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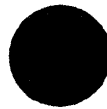


**THE NORTH KOREAN NUCLEAR DEVELOPMENT
PROGRAM AND JAPAN**

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Introduction

In the past year, the Northeast Asian security debate has been preoccupied with the status and potential implications of a North Korean nuclear program. North Korea's accession to the safeguards provisions of the Non-Proliferation Treaty (NPT) and the more recent visit of International Atomic Energy Agency (IAEA) Director General Hans Blix have done little to resolve these issues. Instead, the lingering possibility of a rogue state armed with nuclear weapons has raised the specter of a full-blown nuclear arms race in Northeast Asia, encompassing not only the Korean peninsula but also Japan. Indeed, one of the more common assertions has been that Japan may be on the verge of developing nuclear weapons in response to the North Korean nuclear program.

Is it, in fact, likely that Japan is on the verge of renouncing its long-standing prohibition on the possession or manufacture of nuclear weapons? Before such dire predictions are made, it is important to examine the extent of the North Korean nuclear program, and the likely ramifications of a North Korean nuclear capability. Only then is it possible to make any assessments of potential Japanese responses.

North Korea's Nuclear Program

The first indications of nuclear-related activities in the Democratic People's Republic of Korea (DPRK) stem from reports, dated 1947, that the Soviet Union was conducting surveys of North Korea's monazite mines.¹ Soon thereafter, the Soviets evidently

¹Monazite contains both thorium and uranium-oxide, materials that were part of the Soviet nuclear-energy program. U.S. Army, "Monazite Production in North Korea," *FEC Intelligence Digest*, GHQ, FEC, (MIS-GS, December 2, 1951), pp.

arranged for the large-scale export of monazite ore to the USSR. In 1952, a Chinese nuclear scientist was also reportedly dispatched to the DPRK to retrieve radioactive materials.²

The next several years saw growing evidence of North Korean interest in nuclear research, including two agreements in 1956 between Pyongyang and Moscow. This process culminated in a formal nuclear cooperation treaty between the two states in 1959. Under the provisions of these treaties, the Soviet Union agreed to train a number of North Korean personnel at Soviet nuclear facilities. One of these trainees was Choe Hak-Kun, the DPRK's first Minister of Atomic Power Ministry, who is believed to have been trained at Dvina (or Dubna) Nuclear Institute.³ Augmented by those trained in China, and possibly also by East German- and Romanian-trained engineers and scientists, and leavened by some who had attended American and Japanese institutes, the North is believed to now field a 3,000-man nuclear establishment, including 25 Ph.D.'s.⁴

The Soviet bloc not only supplied North Korea with training for its personnel, however, but also provided its first nuclear reactor. In 1965, North Korea received a small 2-4 MW research reactor from the Soviet Union. Installed near Yongbyon, 90 km north of Pyongyang, it is believed to have begun operations in 1967, since which time it has

12-16, cited in The Maldon Institute, *Korean People's Army: Nuclear, Biological and Chemical Warfare Capabilities* (Washington, D.C., February 9, 1989), p. 9.

²John Wilson Lewis and Xue Litai, *China Builds the Bomb* (Stanford University Press, Stanford, CA, 1988), p. 146.

³Kang In-Son, "Dr. Yi Sung-Ki, Godfather of North Korea's Nuclear Development and World-Renowned Discoverer of Vinyon," *Wolgan Choson* (8, August, 1991) in Foreign Broadcast Information Service-East Asia Report (hereafter FBIS-EAS) 91-203 (October 21, 1991), p. 29.

⁴Yi Sang-Ok, widely regarded as the "godfather of the North Korean nuclear program," was trained as a chemical engineer at Kyoto Imperial University; Kyong Won-Ha is a nuclear engineer who worked at Los Alamos National Laboratories in the United States. *ibid.*, pp. 28-29, Young Sun Song, "The Korean Nuclear Issue," *Korea and World Affairs* (XV, 3, Fall, 1991), p. 476, James Adams, *South China Sunday Morning Post* (June 17, 1990), p. 7 in FBIS-EAS-90-117 (June 18, 1990), p. 11, and *Sin Tong-A*, in FBIS-EAS-92-020 (January 30, 1992), p. 32.

been involved in the production of radioactive materials for medical and scientific research.

Additional support seems to have been provided by North Korea's erstwhile allies. Pyongyang has purportedly had access to nuclear materials provided by East Germany and Romania.⁵ Indeed, as recently as May 1989, the East German Nuclear and Radioactive Safety Committee is reported to have entered into accords, with the North Korean Ministry of Atomic Power Ministry, that provided for the transfer of technology in electronics, chemical engineering, and machine manufacturing.⁶

In some cases, the DPRK was also able to purchase necessary materials directly from the West. In 1990, Degussa A.G., a German firm, was fined by the United States for allegedly providing Pyongyang with a shipment of zirconium, which is used in manufacturing uranium fuel rods. Leis Engineering G.m.b.H was investigated in 1991 by the German government "for shipping a specialized steel alloy to North Korea that could be used as a container for radioactive materials."⁷

To further improve the levels of North Korean technology, there are reports that North Korean nuclear scientists and engineers have cooperated with Third World countries interested in developing a nuclear device. One of these "joint ventures" may have been with Pakistan.⁸

For the most part, however, North Korean researchers have apparently focused on improving their indigenous nuclear capabilities. The first indications of growing Northern prowess was their increase

⁵Adams, *South China Sunday Morning Post*, p. 7 in FBIS-EAS-90-117 (June 18, 1990), p. 11.

⁶*Sin Tong-A*, in FBIS-EAS-92-020 (January 30, 1992), p. 32.

