New Developments in Nuclear Non-Proliferation and North Korea’s Nuclear Problem

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Abstract

In 2010, there were important developments in the areas of nuclear non-proliferation, which harbor potential impacts on North Korea’s nuclear problem. After a year of deliberation, on April 6 the Obama administration announced its Nuclear Posture Review (NPR). It is unclear whether the Obama administration’s new nuclear strategy will be able to entice North Korea to denuclelarize. From the perspective of South Korean security, it must be noted that since the outbreak of the North Korean nuclear crisis, there have been fears that the US nuclear umbrella has weakened. On April 8, 2010, the leaders of Russia and the US met in Prague to sign the New Strategic Arms Reduction Treaty, opening a new chapter in nuclear arms reduction. Clearly this treaty will present at international disarmament conferences a new basis from which to call for North Korea to abandon its nuclear programs. But it does not appear that New START will have a direct influence on the North Korean nuclear issue. The 1st Nuclear Security Summit was convened in Washington D.C. from April 12~13, 2010 with great success. The North Korean nuclear issue has long ago moved beyond the Korean peninsula and become a global concern and the current North Korean regime is a target of vigilance for the Nuclear Security Summit in the future. North Korea revealed in November 2010 its sophisticated uranium enrichment facility whose existence had been kept secret by North Korean authorities for many years. The uranium enrichment program will be used to help to establish Kim Jong Eun as successor by being promoted as his own technological achievement.

Keywords: Nuclear Posture Review, New START, Nuclear Security Summit, Uranium Enrichment, North Korea

I. The Obama Administration’s Nuclear Posture Review (NPR)

After a year of deliberation, on April 6 the Obama administration announced its Nuclear Posture Review (NPR). The new NPR not only indicates the future direction

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and guidelines of US nuclear policy for the next 5~10 years, it also can exert enormous influence in maintaining the global non-proliferation regime, one step being the resolution of the North Korean nuclear issue. This NPR lays the groundwork for a new threat-awareness that, while the danger of nuclear war between countries such as the previous US/Soviet Cold War conflict has significantly declined, the threat of nuclear terrorism is on the rise. At the same time, while steering towards President Obama’s vision for “a world without nuclear weapons” as an ultimate goal, it takes the position that the role of nuclear weapons must be reduced.

This most recently announced NPR delivers the following 5 points as the core of its new nuclear policy:

1. To prevent nuclear proliferation and nuclear terrorism,
2. To reduce the role of nuclear weapons in US security strategy,
3. To maintain strategic deterrent capability and security while reducing the nuclear armament,
4. To strengthen regional deterrent capability and keep allies and partners secure,
5. To keep a safe, well-maintained, and effective nuclear force.

The fact that preventing nuclear terror is set as the first goal reflects how deeply concerned the Obama administration is about the possibility of nuclear terrorism.

Regarding the North Korean nuclear issue and the US/ROK alliance, our major interest lies with the second item; that is, reducing the role of nuclear weapons. The NPR establishes that the “fundamental role” of US nuclear weapons is to deter nuclear attacks against the US and its allies, and amends the existing Negative Security Assurance (NSA) to clarify a new, strengthened NSA strategy: “The United States will not use or threaten to use nuclear weapons against non-nuclear weapons states that are party to the Nuclear Nonproliferation Treaty (NPT) and in compliance with their nuclear nonproliferation obligations.”

1. Previous Negative Security Assurance Policy: Conditional NSA

The first time a US administration publicly announced an NSA policy was in 1978 during the Carter administration, in a speech by then-Secretary of State Cyrus Vance at the UN Special Conference on Disarmament. In this speech, Secretary of State Vance stated that “the United States will not use nuclear weapons against any non-nuclear-weapon state party to the NPT or any comparable internationally binding commitment not to acquire nuclear explosive devices,” however, an exception could be made “in the case of an attack on the United States … or its allies, by any state allied to a nuclear-weapon state or associated with a nuclear-weapon state.”

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2. Speech of Secretary of State Cyrus Vance at the 1978 UN Special Session on Disarmament, UN document A/S-10/AC.1/30.
It is because of this exception that the pre-existing NSA has been called a “conditional NSA.” Taking the example of the Korean peninsula, the key effect of the “conditional NSA” is that even if North Korea were to join the NPT and faithfully follow international norms, the US could still retaliate against it with nuclear weapons if it attacked the US or invaded South Korea. This condition, as a strategic link backing up America’s pledge of a “nuclear umbrella” for South Korea, served as an important guarantee to deter North Korea from invading the South. In other words, leaving open the option of nuclear retaliation against North Korea (whether it develops nuclear arms or not) in the event that it were to invade the South with conventional weapons, as it did at the start of the Korean War in 1950, maximized the deterrent effect and discouraged the North from making military provocations.

