement for serious verification inspection authorities in 2008—at a point, it must be noted, that *predates* both Pyongyang's second nuclear test in 2009 and its revelation in 2010 of a sizeable uranium enrichment infrastructure, both of which are facts that make *additional* V&E work all the more necessary—bodes ill for the negotiability of a KDT.

The real lesson of the IAEA's experience in Iran, however, may lie deeper still: in the lesson Iran suggests about the fundamental weakness of voluntary, negotiated inspections where a host government *wishes* to maintain a prohibited capability or continue with prohibited activities. In contrast to Iraq—which is frequently offered by opponents of the Iraq War of 2003 as an example of how inspections can "work" in eliminating WMD programs and preventing their reconstitution—the inspection process in Iran has been a voluntary

---

106 "Verification Measures Discussion Paper," *supra*, at 2-4.

107 *See, e.g.*, Kessler, *supra*.

108 *See* Peter Crall, "U.S., NK agree on draft verification plan," *Arms Control Today* (November 2008), *available at* http://www.armscontrol.org/act/2008_11/DPRKverification.

109 This lack of progress in addressing the growing list of DPRK nuclear activities requiring international verification grew out of the Americans' willingness to duck the issue of uranium and onward proliferation by agreeing to a deal in June 2008 in which Pyongyang would merely "acknowledge" the fact that the United States *had* concerns about these issues. This was hoped to be, as Assistant Secretary of State Christopher Hill explained it to Congress, a foundation on which to build further agreement – "the *basis* for a rigorous process of verifying all of the DPRK's nuclear programs" – but for now, discussing those matters were to be deferred.*See* Mary Beth Nitkin, "North Korea's Nuclear Weapons," *Congressional Research Service* (February 12, 2009), at 14, *available at* http://fpc.state.gov/ documents/organization/120976.pdf; Mike Chinoy, *Meltdown: The Inside Story of the North Korean Nuclear Crisis* (New York: St. Mar- tin's Press, 2009), at 365 & 368 (quoting Hill [emphasis added]).

110 *See* Steven Lee Meyers & Choe Sang-hun, "North Koreans Agree to Freeze Nuclear Work; U.S. to Give Aid," *New York Times* (February 29, 2012), *available at* http://www.nytimes.com/2012/03/01/world/asia/us-says-north-korea-agrees-to-curb-nuclear-work.html?_r=1&hpw.

one,[111] and has been characterized from the outset by great variations over time in Iranian authorities' willingness to cooperate with the IAEA. To be sure, Iran's defiance of the U.N. Security Council and the IAEA has led to the imposition of some international sanctions, but the kind of coercion involved in the *Iraq* case has so far been wholly absent, and sanctions have clearly not persuaded Iran to cooperate as needed, much less actually to suspend its nuclear work. The implications of this lesson in the Korean context seem clear: no negotiated KDT can succeed without a degree of DPRK cooperation and good faith far beyond what Pyongyang has hitherto shown the slightest interest in providing.

III. *Conclusion*

So what have we seen from our examination of the issues and challenges surrounding a Korean Denuclearization Treaty, and our exploration of the essential elements of a successful KDT? To summarize the foregoing analyses, I suggest the following principal points:

- A successful KDT would aim not at the temporization of a mere "freeze," though this could certainly be part of a treaty's phased implementation, but at the ultimate objective of real denuclearization. This denuclearization must be accompanied by verification measures appropriate to the difficult task of creating verification confidence in light of the DPRK's physical and technological situation and its track record of consistent nuclear denial and deception. Verification must comprehensively address not merely the elimination of declared facilities and activities, but also providing reasonable reassurances both against the existence of *undeclared* ones *and* against the possibility of future reconstitution.

- To meet the objective of real denuclearization accompanied by meaningful verification confidence, a KDT must provide for the elimination of all fissile material production capabilities on the Korean Peninsula, and a prohibition upon their return.