⁷David E. Sanger, "Data Raise Fears of Nuclear Moves by North Koreans," *The New York Times* (November 10, 1991).

⁸Cho Kap-Che "The Nuclear Game on the Korean Peninsula---North Korea's Atom Bomb Development and South Korea's Counter-Strategy," *Wolgan Choson* (April 4, 1990), in FBIS-EAS-90-122 (June 25, 1990), p. 27.

of the research reactor's capacity to 8 MW, using only domestic technology. Subsequently, work began in 1980 on a graphite-moderated, gas-cooled nuclear reactor, based on the British reactor at Calder Hall; it is believed to have gone on-line in 1987. Again, the materials involved are believed to be wholly indigenous, although the design, as noted, is modeled after a British reactor. The design of this facility indicates a certain degree of domestic engineering prowess, since it requires not only the capacity to design a nuclear reactor, but also the development of the expertise necessary to purify graphite for a moderator block.

In 1990, Japanese researchers announced that their analysis of French SPOT satellite photographs showed additional nuclear facilities under construction at Yongbyon.⁹ These reports indicated that a third nuclear reactor, in the 50-200 MW range, was under construction, evidently based on an old French design, although again wholly independent of external assistance. That reactor is thought to be close to completion. More recently, the North has also begun construction, with Soviet assistance, of a nuclear power plant containing four reactors near Shinpo on the east coast. This reactor complex is believed to have a total capacity of 1760 MW and was conditioned on North Korean accession to the NPT and an agreement to place the 30 MW reactor under IAEA inspection.¹⁰

Although this last power plant has received some Russian assistance, the rest of the Northern nuclear development program has been almost wholly indigenous. This indicates several things. In the first place, the North's Ministry of Atomic Power Industry has clearly attained a certain degree of sophistication. This is reflected in its ability to build two nuclear reactors without external assistance. Even given an initial foreign design, this is no easy task for a state that lacks

⁹Peter B. de Sedling, "Photos Indicate N. Korean Growth in Nuclear Ability," *Space News* (March 12-18, 1990), p. 1.

¹⁰Young Sun Song, "North Korea's Nuclear Issue," *Journal of Northeast Asian Studies* (X, 3, Fall, 1991), pp. 65-66.

the massive resources available even to the PRC or India, much less the United States, the UK., or the former Soviet Union.

More importantly, however the DPRK program provides evidence of a firm desire to remain free of any potential outside interference. At present, the DPRK nuclear program is virtually self-sufficient. The Calder Hall type reactor, for example, is a gas-graphite model. As the DPRK can produce its own graphite, the choice of this design alleviated the necessity to depend on the outside world for heavy water with which to moderate fissile reactions. Both of the North Korean-designed reactors can be fueled with natural uranium with a concentration of .5---.8%, which North Korean mines at Pyongchan can provide. Moreover, by choosing indigenous designs, presumably there is little prospect of shortages of the spare parts necessary to run these facilities.

Such an autarkic approach, of course, does not necessarily indicate a desire on the part of Pyongyang for anything more than nuclear power. Instead, the concern was, and remains, that the North seeks to reprocess spent nuclear fuel in order to extract the plutonium within. The Soviet-supplied reactors are much less useful as a source of plutonium, since the Soviets only lease their fuel rods, which would defeat any efforts at extracting the plutonium from spent fuel; instead, the first source would probably be the 30 MW reactor, which has been in operation since 1987.¹¹ Indeed, the "Calder Hall" reactor, with its graphite moderation, is particularly suited for the production of plutonium as part of its integral design.¹² As the North is already believed to have produced some 130-180 tons of nuclear waste from this reactor, reprocessing those wastes could provide it with at least 15 kg of plutonium extract, sufficient to fuel a number of nuclear devices.¹³ These concerns have been exacerbated by the 50-200 MW

¹¹Joseph S. Bermudez, Jr., "N Korea---Set to Join the 'Nuclear Club?',"*Jane's Defence Weekly* (September 23, 1989), p. 597.

¹²It is not, however, especially efficient for energy production. Gary Milhollin, "North Korea's Bomb," *The New York Times* (June 4, 1992).

¹³Yonhap News Service (Seoul, ROK, 1100 GMT, May 28, 1992), in FBIS-EAS-92-103 (May 28, 1992), p. 22.

reactor under construction at Yongbyon. With no evidence of connections to a power grid, and too large for standard scientific research, this reactor is believed to be dedicated to plutonium production.¹⁴

What has sparked much of the recent fears about the North was the discovery of a large facility near the 50-200 MW reactor at Pyongyang and part of the same complex. It was feared that this building housed a nuclear reprocessing facility. The presence of such a facility would mean that North Korea was far closer to being able to produce a nuclear weapon than was previously thought. Indeed, said one Japanese intelligence official on being shown US. satellite pictures of Yongbyon: "We had not taken the issue seriously, but the photographs were conclusive. Almost overnight, nuclear proliferation became our top security concern."¹⁵

Recent reports have raised additional concerns about Northern intentions in this regard. Even prior to Blix's inspection tour, North Korea had already confirmed that it had succeeded in producing a tiny quantity of plutonium. In comments to a visiting delegation from the Carnegie Endowment for International Peace, a spokesman for the North's Ministry of Atomic Energy Industry indicated that North Korea had extracted "a little bit of plutonium for experimental purposes."¹⁶

Blix's recent visit to Yongbyon only served to raise additional questions. He found, for example, that the facility in question was not so much an experimental laboratory, as Pyongyang has insisted, but a

¹⁴The IAEA Director General is reported to have seen transmission towers during his recent visit to Yongbyon. No previous reports, however, had indicated the presence of such towers prior to his visit. Hiroshi Hasegawa, "North Korea's Atomic Bomb Production Plants Probed by Artificial Satellites," *AERA* (March 19, 1991), pp. 6-9, in FBIS-EAS-91-090-A (May 9, 1991), p. 12, and Joseph S. Bermudez, Jr., "North Korea's Nuclear Programme," *Jane's Intelligence Review* (September, 1991), p. 408.