In 1995, after the US slightly modified the existing NSA while maintaining its core principles, it announced to the UN that “the United States will not use nuclear weapons against non-nuclear-weapon states party to the NPT except in the case of an invasion or any other attack on the United States, its territories, its armed forces or other troops, its allies, or on a State towards which it has a security commitment, carried out or sustained by such a non-nuclear-weapon State in association or alliance with a nuclear weapon State.” The conditional NSA has been established as an international norm to the extent that, among the other four permanent members of the UN Security Council which are also acknowledged as nuclear powers under the NPT (England, France, Russia, and China), all but China have imitated the American position almost identically.3

2. A New Negative Security Policy

A major feature of the new NSA described by the Obama administration’s NPR is that it has eliminated conditions which left open the option of nuclear retaliation. As long as non-nuclear states join the NPT and faithfully carry out their obligations, even if they attack the US or its allies with chemical or biological weapons-to say nothing of conventional weapons-the US clearly declares that it will not retaliate with nuclear weapons. In other words, as opposed to the past when the option was left open for nuclear retaliation against North Korea in the event of an invasion of the South, from now on, if North Korea joins the NPT, abandons its nuclear weapons, and sincerely follows its non-proliferation obligations, the US cannot use nuclear weapons to repel a North Korean invasion.

The Obama administration does not disguise the fact that the new policy of “no nuclear retaliation” against non-nuclear NPT member states is targeted at North Korea. At a foreign press conference, Principal Deputy Under-Secretary of Defense James Miller explained that one reason for the new policy was to entice North Korea to give up its nuclear weapons and return to the NPT.4 Of course, at present the new policy

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does not apply to North Korea, which currently possesses nuclear weapons. Secretary of State Clinton has said that North Korea has 1–6 such weapons, and Secretary of Defense Gates has declared the United States “would hold North Korea fully accountable for the consequences of such action, and will not stand idly by as North Korea builds the capability to wreak destruction on any target in the region—or on us.”

In effect the new Obama NSA has raised the topic of America’s nuclear threat, and it can be considered a calculated strategy to target “outliers” of the nuclear non-proliferation system such as North Korea which rationalize their nuclear programs, eliminate their justification for nuclear development, and lure them back to joining the NPT. As compared to the Bush administration’s “rogue states,” the Obama administration’s use of the term “outliers” is in itself suggestive of states which have fallen away from the nuclear non-proliferation system, and carries a message of inviting them to return to it.

3. Evaluations of the Obama Administration’s NPR

Regarding this new NPR, which emerged from the idea that nuclear proliferation must be obstructed by removing the justifications given by outliers like North Korea for nuclear development, critical views have already begun to be aired by both government insiders and the American public. For example, critics suggest that the conditions under which nuclear weapons cannot be used are too specific; that it damages the element of “strategic ambiguity” which deters America’s enemies from using armed force; that it is irrational to proscribe America’s use of nuclear weapons even in a case where the US mainland suffers massive casualties from a nuclear or biological attack; and that one cannot expect that North Korea and Iran will stop their nuclear programs just because the US promises not to make any nuclear threats.

The initial response from North Korea, too, has been negative. On April 9, a Foreign Ministry spokesperson pointed out that the new NPR leaves North Korea and Iran as targets for nuclear retaliation and complained that it is no different from the hostile policy of the early Bush administration, which set North Korea as a target of nuclear preemptive strikes and habitually made nuclear threats. At the same time, the spokesperson criticized the new NPR for completely overturning the pledge made in the September 19th Joint Declaration not to use nuclear weapons and for throwing cold water on the prospect of re-opening the 6-Party Talks, and declared that the North will continue to increase and modernize its nuclear stockpile as much as it deems necessary.

It is unclear whether Obama’s new NSA will be able to entice North Korea to denuclearize. Looking at it from the angle of South Korean security, it must be noted

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5 Remarks on Nuclear Nonproliferation at the University of Louisville as Part of the McConnell Center’s Spring Lecture Series, Hillary Rodham Clinton Secretary of State University of Louisville, Louisville, KY, April 9, 2010, http://www.state.gov/secretary/rm/2010/04/139958.htm.
that since the outbreak of the North Korean nuclear crisis there have been fears that the US nuclear umbrella has weakened. It must be recognized that the North Korean government’s argument that it has to develop nuclear weapons due to the nuclear threat from the US is gaining credibility in the United States. Since the North Korean nuclear issue emerged in the early 1990s, North Korea has persistently attacked the US’ attempts to stop its nuclear development using this “US threat argument,” and it can claim to have earned some measure of success.