- The KDT process must not be treated as a bilateral U.S.-DPRK negotiation, but must involve the ROK as a full partner in all respects—and should also involve the other countries from the Six-Party Talks process (*e.g.*, as verifiers and guarantors). With such differently-situated parties, a KDT could not be symmetrical and reciprocal in the conventional sense, but *should* be so in a bounded or limited way: namely, with regard specifically to the Korean Peninsula. Peninsular parties would be subject to reciprocal obligations to dismantle all facilities associated with nuclear weapons development, abandon and/or forswear fissile material production, and accept international verification of their compliance—though such rules would not affect the DPRK and ROK symmetrically, because only one of them *presently* has a nuclear

[111] Even the genuinely voluntary Libyan renunciation, it must be added by way of further contrast, took place against the backdrop of the Iraq War of 2003, and it is not a coincidence that Muammar Qaddafi made his famous WMD-relinquishment overtures to British intelligence in March of 2003 – the month in which the U.S.-led campaign against Saddam Hussein began. The Libyan leader subsequently indicated this connection to the Iraq invasion on at least two occasions. *See* "Gaddafi: Iraq war may have influenced WMD decision," *CNN* (December 22, 2003), *available at* http://articles.cnn.com/2003-12-22/world/gadhafi.interview _1_biological-weapons-libyan-leader-moammar-gadhafi-hans-blix?_s=PM:WORLD; *see also* August 2005 Noncompliance Report, *supra*, at 85 (quoting March 2004 Qaddafi speech in Sirte in which he said that he had realized that *not* relinquishing WMD could land a country in "big trouble").

weapons program. Non-Peninsular parties would be bound to respect, implement, and guarantee these provisions, as well as to refrain from nuclear weapons deployment in contravention of the *de facto* NWFZ that the KDT would create on the Korean Peninsula.

- In order to ensure negotiation "quality control" and maximize the sustainability of the resulting agreement, a KDT should be subjected to full treaty ratification procedures, at least in the ROK, the United States, and the DPRK itself.

*[**Editor's Note:** For more on KDT approval, and how it might be possible to avoid the political problems of formal DPRK-ROK mutual recognition, see http://www.newparadigmsforum.com/NPFtestsite/?p=1254.]*

- The IAEA would probably play the lead role in verifying the DPRK's dismantlement of fissile material production and other dual-use facilities, with an experts' group from the NPT Nuclear Weapon States involved in the Six-Party process playing an analogous role with regard to weaponization-related dismantlement and verification. (This experts' group could undertake deweaponization itself, or it could simply oversee DPRK work.) All such dismantlement would have to occur under pre-agreed conditions and according to pre-agreed procedures and documentation/observation requirements.

- Though negotiators should be open to creative solutions (*e.g.*, an "Open-Skies"-type approach combined with sophisticated radiological sensor technology) that could ease at least some of the intrusiveness burdens of ensuring against the existence of undeclared facilities and activities, KDT verification procedures would revolve primarily around inspection visits and such technical monitoring and forensic capabilities as are presently available in that connection. KDT implementation should not be delayed in the hope of developing new technical approaches, though nothing would preclude their subsequent incorporation by agreement of the parties.

- In order to create adequate verification confidence, inspection and verification authorities for international inspectors will need to be substantial and far-reaching—exceeding what is provided, for instance, in the IAEA's Model Additional Protocol. The U.S. proposals suggested in this regard in 2008 are not a bad model for such authorities, but a successful KDT will require that they be applied to Korea as a whole rather than simply confined, Agreed Framework-style, within the boundaries of one or more declared facilities.

- A KDT should establish some kind of multi-party forum for discussing such interpretive and compliance issues as may arise during the course of treaty implementation. This body could provide a helpful "first recourse" for addressing problems, and could function in its own right as a sort of confidence-building measure.

- A KDT's withdrawal procedures should provide for notice of intent to withdraw, require written explanation of the reasons for taking such a step, and impose a delay before withdrawal would become effective, during which other treaty parties, and the U.N. Security Council, would have an opportunity to scrutinize and react to the situation. Withdrawal procedures might also specify some kind of "exhaustion of

remedies" requirement, pursuant to which a matter must have been raised at the interpretive and compliance issues forum before it could form an appropriate subject for a withdrawal notice.

- As part of the imperative of providing reasonable assurances against nuclear weapons reconstitution, KDT negotiators should provide some kind of "reemployment" program for Korean nuclear weapons scientists and technicians—preferably abroad, in the NPT nuclear weapon states, where their knowledge would be unlikely to become the locus of onward proliferation.

These are certainly demanding requirements, and there is of course no assurance that a KDT can be negotiated that incorporates these elements—nor even that is can be negotiated at all, since there is little reason at present to believe that the government in Pyongyang is at all serious about denuclearization in the first place. Nevertheless, in order to explore the parameters of the kind of deal that might actually achieve the denuclearization objective, this paper has explored the idea of a KDT on the basis of a working assumption that agreement *is* theoretically possible.