¹⁵Tai Ming Cheung, "Nuke Begets Nuke," *Far Eastern Economic Review* (June 4, 1992), p. 22.

¹⁶Kyodo News Service, (Tokyo, 1059 GMT, May 6, 1992) in FBIS-EAS-92-088 (May 6, 1992), p. 10.

reprocessing factory. "If it were in operation and complete, it would certainly in our terminology be called a reprocessing plant."¹⁷

Moreover, these facilities were not useful for purely civilian purposes.¹⁸ While Blix indicated that the reprocessing building was only 80% complete, and only 40% of its equipment was installed, this does not preclude the possibility that the North may have shifted the equipment to other locations.¹⁹ Indeed, US. intelligence had reported as early as February that convoys of North Korean trucks had been detected at the facilities, suggesting that Pyongyang had already begun moving equipment from Yongbyon in order to mislead inspectors as to its capabilities.²⁰

The North Korean Nuclear Program and Inspection Regimes

The possibility of such cheating, coupled with the uniquely closed nature of both the Northern regime and society, which minimizes the flow of information, has put a premium on opening the North to inspection. North Korea, however, has proven particularly reluctant to submit itself to inspections.

Although the DPRK became a member of the NPT in December 1985, and despite a commitment by all signatories to submit, within 18 months (extended an additional 18 months in Pyongyang's case due to an administrative error by the IAEA to December 1988), to the safeguards portion of the treaty, it was not until this year that Pyongyang finally agreed to join the full-scope IAEA safeguards. Instead, Pyongyang had long demanded, as a precondition to joining

¹⁷Choe Maeng-Ho, *Tong-A Ilbo* (Seoul, June 11, 1992), p. 1 in FBIS-EAS-92-113 (June 11, 1992), p. 14, and Kyodo News Service (Tokyo, 1245 GMT, May 16, 1992), in FBIS-EAS-92-096 (May 18, 1992), p. 1.

¹⁸Yonhap News Service (0005 GMT, June 16, 1992) in FBIS-EAS-92-116 (June 16, 1992), p. 17.

¹⁹Kyodo News Service (Tokyo, 1245 GMT, May 16, 1992), in FBIS-EAS-92-096 (May 18, 1992), p. 1.

²⁰R. Jeffrey Smith, "N. Koreans Accused of Arms Ploy," *The Washington Post* (February 28, 1992), p. 29.

the safeguards accord, that the United States remove its nuclear weapons from the Korean peninsula and, as important, withdraw its nuclear umbrella from the Republic of Korea.²¹ Seoul, too, had to renounce the extension of any American nuclear deterrent.²² At other times, North Korea also conditioned inspections on the removal of all American forces from the Korean peninsula and the suspension of the annual US.-South Korean Team Spirit military exercises before it would consider opening itself to outside inspections. In the course of diplomatic normalization talks with Japan, North Korea also demanded the establishment of relations before addressing the nuclear inspection question.²³ While the most extreme demands (withdrawal of all American forces, ending the American nuclear guarantee and Japanese recognition) were not met, nonetheless, Pyongyang did succeed in gaining its other objectives before allowing inspections. In September 1991, President Bush indicated the withdrawal of all American tactical nuclear weapons from overseas. Later that year, Team Spirit was suspended by Washington and Seoul. And in December, North and South Korea agreed on the denuclearization of the Korean peninsula. Only then did North Korea accede to the safeguards accord.²⁴

Even after agreeing to sign the safeguards accord in January, however, North Korea then claimed that it would require an additional three months (in order to ratify the agreement) before it could provide inspection materials. This continuous stalling has raised concerns in many quarters that it was intended to maximize the time available for completion of either reprocessing facilities or the concealment thereof. That the North has, in fact, been pursuing

²¹Andrew Mack, "Why Pyongyang's Nuclear Program Is Causing Concern," *Asia-Pacific Defence Reporter* (November, 1990), p. 16.

²²Steven R. Weisman, "North Korea Adds Barriers to A-Plant Inspections," *The New York Times* (October 24, 1991).

²³As recently as May 1992, North Korean negotiators called upon Japan to revive diplomatic ties if Pyongyang submitted to IAEA inspections. Kyodo News Service, (1257 GMT, May 13, 1992) in FBIS-EAS-92-094 (May 14, 1992), p. 5 and George Leopold and Naoaki Usui, "N. Korea Rejects Reactor Probes," *Defense News* (May 27, 1991), p. 4.

²⁴Young Sun Song, "North Korea's Nuclear Issue," p. 75.

plutonium extraction, as well as North Korea's obvious commitment of significant resources in this endeavor, has only served to strengthen such concerns.

Ironically, Pyongyang's acquiescence to the safeguards agreement has further exacerbated these fears, for on the list of Northern facilities provided to IAEA headquarters in Vienna were some 12 hitherto unknown nuclear projects, including an additional 50 MW nuclear plant under construction at Yongbyon, another 200 MW nuclear power plant in North Pyongan Province, and plans for three 635 MW reactors for a further nuclear power plant. In addition, the North indicated in its list that it is constructing two uranium enrichment facilities.²⁵ That such a large number of major facilities should come as a complete surprise is an indication not only of the porousness of the international community's ability to monitor hidden nuclear development programs, but also the inherent advantage of closed societies in hiding information. The possibility of further nuclear facilities, hitherto undetected, either because of their clandestine nature or else simply unnoticed, has been augmented.