For example, after the Korean War the North used the nuclear issue as a decoy to achieve the first US-North Korea high-level talks, and in the June 11, 1993 Joint Declaration the US formally pledged not to use or threaten to use armed force, including nuclear weapons, against North Korea. The Geneva Agreed Framework signed on October 21, 1994, included an item stating “The U.S. will provide formal assurances to the DPRK, against the threat or use of nuclear weapons by the U.S.” The September 19th Joint Declaration agreed upon at the 4th round of the 6-Party Talks in 2005 included the statement “The United States affirmed that it has no nuclear weapons on the Korean Peninsula and has no intention to attack or invade the DPRK with nuclear or conventional weapons.”

North Korea has used denuclearization as bait many times to extract promises from the US not to use nuclear or conventional weapons, and now it is using denuclearization as a pretext for insisting on the signing of a peace treaty, attempting to neutralize the armistice agreement which forms the foundation of restraints against the DPRK. This is the reality of the situation being faced today in the ongoing North Korean nuclear issue. The Obama administration’s new NPR presents South Korea with important security challenges, and it will require wisdom and strategy to resolve them sensibly.

II. The US-Russia “New START” and Future Outlook

On April 8, 2010, the leaders of Russia and the US met in Prague to sign the New Strategic Arms Reduction Treaty (or “New START”), opening a new chapter in nuclear arms reduction. In the midst of the international debate about creating a so-called “world without nuclear weapons,” which has progressed since the inception of the Obama administration, the agreement on “New START” carries at least some significant political and diplomatic meaning.

Prague is the site where, in 2009 President Obama warned about the threat of nuclear proliferation and nuclear terror, and revealed his policy objective to free humanity from the threat of nuclear arms. Since Prague’s designation as the site for the historic signing of “New START,” the city has now become a symbol of global nuclear non-proliferation. Just as Hiroshima and Nagasaki have become symbolic of

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10 Remarks by President Barack Obama, Hradcany Square, Prague, Czech Republic, Office of the Press Secretary, The White House, 2009.
nuclear destruction, Prague looks to become established as the emblem of nuclear arms reduction.

1. The Negotiation of “New START” and Its Contents

The “New START” negotiations began with an agreement between US President Obama and Russian President Medvedev in London in April 2009 to create a replacement for the “Strategic Arms Reduction Treaty I” (START I) signed in 1991. The US negotiating goal, in place of drastic arms reduction, was to create a follow-up to START I, which expired in December 2009, while still maintaining its system for monitoring Russia’s strategic nuclear position and achieving limited arms reduction. Yet one year’s negotiations required an exhausting itinerary of 10 general sessions and 14 bilateral summit meetings.

The START I treaty limited both sides’ Strategic Nuclear Delivery Vehicles (SNDVs) to 1,600 devices and limited operationally deployed nuclear warheads to 6,000. SNDVs consist of what is known as the strategic nuclear triad: ICBMs (intercontinental ballistic missiles), SLBMs (submarine-launched ballistic missiles), and long-range bombers. There were some setbacks when the Soviet Union collapsed, but Russia, which inherited the status of possessor of the world’s largest nuclear stockpile, fulfilled its disarmament obligations in December 2001, and on December 5, 2009, the treaty expired as planned.

“New START” can be considered an expanded successor to the spirit and terms of the START I, but the stepping-stone between the two is the Strategic Offensive Reductions Treaty (SORT). In May 2002, Presidents Bush and Putin agreed to limit the number of operationally deployed nuclear warheads to 1,700–2,200 each. SORT came into effect in 2003, and will expire automatically once “New START” takes effect.

