

## North Korea's Disclosure of Its Uranium Enrichment Program: Meaning and Lessons

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### 1. Introduction

Through Siegfried Hecker, who visited North Korea from November 9-13, North Korea revealed its formerly concealed uranium enrichment program as a reality. Dr. Hecker visited Yongbyon on November 12 and observed over 1000 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.” He also relayed the North Korean authorities’ claim that they are presently operating 2000 centrifuges.

Considering that there were no centrifuges installed as late as April 2009 when US 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. Considering the unforeseen speed and scale of the construction, it is likely that they had foreign help with this uranium program,<sup>1)</sup> and that part of the facility was transferred from another location or was reconstructed based on a pre-existing

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1) David Sanger, “North Koreans unveil vast new plant for nuclear use,” *New York Times*, November 20, 2010.

facility.<sup>2)</sup> The country most likely to have supplied 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 facility.<sup>3)</sup>

## 2. North Korea's Persistence about Uranium Enrichment

The history of North Korea's uranium enrichment program dates back to the early 1990s. The Clinton administration, shocked by North Korea's March 12th 1993 announcement of its withdrawal from the NPT, entered into direct negotiations with the DPRK in order to resolve the nuclear issue, thereby breaking from the policy of "no direct US-DPRK talks" which had been a core element of US foreign policy since the ceasefire agreement. In the midst of these talks North Korea began making moves to acquire another kind of nuclear material, "highly enriched uranium" (HEU). In anticipation of reaching a deal at the DPRK-US negotiations aimed at stopping the North's plutonium production at its Yongbyon facility, the 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. From December 1993, when Pakistan's then-Prime Minister Benazir Bhutto visited Pyongyang and met with Kim Il Sung, secret military cooperation advanced rapidly between Pakistan and North Korea. North Korea provided technology for 1000-km range missiles, while Pakistan provided funds as well as equipment and technology for developing HEU. Pakistan, which desired the capability to strike at strategic locations in India, urgently needed North Korean Nodong missiles, which had been tested successfully in a launch in May 1993. The nuclear warhead-equipped "Gauri" missiles which Pakistan currently has deployed are based on Nodong missile technology supplied by North Korea. In exchange North Korea received several dozen P1 and P2 centrifuges and related technology from Pakistan. Several dozen North Korean specialists visited the Pakistan nuclear development facility "Khan Research Laboratories," and in May 1998 they were allowed to observe a Pakistani nuclear test site. After 9/11 when the Musharraf government began cooperating with the US in the global war on terror, it was revealed that Abdul Qadeer Khan, considered the "father of the Pakistani nuclear program" and

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2) Analysis by the US Institute for Science and International Security (ISIS), *Yonhap News*, November 22, 2010.

3) Remarks by ISIS President David Albright, *Yonhap News*, April 19, 2010.

a national hero, had been operating his own secret nuclear trade network. At that time Dr. Khan testified that he had personally visited North Korea more than 10 times in the 1990s and early 2000s, and during one visit the North Korean authorities showed him an actual nuclear warhead in an underground facility near Pyongyang.

Since the 1990s there have been continuous suspicions and concerns about a North Korean HEU program. In particular, the Republican-led US Congress was sharply critical of the Clinton administration for failing to acknowledge the issue of North Korea's continued nuclear development in violation of the Geneva Basic Agreement. For instance, in 1999 the then-speaker of the House assigned nine House representatives to form a North Korea policy group tasked with determining whether the North Korea threat had diminished in the 5 years since the Geneva Agreement was signed. A report released in November of that year revealed that North Korea had continued to pursue nuclear development through means other than plutonium production, such as operating a uranium enrichment program, in violation of the Geneva Basic Agreement. This conclusion influenced the North Korea policy adopted by the Bush administration which took office in 2001. In October 2002, when James Kelly, the US 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 2nd 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 the Yongbyon reprocessing facility was built in the 1980s, and the threat has grown more serious over time.

### 3. The Syria-Iran-Myanmar Connection

In the aftermath of 9/11, Pakistan's involvement ceased and North Korea turned instead to Syria, Iran, and Myanmar. In the early 2000s North Korea secretly began building an improved 5MWe reactor in the Syrian desert. At the 6 Party Talks which began in August 2003 the issue of nuclear nonproliferation was considered the ultimate "red line," and yet North Korea was actually exporting a plutonium-producing reactor on the side while appearing to participate earnestly in the talks. This reactor was destroyed in early September 2007 by an Israeli airstrike, and it is known that a considerable number of North Korean laborers and technicians were killed at the site.