Unfortunately, the IAEA inspections do not necessarily resolve the matter. In the first place, even allowing IAEA inspections does not necessarily preclude a state from conducting illegal nuclear research with impunity. IAEA inspectors may only visit those facilities that the inspected state admits to possessing. Thus, hidden facilities would remain undetected, if they are not reported to the IAEA. Indeed, according to Ko Yong-Hwan, a former North Korean diplomat who defected to the ROK, Pyongyang intends to follow precisely such a course; while it may be willing to allow inspections at Yongbyon, it will refuse to list nuclear-related facilities at Pakchon.²⁶

²⁵Seoul KBS-1 Radio Network (Seoul, 0300 GMT, May 6, 1992) in FBIS-EAS-92-088 (May 6, 1992), p. 22.

²⁶These facilities are purported to be underground as well. Kim Hye-Won, *The Korea Herald* (Seoul, November 7, 1992), p. 1, 2, in FBIS-EAS-91-216 (November 7, 1991), p. 26, Joseph Bermudez, "N. Korea on Way to 'Decisive' Weapon," *Jane's Defence Weekly* (October 12, 1991), p. 653, and "N. Korea May Have Second Nuclear Base," *Washington Times* (October 30, 1991).

In addition, as with Hans Blix's visit, the IAEA must give advance notice prior to inspectors' visits, thereby allowing states the opportunity to hide any clandestine nuclear programs co-located at open installations. Even at those installations that have been admitted by the owning state, inspectors are limited in their reports to information that cannot be construed as constituting "commercially sensitive information," and research may continue there on commercial applications of nuclear power. Thus, even covert programs, if they may be presented as commercially related efforts, may conceivably be openly displayed, as a "purloined letter" so to speak.²⁷

Thus, North Korean officials indicated to Blix that the "radiochemical" laboratory at Yongbyon was intended to aid in research on a breeder reactor and that, "without a guarantee for the introduction of advanced technology from abroad and stable supplies of nuclear fuel," they would continue such research into the development of a plutonium-based fuel cycle.²⁸ Nor would stockpiles of plutonium, in and of themselves, be illegal.²⁹ These shortcomings, coming on the heels of the discovery of widespread cheating and clandestine operations by Iraq (as marked most recently by the July 1992 standoff in Baghdad between inspectors and Iraqi officials), have only served to confirm that the IAEA's inspection system is, at best, inadequate against states determined to develop their own nuclear capability.

South Korean and American concerns are exacerbated by the fact that, once a certain threshold is passed, the only infallible means by which it could then be proven that a nation had developed a nuclear weapons capability is if it should choose to conduct a nuclear test. It may be possible, if North Korea's reprocessing schemes are sufficiently

²⁷Discussion with Japanese diplomatic officials in October, 1991, and Tai Ming Cheung, "Ready for Inspection," *Far Eastern Economic Review* (June 4, 1992), p. 25.

²⁸Choe Maeng-ho, *Tong-A Ilbo* in FBIS-EAS-92-113 (June 11, 1992), p. 14.

²⁹Leopold and Usui, "N. Korea Rejects," p. 4.

advanced, that the DPRK may follow in the footsteps of Israel, Pakistan and, to some extent, India, i.e., that Pyongyang might possess a "bomb in the basement," an unprovable assumption, serving as a potential "bomb in being." Indeed, it has been reported that North Korea had already completed developing a detonator for a nuclear weapon (one of the most difficult parts of actually building an atomic weapon) as of February 1990. "North Korea did not conduct nuclear tests because it wanted to prevent international nuclear control bodies from knowing about the development."³⁰

Coupled with North Korea's uniquely closed nature, this near-complete absence of objective information vis-a-vis the North Korean program has caused Seoul to seek its own inspection regime. The bilateral inspection effort, allowed under the "Joint Declaration for a Non-Nuclear Korean Peninsula", unlike that of the IAEA, would include not only regularly scheduled inspections, but also "special" or "challenge" inspections. These would require only 24 hours' notice and would not be limited to facilities listed by either side. The South's proposals on nuclear inspection regulations have been met by vehement Northern opposition. The North, instead, has proposed a minimum of five days' notice for challenge inspections. In addition, it has wanted to keep military installations off-limits.³¹ The various meetings of the Joint Nuclear Control Commission, established under the Joint Declaration for the establishment of the bilateral inspection regime, have deadlocked on this issue.

Motivations of the North Korean Program

Although the evidence has been mounting that the North has the technical capabilities with which to construct a nuclear weapon, and

³⁰*Argumenty i Fakty*, reporting on a purported KGB intelligence assessment of the North's nuclear capability. Kyodo News Service (0443 GMT, March 15, 1992), in FBIS-EAS-92-051 (March 16, 1992), pp. 12-13.

³¹Kim Chin-Kuk, *Chungang Ilbo* (Seoul, April 5, 1992), p. 2 in FBIS-EAS-92-067 (April 7, 1992), p. 13 and Kim Hye-Won, *The Korea Herald* (May 29, 1992) in FBIS-EAS-92-104 (May 29, 1992), p. 25.

the North's constant stalling on inspections only reinforces suspicions, capability does not necessarily imply intent.³² Thus, it is important to consider the motivations behind a North Korean nuclear weapons capability. In particular, if a strategy is to be formulated by which Pyongyang may be dissuaded from pursuing a nuclear development program, then its rationales must be understood.