“New START” restricts the number of strategic nuclear warheads each side can deploy to 1,550, with a limit of 800 total SNDVs, of which 700 can be actively deployed, excluding delivery vehicles undergoing repair. The reduction on strategic nuclear warheads is 30% of SORT levels, and the SNDV reduction is 50% of START I levels.11 It also includes a strict verification system based on that of START I. Like START I, it provides a 7-year period for reductions after coming into effect, and expires after 10 years, which can be extended up to 5 additional years at the consent of both parties. The treaty must be ratified by the legislatures of both countries to take effect; in the US, it needs two thirds of the Senate, or 67 votes, to pass.12

2. Overall Assessment

The greatest significance of New START is that it is a symbolic achievement

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demonstrating the success of the Obama administration’s policy to “reset” US-Russia ties, from confrontation to cooperation.13 Through this new treaty, the US and Russia have shown the international community that they have forged a new partnership. In a reflection of this, at the public announcement of New START, President Obama declared that when the US and Russia cooperate, they not only benefit their own countries but also contribute to global peace and prosperity, and he emphasized that US-Russia cooperation is essential to strengthening the nuclear non-proliferation system.

The second achievement of New START is that the world’s two largest nuclear powers, by signing a new treaty to reduce their nuclear stockpiles and thus showing compliance with the nuclear disarmament obligation under Article 6 of the NPT, have established an ethical, political, and legal basis for demanding that non-nuclear powers renounce nuclear weapons and participate in the international nuclear non-proliferation regime.14 At the Global Nuclear Security Summit in April and the NPT Review Conference in May, this must have helped to buttress the positions of the US and Russia, who sought stronger control of nuclear materials and more forceful sticks to apply towards Iran and North Korea.

This method of problem-solving using the international system, which was avoided and underestimated by the preceding Bush administration, and of acknowledging the importance of arms control and restoring its process, is another significant aspect of New START. The Bush administration devalued arms control as a Cold War relic and unilaterally withdrew from the ABM treaty, which was considered emblematic of the easing of military tensions during the Cold War. Now, with the signing of New START, the arms control processes which were marginalized during that administration have been put back on the right track.15

3. Implications for the North Korean Nuclear Issue

It does not appear that New START will have a direct influence on the North Korean nuclear issue. Clearly this treaty will present a new basis from which to call for North Korea to abandon its nuclear programs at international disarmament conferences such as the 6-Party Talks and other nuclear nonproliferation venues. As nuclear powers work to fulfill their obligations under the NPT, they build up justification for demanding that North Korea rejoin the NPT and renounce nuclear weapons. However as long as North Korea does not conduct additional nuclear tests or spread nuclear weapons, it will be difficult for the UN to further strengthen existing sanctions against North Korea on the basis of New START.

The country in a somewhat awkward position now is China. It supported nuclear disarmament as a matter of policy, so it would not be able to criticize New START. Regarding the nuclear issue, up to this point it has tried to maintain a position favoring neither North Korea nor the US, but the signing of this disarmament treaty by the US

and Russia, two major participants in the 6-Party Talks, created circumstances in which it would be difficult to support North Korea. It is also possible that China would show more direct involvement in North Korean nuclear disarmament to escape international criticism of its efforts to modernize its own nuclear forces.

In North Korea’s case, while a more vigorous nuclear disarmament offensive could be expected following the New START agreement, it would still be able to take a critical position on this treaty. Focusing on the remaining nuclear stockpile rather than on the reduction, North Korea would emphasize that the US nuclear threat still exists. In conclusion, the New START agreement has created some positive conditions for North Korean nuclear disarmament, but it is unlikely that it will make any concrete contribution.

III. The First Nuclear Security Summit

The 1st Nuclear Security Summit was convened in Washington D.C. from April 12~13, 2010 with great success. It was a major international conference hosting leaders from 37 countries and high-ranking officials from 10 additional countries, as well as representatives from 3 international agencies (the UN, the IAEA, and the EU). Over forty years have passed since the start of the nuclear nonproliferation system based upon the NPT, yet this conference marks the first time that 47 leaders and representatives from around the world have gathered in one place for an earnest discussion of nuclear issues. For the US as well, this is the first time Washington, DC has hosted approximately 50 world leaders since the nation’s founding. A distinct movement towards nuclear reduction emerged in 2010; on April 6th the Obama administration announced a new Nuclear Posture Review (NPR) which reduces the dependence on nuclear weapons, and on April 8th the US and Russia met in Prague to sign the New Strategic Arms Reduction Treaty. In this context, the first Nuclear Security Summit, yet another important event which took place this past April, played a central role in constructing a new paradigm for global security.