While advancing its nuclear cooperation with Syria, North Korea also accelerated its cooperation with Iran. Iran's nuclear weapons development began during the Pahlavi dynasty, was terminated after the 1979 revolution, and started up again in 1984. At the time Iran claimed it was building a nuclear energy program, but it appears that they also secretly began working on nuclear weapons research. The truth of Iran's HEU program became known to the world in August 2002 when an Iranian opposition group exposed the testimony of exiled scientists. The opposition group accused Iran, an NPT member state, of hoodwinking the international community and the IAEA for 18 years.

There is no concrete evidence of close cooperation between North Korea and Iran on nuclear development. However there is a high probability that the two countries are working together. One objective indication is the long history of military cooperation between Iran and North Korea. In particular, Iran has been a major importer of North Korea's short- and medium-range missile technology. For this reason, at every North Korean missile test launch an Iranian military advisory committee is reported as present among the observers. In light of their close military cooperation, it seems very likely that North Korea, with its successful plutonium development program, and Iran, with its large-scale uranium enrichment plant, are engaged in trade of related technologies and materials.

Despite international condemnation, Iran continues to operate its uranium enrichment program. The UN and the Western powers, led by England, France, and Germany, are demanding that Iran terminate its uranium enrichment program out of concern that it may be producing HEU for use in nuclear weapons. Yet Iran has refused to comply, on the pretext that its program is for "peaceful purposes." Iran's stance is very similar to that of North Korea, which continued to insist that its plutonium program was for peaceful purposes right up until it confirmed it had nuclear weapons. North Korea's behavior also resembles that of Iran in that they claim to be enriching uranium for use in a light-water reactor even before that reactor has been built. This behavior reveals the give-and-take nature of the strategic and technical cooperation between the two countries. Some analysts also suggest that the spent nuclear fuel from the 5MWe reactor in Syria was intended to be shared with Iran. We cannot ignore the possibility that Syria, which is at war with Israel, and Iran, whose president has vowed to wipe Israel off the map, are forming a triangular system of cooperation with North Korea as a go-between.

Another connection which has repeatedly prompted concerns in recent years in relation to North Korea's HEU program is the possibility of North Korean nuclear cooperation with Myanmar. Suspicions and concerns persist about North Korean involvement in uranium mining and

nuclear facility construction in Myanmar. It is highly possible that North Korea is using uranium mined in Myanmar and either enriching it there or transferring it to North Korea or Iran. There is some debate about whether Myanmar is receiving help from North Korea to develop its own nuclear weapons, but it appears probable that North Korea is using Myanmar's nuclear facilities and uranium resources to strengthen its own nuclear capability and to aid Iran.

#### 4. North Korea's Dual Strategy on Uranium Enrichment

Despite the October 2002 "statement of acknowledgment" by Kang Sok Ju, the North Korean 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 US, and Japan took the position that uranium enrichment must be included as a target of the agreement formed at the 6 Party Talks, but North Korea refused, adamantly denying the existence of such a program.

This consistent stance by North Korea changed with the Foreign Ministry spokesman's statement of April 29, 2009. This statement, made in reaction to the UN Security Council's response to North Korea's 3<sup>rd</sup> long-range missile launch, complained "Not content with following the schemes of the US and violently infringing on the sovereignty of other nations, the UN Security Council has now begun to directly threaten the security of our people and nation, against the primary national interests of our republic." The statement added the following declaration:<sup>4)</sup>

If the UN Security Council does not immediately apologize, we will be compelled to take additional defensive measures in order to protect our primary national interests. These measures may even include tests of nuclear weapons and intercontinental ballistic missiles. Second, 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 3<sup>rd</sup> long-range 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. North Korea's basic principle of peaceful use of nuclear energy, based on Kim Il Sung's statement that "We have neither the will nor the ability to develop nuclear weapons," changed with the "nuclear declaration" of

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4) Korean Central TV, April 29<sup>th</sup>, 2009.