If the North is, in fact, pursuing a nuclear capability, it may be motivated by one or more concerns. These include: preserving international prestige, particularly in the face of the South's "Northern Diplomacy"; maintaining the regime's legitimacy; and/or improving the North's military situation.

1) Preserving International Prestige

Whether or not there is a working North Korean nuclear capability, in the first place even the possibility of such a capacity would save Pyongyang from sheer irrelevancy on the international stage. Such a fate looms particularly large in the wake of South Korea's remarkably successful "Northern Diplomacy." In combination with the collapse of the Soviet Union and lessening of Sino-Soviet tensions, these developments have allowed the ROK to become as important a diplomatic partner, and a much more important economic partner, with Beijing and Moscow as the DPRK.³³ The threat of being eclipsed by its southern counterpart has been reduced, however, in one stroke as Kim Il-Sung has gained a bargaining chip that compels Washington and Tokyo, and even Beijing and Moscow, to deal with him.

³²Although reports that North Korea had tested detonating devices for nuclear weapons would, in fact, imply a definite impetus towards developing a nuclear capability. "Seoul Says North Korea Tested Nuclear Detonator," *International Herald Tribune* (June 28, 1991).

³³"Northern Diplomacy" refers to the diplomatic initiatives of South Korean President Roh Tae-Woo to formulate links with China and the Soviet Union. As such, it is somewhat similar to Willi Brandt's *Ostpolitik*, and is often referred to as *Nordpolitik*.

Indeed, one could make the argument that nuclear diplomacy in this case has **already** succeeded, without the North being required to so much as test a nuclear warhead; by virtue of the mere possibility of an ongoing Northern nuclear program, the United States and the ROK have met such long-standing North Korean demands as withdrawing all American nuclear forces from the Korean peninsula and suspending the annual Team Spirit exercises (at least for one year). Moreover, the United States and Japan have been compelled to take North Korea into account in any calculations vis-a-vis the future of the Korean peninsula.

At the same time, despite the success of the South's *Nordpolitik*, the threat of a Northern nuclear capability has helped Pyongyang retain a certain hold on its erstwhile allies, as neither China nor the former Soviet Union can afford the potential for instability on their border. This has served as a direct counterpoise to the declining importance of Pyongyang to both Moscow and Beijing.

Even before the coup in August 1991 and the subsequent disintegration of the USSR, for example, the Soviets had already begun to make moves towards a more "even-handed" approach towards the peninsula. The growth of the South's economic and technological prowess, and the prospect of gaining access to hard currency, inevitably made the ROK a far more suitable partner than the stagnant DPRK. The North has clearly attempted to utilize its military capabilities vis-a-vis the ROK as a means of slowing Soviet (and now Russian) distancing. Thus, as early as September 1990, North Korean Foreign Minister Kim Young-Nam evidently warned Moscow that "it would begin developing nuclear weapons independently if Moscow and Seoul normalized relations."³⁴ Subsequent events in the wake of the Soviet collapse can only have confirmed the gloomiest of Northern predictions. In October 1991, for example, the Soviets reportedly

³⁴Reuter newswire report, January 2, 1991 in DoD Current News (January 2, 1991) and Kensuke Ebata, "N Korea 'Will Build Nuclear Weapons,'" *Jane's Defence Weekly* (January 12, 1991), p. 46.

halted all further transfers of offensive weaponry to the North.³⁵ In December, the Russian ambassador to the ROK indicated that Moscow intended to reexamine the DPRK-USSR Defense Treaty.³⁶ This past February, Russia apparently initiated negotiations with the DPRK to remove all military clauses from the 1961 Treaty of Friendship and Mutual Assistance between the two states.³⁷

Nor has Beijing shown any interest in replacing Moscow as a primary patron, either political, military, or economic, of Pyongyang. In April, both China and the Soviet Union urged North Korea to accede to the safeguards portion of the NPT.³⁸ Such a move, as well as China's reluctance to veto the ROK's application for UN membership, sent an unmistakable signal to North Korea that Chinese patronage would no longer be as automatic as it had been in the past. The growth in Sino-South Korean trade, which last year reached \$5.7 billion, can only have further weakened Chinese commitments to the North. And although China has generally proven unwilling to join in the worldwide condemnation of the North's nuclear program, it has been more over concern about forcing Pyongyang into a corner, rather than any fundamental difference in objective.³⁹ Indeed, during Kim Il-Sung's October 1991 visit to the PRC, Chinese leaders are reported to have taken the Northern leader to task for his veiled nuclear threats, and told Kim Il-Sung to "concentrate on building up his country's disastrous economy."⁴⁰ Nor can reports of impending formal Sino-

³⁵"Soviets Cut Arms Flow to North Korea," *International Herald Tribune* (October 31, 1991).

³⁶Seoul KBS-1 Radio Network (Seoul, 0200 GMT, December 28, 1991), in FBIS-EAS-91-250 (December 30, 1991), p. 31.

³⁷Yonhap News Service (Seoul, 0251 GMT, February 21, 1992) in FBIS-EAS-92-035 (February 21, 1992), p. 29.

³⁸Yonhap News Service (Seoul, 0532 GMT, April 16, 1992) in FBIS-EAS-91-073 (April 16, 1992), p. 19.

³⁹"Alarm Grows over North Korean Nuclear Threat," *Financial Times* (November 14, 1991).

⁴⁰Edward Neilan, "China's Rebuke to N. Korea Raises Disarmament Hopes," *Washington Times* (October 21, 1991), and Cayman Kim, Kyodo News Service (Tokyo, 1155 GMT, October 7, 1991) in FBIS-EAS-91-196 (October 9, 1991), p. 17.