The Nuclear Security Summit has its foundation in the strategy and vision for nuclear nonproliferation which President Obama laid out in Prague on April 5, 2009. In his speech, Obama, emphasizing the need to keep nuclear weapons out of the hands of terrorists, proposed that a nuclear security summit be held in order to stop the spread of nuclear material and technology and to systematize related international efforts. In July 2009, at the G8 Summit in Italy, Obama specified that this conference would be held in March 2010, but the following September in his speech to the UN General Assembly he adjusted the date to April 2010. In the UN speech he stressed that the world could not afford to let even one nuclear warhead fall into the hands of extremists, and so the security summit would seek to reaffirm each country’s responsibility for controlling nuclear materials and to strengthen the system for preventing the smuggling and theft of those materials.

The US conceived the Nuclear Security Summit in connection with Obama’s strategic vision of a world without nuclear weapons—an idea of removing all nuclear warheads from the face of the Earth, as a measure for preventing nuclear proliferation.
In raising this undeniably morally justifiable proposition of realizing “a world without nuclear weapons,” regardless of its feasibility, the US is taking initiative and showing leadership, and appealing for the participation of other countries, which represents the basic essence of the nuclear nonproliferation strategy of the current Obama administration. In this context, the major objective of the first nuclear security summit was to gather together the leaders heading each country’s decision-making apparatus and to bring about a broad framework agreement on the sensitive issue of the control of “nuclear materials,” particularly highly enriched uranium and plutonium which can be used in nuclear weapons production.

US concerns about safe control and supervision of the over 2,000 tons of highly enriched uranium and plutonium scattered across dozens of countries arise from its fears of the possibility of nuclear terrorism. Since his days as a senator, Obama has considered nuclear terrorism as the most urgent threat facing the international community, and this has its origin in the heightened concern about terrorism which Americans have felt since 9/11. On the premise that a nuclear terror attack might one day occur on US soil, most Americans believe that that possibility must be reduced and the event delayed at all costs. Therefore, the basic task of the nuclear security summit is to strengthen the international network and bolster related institutions for preventing nuclear terror, the greatest threat to world peace and the number one priority to emerge since 9/11.

1. Major Achievements

The 1st Nuclear Security Summit’s most significant achievement was to add a 4th pillar to the existing “3 Pillars” of the current nuclear nonproliferation system (nonproliferation, nuclear arms reduction and peaceful use of nuclear energy). The participants did not make a clear agreement on this point, but the historical act itself of 47 leaders and representatives gathering in one place to discuss the nuclear terror issue was enough to establish nuclear security as the 4th pillar in a fait accompli. More specifically, 3 principal achievements can be drawn from this conference: (1) a joint statement, (2) a plan for action, (3) mutual agreements and unilateral declarations.

First, the 47 representatives agreed on a high-level political statement. This joint agreement, made up of 12 items, can be summarized as follows:16

- To approve of Obama’s proposal to, within the next 4 years, ensure safe control of those nuclear materials around the world which have been inadequately controlled thus far
- To agree to make concerted efforts to improve the safety and accounting for of nuclear materials among each country’s resources, with emphasis on enriched uranium and plutonium, and to strengthen related regulations
- To collect the highly enriched uranium and plutonium that have been dispersed to various places, concentrate them together and manage them
- To promote the “universality” of major international treaties related to nuclear

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security and nuclear terror, so that all countries can participate

- To strengthen the abilities of law enforcement, and industrial and technical personnel, with attention given to the positive roles of systems such as the “Global Initiative to Combat Nuclear Terrorism”
- That the IAEA will develop guidelines for nuclear security and distribute them to the member states, and will allot the necessary materials for carrying them out as needed
- To promote bilateral and multilateral support for improving nuclear security
- To encourage nuclear energy industries to follow nuclear security regulations while not impeding the peaceful use of nuclear energy

Secondly, the participants agreed upon an action plan in order to concretely act upon the promises made in the joint statement, summarized as follows:17

- To ratify and execute an international treaty on nuclear security and nuclear terrorism
- To execute a UN Security Council resolution with the cooperation of the UN, and to support other countries in fulfilling it
- To improve and put into practice guidelines for nuclear security in cooperation with the IAEA
- To examine each country’s regulations and legal requirements with regards to nuclear security and nuclear material transactions
- To convert civilian nuclear power facilities which use highly enriched uranium so that they can switch to low-enriched uranium
- To undertake research into new nuclear fuel, detection equipment and nuclear forensic technology
- To improve the industrial and institutional attitudes towards the importance of nuclear security
- To construct education and training systems so that each country can secure the manpower necessary to control nuclear materials
- To carry out joint exercises with law enforcement and customs agents to improve detection methods

Thirdly, 30 of the countries participating in the conference made individual political declarations or bilateral agreements, such as the following:18

- The US and Russia announced an agreement on the disposal of 34 tons of plutonium each, a total of 68 tons (an amount sufficient to make 17,000 nuclear warheads), and completing work in planning since the Clinton administration of the 1990s.
- The Ukraine declared that it would destroy all of the 163kg of highly enriched uranium it acquired in the process of breaking away from the former Soviet

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Union and disassembling its nuclear weapons.