February 10<sup>th</sup>, 2005. Since then North Korea has taken the stance that it has no choice but to develop nuclear weapons because of the US nuclear threat. This is the culmination of North Korea's unique dual strategy -first deny the existence of nuclear weapons while they are in the development stage, and then after they have been developed use an external threat as an excuse to announce their existence and rationalize them as a fait accompli.

After the UN Security Council adopted Resolution 1874 on June 13<sup>th</sup> 2009 in response to the 2<sup>nd</sup> nuclear test, the North Korean Foreign Ministry issued a statement which declared:<sup>5)</sup>

Upon authorization, the Ministry of Foreign Affairs of the DPRK strongly condemns and rejects the UNSC "resolution 1874" and declares that it will take the following countermeasures at this early phase of all-out confrontation with the U.S. in order to defend the national dignity and the country's sovereignty. First: The whole amount of the newly extracted plutonium will be weaponized. More than one third of the spent fuel rods has been reprocessed to date. Second: The process of uranium enrichment will be commenced. 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 experimental procedure.

On September 3rd 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, "Reprocessing of spent fuel rods is at its final phase and extracted plutonium is being weaponized. Experimental uranium enrichment has successfully been conducted to enter into completion phase."<sup>6)</sup>

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. Over the past year the North Korean authorities have spoken several times of the light-water project; on April 9<sup>th</sup> the *Chosun Shinbo* printed the following explanation of how uranium enrichment will be used by the light-water reactor to contribute to strategic increases in production:<sup>7)</sup>

...the development of uranium enrichment technology for the construction of a light-water reactor. The strategic increase of production is a key link to our economic revival plan, and we already clarified our intention to build a light-water reactor last year immediately after the UN Security Council took issue with our satellite launch. Our nuclear weapons were made using plutonium

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5) KCNA, June 13, 2009.

6) KCNA, September 4, 2009.

7) *Chosun Shinbo*, April 9, 2010.

extracted at the Yongbyon nuclear facility. Our domestically built light-water reactor will add a new element to future denuclearization negotiations.

## 5. North Korea's Intentions and What They Teach Us

The North Korean regime appears to have several reasons for choosing to announce its uranium enrichment program to the world at this time. First, they want an item of some importance to bring to the 6 Party Talks in order to make the negotiations more complex and difficult; on the one hand, this issue will stimulate the interest of the other 6 Party member states, and on the other hand it will make resolving the nuclear issue even more difficult.

Second, by discussing a light-water reactor they add another pretext to their claims of peaceful use; 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 threat as an excuse, the same way they did with their plutonium program.

Third, 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 US, so will Kim Jong Il bestow the uranium program to his son as a gift to aid the continuing struggle with the US. 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.

The furor over the North Korean HEU program which erupted in 2002 has been a major factor inciting internal conflict in South Korean society over the past decade. Elements friendly to the North Korean regime insisted that the Bush administration's claims were groundless, saying that the talk about the HEU program was just part of the neo-conservatives' strategy to pressure North Korea. As circumstantial evidence of the HEU program continued to surface, these groups changed tactics and argued that what was being observed was not an HEU program but a uranium enrichment program. They echoed North Korea's claim that the program was producing lightly enriched uranium, to be used not for nuclear weapons but rather for fueling a light water reactor. Since that time the term "HEU" has disappeared from discourse in South Korean society, and instead the term "uranium enrichment" has come to be used as a sign of good faith in the North Korean government's intentions.



There is nothing surprising about the scale or the modernity of the uranium enrichment program that North Korea revealed to Dr. Hecker. In light of North Korea's severe economic distress it is somewhat unusual, but considering the zeal and the funding which the North Korean regime has devoted to its HEU program over the past several decades it is certainly not surprising. What is surprising is the fact that South Korean society has blithely carried on for so long while overlooking the North Korean nuclear threat and the regime's persistent nuclear strategy. Now that the centrifuge facility has been revealed, we should take this opportunity to put an end to this senseless domestic conflict in South Korean society. We must seriously consider how our internal debate over the HEU program has been perceived by the North Korean government. The same goes for the still-raging debate over the evidence of the Cheonan sinking. The time has come for national consensus and solidarity with regard to the North Korean regime's true nature and its nuclear strategy.