South Korean diplomatic ties be dismissed with equanimity in Pyongyang.⁴¹

In light of such declining influence on its former patrons, highlighted by the absence of Chinese and Russian envoys at Kim Jong-Il's 50th birthday celebrations, the North may well have chosen the nuclear route as one means of ensuring that its opinions are at least considered, if not consulted, prior to any far-reaching changes.⁴² Indeed, North Korea deliberately warned the Soviet Union of its nuclear intentions prior to Moscow's formal establishment of ties with Seoul, and is purported to have informed China, as well, that it would equip itself with nuclear weapons in order to defend its *juche* (*juche* refers to Kim Il-Sung's policy of complete self-reliance for the DPRK) system from external influences.⁴³ It is possible that Beijing, unlike Moscow, has thus far not formalized relations with Seoul precisely in order to forestall further North Korean nuclear developments.

The importance of retaining relevance is even greater in inter-Korean relations. The North has recognized that the disappearance of East Germany directly threatens its own survival. The possibility of absorption by the South has been a source of growing concern to the North, evidenced by frequent condemnations of "German-style reunification" on the part of the North Korean press. Although the North persists in calling for immediate reunification, this is now couched in terms of a "confederal republic," with emphasis upon the preservation of both systems, rather than unification under a single system. Indeed, a slogan given growing prominence in the past year has been "Let us live our own way."

⁴¹Yvonne Preston, "South Korea and China Close to Diplomatic Links," *Financial Times* (April 16-17, 1992).

⁴²Toshiichiro Tsunaya, *Mainichi Shimbun* (Morning Ed., February 18, 1992) in FBIS-EAS-92-034-A (February 20, 1992), p. 13.

⁴³AFP (Hong Kong, 0956 GMT, September 25, 1991) in FBIS-CHI-91-186 (September 25, 1991), p. 8 and Chon Taek-Won, *Chungang Ilbo* (September 25, 1991), p. 1 in FBIS-EAS-91-186 (September 25, 1991), p. 19.

Such efforts to ensure the independence of the North would be reinforced by a nuclear capability. At a minimum, it complicates any Southern effort at reunification, since absorption of a nuclear power has never yet been attempted and undoubtedly would be very problematic, certainly in comparison with Germany. The possibility of a North Korean nuclear device is likely therefore to delay any South Korean attempt at absorbing the North.⁴⁴ Perhaps most important, a Northern nuclear capability would forestall any Southern effort to absorb the North in a period of Northern instability, e.g., in the course of the leadership transition.

An independent nuclear capability would also provide the North with political leverage in the course of any negotiations on reunification. At a minimum, a Northern nuclear capability would mean that "no matter what you [the South] have now and how well you live, we have the weapons to destroy you."⁴⁵ It would also provide the North with several bargaining chips. One would involve the orderly transfer of nuclear command and control, which would undoubtedly be a high priority for all concerned. Possession of nuclear weapons, Pyongyang suggested to Beijing, would, therefore, forestall efforts by the South or the United States to delegitimize the Northern regime, since that might lead to instability within a nuclear-capable power.⁴⁶ Instead, the North would have to be consulted (and presumably reassured in a variety of ways), thereby giving it a voice in the proceedings far greater than that enjoyed by the East German leadership.

An indigenous nuclear force might also somewhat offset the South's economic and diplomatic achievements. At present, the South exceeds the North in virtually every economic index, thereby giving

⁴⁴Ironically, the South has shown increasing hesitation about reunifying Korea in any case, in light of the massive costs likely to be involved. See, for example, Shim Jae Hoon, "The Price of Unity," *Far Eastern Economic Review* (March 26, 1992), pp. 54-56.

⁴⁵Tai Ming Cheung, "Bomb and Bombast," *Far Eastern Economic Review* (June 4, 1992), p. 24.

⁴⁶Chon Taek-Won, *Chungang Ilbo* (September 25, 1991), p. 1 in FBIS-EAS-91-186 (September 25, 1991), p. 19.

Seoul the means with which to contemplate absorbing the North. The South's GNP, for example, is 10 times that of the North; the GNP per capita is five times. In steel, cement, and power generation, not only does the ROK produce more than the DPRK, it produces more than North Korea's production **targets**.⁴⁷ Such a gulf can only serve to increase the appeal of "German-style reunification" to the North Koreans, particularly in the wake of the demise of Kim Il-Sung. A nuclear weapon would serve as concrete evidence of the gains of the North under Kim Il-Sung, underscoring Northern legitimacy.

Indeed, in this regard, as noted previously, North Korea already has achieved its goal; it has already secured for itself a significant role on the peninsular, if not regional, stage through the mere existence of a potential nuclear effort.

2) Maintaining Legitimacy

An alternative motivation for a North Korean nuclear development program might be the preservation of North Korea, and more importantly, the Kim dynasty. A nuclear capability might limit prospects for domestic instability, particularly in the course of an unprecedented dynastic succession, as there would be domestic concerns about command and control, similar to those noted above. More importantly, however, a North Korean nuclear force would underscore the legitimacy of the Kim dynasty, hopefully removing the roots of such instability.

In the first place, it might help improve some of the economic factors that are currently at work which bely the claims of *juche*. After 40 years of promising the creation, through *juche*, of "a society where all the people can enjoy meals of rice and meat soup, wear silk clothes and live in tile-roofed houses," the North's moribund economic

⁴⁷Mark Clifford, "A Rough Fit," *Far Eastern Economic Review* (March 26, 1992), p. 57, and Woo Sik Kee, "The Path Towards a Unified Korean Economy," *Korea and World Affairs* (Spring 1991), p. 24.

condition threatens to undermine the economic rationale, and, therefore, the ideological underpinnings of Kim Il-Sung's regime. Creation of an indigenous nuclear force might allow the North to improve its economic situation by helping it to **reduce** defense spending.