- Chile announced that as of March 2010 it had destroyed 18kg of highly enriched uranium that it had possessed.
- Mexico announced that it would use low-enriched uranium instead of highly enriched uranium to fuel its nuclear reactors, and the US, Canada, and Mexico signed a declaration to support this effort.
- Malaysia, which was used as a base for nuclear trafficking by the Pakistani scientist Dr. Khan, pledged to strengthen its export controls to prevent illegal leaks and theft of nuclear technology.
- Italy signed a Megaport agreement with the US to install nuclear detection facilities in its major ports.
- Japan pledged to establish a regional center to support action on the items pledged at this nuclear summit, and to promote research and development into nuclear detection and nuclear fingerprinting.

2. Implications for the ROK/US Alliance and the North Korean Nuclear Issue

The fact that South Korea was selected at the first Nuclear Security Conference as host of the next conference holds great importance for the ROK/US alliance. As host country of this international summit tasked with preventing nuclear terrorism, an issue which the US president and the American people recognize as a real threat, this signifies that South Korea stands on the front line in stopping nuclear terrorism and, together with the US, is playing a leading role in the global movement started by President Obama. In the current environment of change in the international security paradigm, with the diminishment of the risk of all-out nuclear war between nations and the rise of nuclear terrorism as a new security threat, South Korea is taking joint steps with the US and playing a central role in this domain.

In addition, hosting the 2nd Nuclear Security Summit will be an opportunity to demonstrate, both domestically and internationally, that South Korea has transformed from its position as a beneficiary of US security protection to an active contributor to US security. As a symbolic event comparable to the participation in the Vietnam War during the Park Chung Hee era in the 1960s, this will help to create conditions for an even more solid ROK/US alliance for dealing with major pending challenges such as the North Korean nuclear issue. Ultimately, South Korea’s hosting of the second Nuclear Security Summit will stand out in the 60-year history of the ROK/US alliance as a landmark event which, amid the new international paradigm of regarding nuclear terror as the gravest security threat, will play a central role in constructing a solid base and casting ROK/US relations in a new mold.

North Korea, Iran, and Syria were not invited to the first conference. North Korea deceived international society in developing nuclear weapons, Iran is pursuing a similar path, and Syria’s attempts to smuggle in a new model 5MW nuclear reactor from North Korea were thwarted by an Israeli air strike. These three countries are linked together in a nuclear proliferation food chain. With regards to North Korea, which, despite the earnest entreaties of the international community over the past 20 years, has
disregarded all its promises and developed nuclear weapons, the UN Security Council has applied the strongest economic sanctions since the end of the Korean War. Syria is still under investigation by the IAEA, and Iran is likely to be subjected to stronger additional sanctions in the near future.

The current North Korean regime is a target of vigilance for the Nuclear Security Summit and could certainly not be extended an invitation. The North Korean nuclear issue has long ago moved beyond the Korean peninsula and become a global concern. North Korea stands at the center of global nuclear proliferation; its secret nuclear cooperation with Pakistan and Syria has been exposed, and recently suspicions have arisen that it is engaged in nuclear trafficking with Myanmar. Even if North Korea were to make pledges to the US that it would not engage in nuclear terrorism itself, there are abundant fears that nuclear materials from its Yongbyon reactor might be used by terrorist groups such as Al Qaeda.

On this point, South Korea’s hosting of the second Nuclear Security Summit holds special significance for resolving the North Korean nuclear issue. Hosting this conference in South Korea, which is directly threatened by the nuclear proliferator North Korea, can be seen as a strong warning to North Korea from the international community. For North Korea it is a diplomatic and political sanction which will bite more painfully than economic sanctions. At this point the Kim Jong Il regime needs to correctly interpret the international trend towards nuclear disarmament. North Korea must understand that as long as it holds on to its nuclear weapons, it will only deepen its sanctions and isolation, and will have no future. The regime must wake up to the fact that the foreign capital and economic revival upon which they are staking their fate will not be possible as long as they possess nuclear weapons.