Given the difficulty of negotiating a KDT on these terms, however—and the distrust that has pervaded Korean nuclear negotiations for so many years—it might be sensible for relevant parties to learn to "walk" before trying to "run" with implementation of a full-blown KDT. Specifically, during the period during which a KDT is being negotiated and its implementation is being prepared, much could be gained were the DPRK to agree to the pre-denuclearization implementation of IAEA safeguards on its fissile material production capabilities.

To be sure, conventional nuclear safeguards under the IAEA's INFCIRC/153 process[112] would require that Pyongyang first return to the NPT, from which Pyongyang withdrew in 2003 after having been detected violating that treaty and its nuclear agreements with the United States and the ROK.[113] This would be appropriate *after* successful implementation of a KDT, with regard to whatever peaceful nuclear-related capabilities Pyongyang might subsequently be permitted to possess, since by that point the DPRK would have returned to the status of a Non-Nuclear-Weapon State, but it would not work at the outset of the KDT process when Pyongyang would still retain nuclear weapons. Not *all* safeguards require NPT accession, however, and *pending completion* of KDT implementation, the DPRK could accept safeguards under INFCIRC/66,[114] which does not require treaty membership. (Indeed, there is some precedent for this. Pyongyang agreed in 1977 to apply INFCIRC/66 safeguards to its IRT-2000 reactor, which duly came under IAEA inspections in 1978, at least for a time.[115])

---

112 International Atomic Energy Agency, *The Structure and Content of Agreements Between the Agency and States Required in Connection with the Treaty on the Non-Proliferation of Nuclear Weapons,* INFCIRC/163 (Corrected) (June 1972), *available at* http://www.iaea.org/Publications/Documents/Infcircs/Others/infcirc153.pdf.

113 *See, e.g.*, August 2005 Noncompliance Report, supra, at 87-92.

114 International Atomic Energy Agency, *The Agency's Safeguards System*, INFCIRC/66 Rev.2 (September 16, 1968), *available at* http://www.iaea.org/Publications/Documents/Infcircs/Others/infcirc66r2.pdf.

115 Operations of this reactor were *not* frozen as part of the 1994 "Agreed Framework" between the DPRK and the United States, even though it had already provided spent fuel for use in early DPRK plutonium separation work. *See* Nuclear Threat Initiative, *Country Profile: North Korea* (January 2011), *available at* http://www.nti.org/e_research/profiles/NK/Nuclear/facilities_reactors_assemblies.html. The DPRK

Taking the first step of accepting INFCIRC/66 safeguards on its entire fissile material program—including both its plutonium-separation and uranium enrichment elements—would be a dramatic and perhaps effective way for the DPRK not merely to "jump-start" serious KDT negotiations but to take a first step toward restoring some degree of confidence among outsiders in its good faith and thus the possibility of denuclearization. The more the IAEA learned about these programs, moreover, the more it would be possible to tailor KDT-related V&E activity to the specifics of the Korean situation. (Unsurprisingly, uncertainty about the nature and extent of DPRK activities is a major driver for outsider demands for maximally sweeping verification authorities. Conceivably, such demands could be somewhat reduced if more were known about the DPRK's programs from *in situ* INFCIRC/66 monitoring, and at the very least incoming INFCIRC/66 information could be used to prepare international V&E teams for more efficient and effective collaboration with DPRK authorities.) The INFCIRC/66 process could also have value as a confidence building measure in its own right, helping accustom outside experts to working with the DPRK even while DPRK officials became more comfortable with the presence of such outsiders.

It would be very important, of course, to prevent such an INFCIRC/66 process from distracting from, or delaying, progress on a KDT and the achievement of real denuclearization. As with a "freeze," INFCIRC/66 transparency might play a useful role as a preliminary *part* or early *phase* of an agreement, but it should not be mistaken for a real solution. Negotiators should also be careful to try to structure any such provisions in a way that does not *reduce* the DPRK's incentive for agreement on the core elements of a KDT, lest the search for helpful interim steps ultimately defeat the final objective.

In sum, this paper makes clear that a successful KDT would be very difficult to negotiate, even if one assumes DPRK good faith in approaching "denuclearization" negotiations in the first place. There is certainly no guarantee that any deal is possible, nor that leaders will find the wisdom and courage to insist upon a good one even if it is. If we are serious about a Korean Denuclearization Treaty, however, and if there is any chance of seeing one work, it will probably have to look much like what is suggested here.

* * *

expelled inspectors in 2002. "N Korea to expel UN nuclear inspectors," *The Guardian* (December 27, 2002), *available at* http://www.guardian.co.uk/world/2002/dec/27/northkorea1.