At present, the DPRK is believed to spend at least 20-25% of its GNP on defense. This has undoubtedly been a factor in its economic stagnation, exacerbated by the recent loss of foreign economic patronage and the necessity of shifting all foreign trade to hard-currency terms. The North is probably, therefore, interested in reducing its military expenditures, although presumably not at the expense of its own security. Towards this end, a North Korean nuclear capability would serve as the ultimate "economy of force" maneuver. Like the Eisenhower "New Look," such a development could reduce the necessity for continued massive expenditures in conventional weaponry, without reducing North Korea's security posture, since it is unlikely that even the North believes the South or the United States foolhardy enough to attack a nuclear-armed DPRK. The funds thus freed could then be utilized to revive the currently comatose economy.

In addition, the North could sell its nuclear expertise (particularly if it was successful in developing a weapons capability), or barter it for economic necessities, such as oil. North Korean exports are already evidently dominated by sales of weapons, particularly its SCUD missiles.⁴⁸ A transaction along these lines would have the additional benefit of being particularly difficult to frustrate, since it would not even require the transfer of any physical items; Pyongyang could simply post its nuclear personnel overseas. Given the desire of Colonel Qaddafi, among others, to develop an "Islamic bomb," North Korea would almost certainly find customers for its knowledge, willing to pay handsomely in hard currencies, oil, or other necessities. Such a

⁴⁸In 1987, it was estimated that 51% of the DPRK's export earnings were from its initial sale of SCUDs. Kim Chun-Pom, "State of North Korea's Nuclear and Missile Technology," *Chungang Ilbo* (March 19, 1992), in FBIS-EAS-92-055 (March 20, 1992), p. 8.

move might well prove particularly attractive, since, in one stroke, the North would have gained the means to revive its currently moribund economy without detracting one iota from its security.

Such a twin triumph for *juche*, i.e., creation of a domestic nuclear capability and the resuscitation of the economy, would provide significant political ammunition for Kim Il-Sung and his stalwarts. It would provide proof of the success of Kim's political philosophy of self-sufficiency, in the face of reform throughout the socialist world, thus ensuring continued reverence in the North of "Kim Il-Sung thought."

The benefits of such continued adherence, moreover, would accrue not only to Kim Il-Sung, but also to his son. The decision to pursue an unprecedented dynastic succession of power has, it is reported, already engendered domestic opposition. This is exacerbated by the absence of military experience and complete lack of any charisma on the part of Kim Jong-Il. The veracity of Kimilsungism, as evidenced by the economic and technological success of an indigenous bomb, would presumably ease any opposition to the senior Kim's decision to pass his power to his son. Indeed, were these achievements credited to Kim Jong-Il, they might even serve as the legitimizing factor by which the son would succeed the senior Kim. It is, therefore, not surprising that the nuclear development program is purportedly under the direct command of Kim Jong-Il.⁴⁹

3) Improving Its Military Stance

A final motivation for Northern nuclear development would be concerns about its military standing. The recent American victory in the Gulf can only have made the North nervous, as the war indicated the superiority of the South's weaponry, certainly as compared with that of the Korean People's Army (which has nowhere near the array of advanced Soviet weaponry as the Iraqis enjoyed). This is not to suggest

⁴⁹Kyodo News Service, March 15, 1992, in FBIS-EAS-92-051 (March 16, 1992), p. 13.

that the North necessarily fears the prospect of a Southern invasion northwards. Nonetheless, a prudent Northern commander would have to at least factor into his calculations the possibility that, for example, in the wake of Kim Il-Sung's demise and possible Northern unrest, the South might choose to intervene.

Along these lines, a North Korean nuclear capability may serve as an insurance policy against the possibility of a Southern nuclear capability. In light of the nuclear development program of then-President Park Chung-Hee, undertaken when President Jimmy Carter proposed the withdrawal of all American ground forces in the late 1970's, this is not necessarily implausible. In particular, as the United States withdraws its nuclear deterrent and begins to reduce its forces on the peninsula, the North may, in fact, fear a revived Southern nuclear development program.

The most worrisome possibility, however, is that the North is actually motivated by the fear that, as the technological and military balance on the peninsula shifts in favor of the South, that the **North's** military options may be rapidly foreclosed. Nor is this incongruent with the North's own penchant for the use of force. As recently as May 22, 1992, a Northern incursion was turned back (causing three North Korean deaths and several Southern casualties). There is the possibility, then, that the North has purely military motives in mind as it has endeavored to develop its nuclear capabilities.

North Korean Delivery Capabilities

Such a possibility is moot, of course, unless the North is likely to be able to deliver any nuclear weapons it might possess. The North's arsenal fields a number of varied systems, all of which are likely to be sufficient to deliver a nuclear weapon.

Foremost among these are tactical ballistic missiles. The Korean People's Army (KPA) can deploy one FROG-5 and one FROG-7A missile

regiments. These systems have a range of 60-70 km and are believed to be deployed within range of Seoul. In addition, the KPA can also deploy one SCUD-B missile regiment, with approximately 12 transporter-erector-launchers (TEs). These are believed to be based in underground bunkers, close to presurveyed launch sites.⁵⁰ The original SCUD-B, with its range of 280-300 km, would place targets as far south as the Taegu-Kwangju line at risk. If North Korea has pursued a product-improved SCUD-C, with ranges in the 450-600 km range, this would allow North Korea to hit not only all of South Korea, but also Western Honshu and Kyushu islands in Japan. There have also been persistent reports of a new missile, called the Ro Dong-1, expected to have a range of 1000 km, which would place all of South Korea and Japan at risk.⁵¹

The KPA also fields a large air force, although most of its aircraft are of 1960's vintage. Since the early 1980's, however, there has been a gradual modernization, with the Soviets providing some 30 MiG-29 *Fulcrum* and 46 MiG-23 *Flogger* fighters, in addition to 36 Su-25 *Frogfoot* bombers. The Chinese have also provided an additional 50 Shenyang F-6 fighters and 40 A-5C *Fantan* attack aircraft (both based on heavily modified MiG-19 planforms).⁵² It is unclear whether any of these airframes has been modified to deliver nuclear payloads.