It would be wonderful if the second Nuclear Security Summit could become an opportunity for North Korea to reestablish itself as a normalized nation. As President Lee Myung Bak made clear, if North Korea rejoins the NPT by 2012 and takes real steps towards denuclearization, it will be invited back with warm welcome by international society. South Africa, which worked to develop nuclear weapons in the 1980s but subsequently abandoned the program, was greeted with a warm reception from the conference participants in Washington. The possibility is eagerly looked forward to that, at the second Nuclear Security Summit, the leaders of North and South Korea might join hands as North Korea declares it has carried out complete denuclearization, and it can be declared that the Korean peninsula has achieved a new milestone towards “a world without nuclear weapons.”

IV. North Korea’s HEU Program and Its Political Ramifications\textsuperscript{19}

The history of North Korea’s highly enriched uranium (HEU) program dates back to the early 1990s. In anticipation of reaching a deal at the DPRK-U.S. negotiations aimed at stopping the North’s plutonium production at its Yongbyon facility, the

\textsuperscript{19} This section will appear in Cheon Seongwhun, “North Korea’s HEU program and its political ramifications,” Vintage Point, 2011: 20-23.
North Koreans were apparently seeking a new route to nuclear development. From the 1990s to the early 2000s Pakistan supplied North Korea with HEU technology. In October 2002, when James Kelly, the U.S. assistant secretary of state for East Asian and Pacific affairs, visited Pyongyang as a special envoy from President Bush and brought up the uranium enrichment issue, the North Koreans acknowledged their uranium program as a reality, saying, “We can have even more than that.” Many people point to this incident as the start of the second North Korean nuclear crisis. But a realistic analysis of the North Korean nuclear program shows that the North Korean nuclear threat has existed continuously since it was revealed in the 1980s, and that the threat has grown more serious over time.

Despite the October 2002 “statement of acknowledgment” by Kang Sok Ju, then First Vice Minister of Foreign Affairs, the DPRK government continued to deny the existence of its uranium enrichment program. The North Korean authorities consistently claimed that they had no facilities, equipment, or personnel involved in uranium enrichment. South Korea, the U.S., and Japan took the position that uranium enrichment must be included as a target of denuclearization at the 6-Party Talks, but North Korea refused, adamantly denying the existence of such a program.

1. North Korea’s HEU Capabilities

Through Siegfried Hecker, who visited North Korea from November 9~13, Pyongyang revealed its formerly concealed uranium enrichment program as a reality. Dr. Hecker visited Yongbyon on November 12 and observed many centrifuges in operation at the location of a facility that had formerly produced nuclear fuel for the 5 MWe graphite-moderated reactor. Dr. Hecker said that the North Koreans had removed the interior of this facility and installed the centrifuges along with an ultra-modern control room. Here is the summary of Dr. Hecker’s observations:20

- Stunned by the sight of 2,000 centrifuges in two cascade halls and an ultra-modern control room,
- Saw rows of advanced centrifuges, apparently fully operational,
- Amazed by the scale and sophistication of the centrifuge facility,
- Noted that North Korea must have been able to procure enough materials and components, fabricate and assemble them into working centrifuges, get them functioning in an undisclosed facility, and then install them in short order at Yongbyon,
- Believes it is highly likely that a parallel covert facility capable of HEU production exists elsewhere in the country,
- Believes North Korea’s potential export of fissile materials or the means of producing them, which include centrifuge technologies, is more troubling than an expansion of its nuclear arsenal,
- Noted that Pyongyang managed to justify its need for an enrichment program while moving toward its long-standing ambition of using light-water reactors

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Considering that there were no centrifuges installed as late as April 2009 when U.S. experts visited Yongbyon, this means that North Korea was able to very rapidly and secretly transform its nuclear fuel production facility into a uranium enrichment facility, and keeping in mind the unforeseen speed and scale of the construction, it is likely that they had foreign help with this uranium program, and that part of the facility was transferred from another location or was reconstructed based on a pre-existing facility. The country most likely to have cooperated modern uranium enrichment technology to North Korea is Iran. The modern computer controllers used to operate the centrifuge facility came from outside the country, and presently Iran is said to possess an identical kind of enrichment equipment.

According to Dr. Hecker, the revealed facility at Yongbyon has a total enrichment capacity of 8,000 separative work units (SWU) per year. This means that, with 2,000 centrifuges, the average is 4 SWU per year per centrifuge, somewhat lower than the original G2, the German machine which was copied by Pakistan and called the P2. Albright and Brannan estimated that with this capacity, North Korea could make about 26-33 kilograms of HEU per year. Dr. Hecker guessed that North Korea could produce up to 40kg of HEU per year.

2. Political Ramifications of Revealing the HEU Program and Future Prospects

North Korea’s denial of the existence of the HEU program had continued until in April 2009, when the Foreign Ministry spokesman released a statement. This statement, made in reaction to the UN Security Council’s response to North Korea’s third long-range missile launch, argued that, “We will begin construction of a light water reactor, and as a first step we will not hesitate to develop the technology to guarantee that it can produce its own nuclear fuel.” When the UN Security Council adopted a chairman’s statement criticizing the missile launch, North Korea used that as an excuse to take a bolder strategy, going public with its secret uranium program and putting it forth as a fait accompli.

Criticizing the UN Security Council Resolution 1874 on June 13, 2009 in response to the second nuclear test, the North Korean Foreign Ministry declared that “Pursuant to the decision to build its own light-water reactor, enough success has been made in developing uranium enrichment technology to provide nuclear fuel to allow the experi-

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23 Ibid: 2.
24 Ibid.
On September 3, 2009 the North Korean delegate to the UN submitted a letter to the chairman of the Security Council rejecting Resolution 1874, in which it claimed, “Experimental uranium enrichment has successfully been conducted to enter into completion phase.” From early 2010, in an attempt to rationalize its uranium enrichment program, North Korea began to concretely link uranium enrichment with the construction of a light-water reactor (LWR). And on November 12, 2010, it revealed the secretly built centrifuge facility to the international community.

There may be several possible external aims behind disclosing the long-held secret HEU program. First, considering that North Korea has been seeking to move past the current phase of controversy brought on by the Cheonan and Yeonpyong incidents and has been continuously sending signals of its willingness to rejoin the 6-Party Talks, they may be hoping to use the centrifuge card to raise interest in the nuclear issue and the 6-Party Talks, thus transitioning out of the current period of sanction and into a new phase of North Korean aid. The recent signs of activity detected in the area near the nuclear test site in Kilju, North Hamgyong Province were obviously intended as a signal of plans to conduct a third nuclear test and may also be part of the effort to break out of the current deadlock. Of course, North Korea continues to hold out the possibility of a third nuclear test as one of its strategic cards.

Second, while reaffirming their claim of using nuclear energy for peaceful purposes in conjunction with the ground breaking of the pilot light-water reactor, they have also clearly signaled that they expect to retain the right to build a LWR, even if the 6-Party Talks are restarted. This suggests that the LWR issue will become a major point of contention in any future denuclearization agreement. That is, constructing a LWR will be the North’s primary economic demand in return for denuclearization. On this point, it will be necessary for the 3 countries which led the Korean Peninsula Energy Development Organization (KEDO)-South Korea, the U.S., and Japan-to establish their common position. However, we must bear in mind that the equation may not be as simple as “provision of light-water reactor = North Korean nuclear disarmament.”

Third, by playing the light-water reactor card, North Korea lays the groundwork for establishing its uranium enrichment project. This reveals that North Korea has no intention of discarding its uranium enrichment program even if the negotiations on denuclearization are restarted. Of course, after some time has passed North Korea may attempt to build an HEU bomb using some international event as an excuse, the same way they did with their plutonium program.

Fourth, the uranium enrichment program will be used to help to establish Kim Jong Eun as successor by being promoted as his own technological achievement. Just as Kim Il Sung passed down the plutonium program to enable Kim Jong Il to stand against the U.S. and South Korea, so will Kim Jong Il bestow the uranium program to his son as a gift to aid in the continuing struggle with the U.S. and the ROK. Thus, the plutonium bomb was the weapon of the Kim Il Sung/Kim Jong Il era, whereas the uranium bomb will become North Korea’s new weapon in the Kim Jong Eun era.

Finally, a fact that must be noted is that the uranium fuel used by a small light-

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water reactor must be more highly enriched than that of a larger model. Normally a large LWR uses a fissile fuel material enriched to about 3~5% U235 isotope. In a smaller LWR, however, the enrichment level increases to 15~20%. Normally weapons-grade uranium must be enriched to over 90%, and as the enrichment level increases so does the ability to produce highly-enriched weapons-grade uranium. Therefore, if North Korea says it must produce 15~20% enriched uranium in order to operate this small LWR, there could be a serious problem. This will add another formidable obstacle to the efforts to denuclearize North Korea. The editors of Chosun Shinbo seemed to have this in mind in the April 9th article when they wrote, “Our domestically built light-water reactor will add a new element to future denuclearization negotiations.”

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