This array of systems poses a threat to the ROK that cannot necessarily be ameliorated by the technological superiority of the South Korean and American military forces. As the bulk of North Korean aircraft and missile forces is deployed close to the DMZ (along with two thirds of the North's overall forces), the warning time available to the South Korean government can be measured in seconds. Similarly, of the 109 active airfields/bases in the ROK, 91 are within operational range of the unmodified SCUD-B, and 48 are within the

⁵⁰Joseph S. Bermudez, Jr. and W. Seth Carus, "The North Korean 'SCUD B' Programme," *Jane's Soviet Intelligence Review* (April, 1989), p. 179-180.

⁵¹Paul Lewis and David Silverberg, "West Worries China Will Sell Missile," *Defense News* (March 16, 1992), p. 45.

⁵²International Institute for Strategic Studies, *The Military Balance 1991-1992* (London, England, 1991), pp. 168-169.

operational range of the FROG-5/7A. The possibility is, therefore, open to a decapitating and/or disarming first-strike, even without recourse to nuclear warheads.⁵³ With the SCUD-C and the Ro Dong, that threat extends to Japan as well.

Finally, the North Koreans have the world's largest special forces contingent. These are believed to number some 80,000 men. They are equipped with mini-submarines, reportedly including the West German "Type 100" design, as well as with high-speed semi-submersible craft designed for infiltration and landing operations.⁵⁴ Northern commando forces are also believed to be equipped with equipment utilized by Southern forces, including McDonnell Douglas-500 *Defender* helicopters.

Such commando units have already been utilized in a number of suicide missions against the South, including the January 1968 assassination attempt against South Korean President Park Chung Hee and the 1983 Rangoon bombing that was aimed at President Chun Doo Hwan and which decimated virtually the entire South Korean cabinet. These forces are also believed to be regularly used to probe Southern defenses, as in the most recent incident in May 1992. It would not be surprising if commando forces were utilized to infiltrate small "back-pack" nuclear weapons against southern or even Japanese targets. Evidence that North Korean commandos have kidnapped Japanese nationals also points towards the possibility of efforts either to destroy, or else to hold hostage, Japanese military and population centers. Alternatively, with the provision of Southern-style equipment, it would not be beyond the realm of possibility for the North to stage a nuclear incident in the South with masquerading troops and equipment.

How might such capabilities be useful from a military perspective? They would, at a minimum, remove the possibility of a wholly one-sided series of nuclear threats, such as Presidents Truman

⁵³The North is believed to also possess a chemical capability.

⁵⁴Gene D. Tracey, "North Korea's Naval Forces," *Asian Defence Journal* (July, 1990), p. 35.

and Eisenhower and General MacArthur set forth in 1950-1953 in their respective efforts to end the Korean War.⁵⁵ A Northern nuclear capability, at a minimum, would probably ensure that the United States could not simply utilize a nuclear threat again to force the North to suspend military operations. Instead, a North Korean nuclear capability would hold Southern population centers as much at risk as the United States could threaten the North's. Such an achievement would also serve an ideological purpose, since only in the area of defense has the North been unable to claim complete "self-reliance," depending upon the Soviet Union, and to a lesser extent China, to provide a nuclear umbrella as a counterweight to the long-standing American nuclear commitment to the ROK.⁵⁶ The achievement of a domestic nuclear capability would rectify this long-standing gap in the independent philosophy.

In addition, the mere presence of a North Korean nuclear capability might help ensure success in war by entering an unpredictable, but weighty, factor into Southern defense calculations. It would, on the one hand, forestall the possibility of such operational/strategic surprises as another Inchon landing, for example. In the face of a nuclear-armed opponent, an amphibious assault, already one of the most difficult military operations, would be made even more risky, perhaps prohibitively so, given the attendant masses of shipping, concentration of forces, etc. It would also compel American and South Korean defense planners to rethink many of their logistical contingency plans. South Korean port facilities would prove most lucrative potential targets for Northern nuclear weapons, and the mere threat of an attack would undoubtedly influence the planning of the Combined Forces Command Staff.

⁵⁵Bruce Cumings, "Spring Thaw for Korea's Cold War?" *The Bulletin of Atomic Scientists* (April, 1992), pp. 18-19.

⁵⁶Although, in reality, the degree of *juche* in many areas of life, including the provision of locomotives, heavy machinery, etc., has always been open to question.

A North Korean nuclear capability could also be used to constrain American options by threatening Japanese military installations that would be beyond the effective range of conventional weapons. As there are several important links in the US. logistical chain that run through Japan, such a threat could be quite potent, as it would probably influence American military plans to reinforce the ROK. Such threats might also force the Japanese government to rethink its commitment to cooperate in the defense of the ROK, since North Korea could also hold Japanese population centers hostage. Tokyo may not be prepared to allow UN. forces to transit Japanese territory, or even air- and sea-space, if the possibility exists that the North may attack the Home Islands with nuclear weapons, thereby significantly complicating and disrupting the defensive plans of the ROK and affiliated US. and UN. commands.

Alternatively, a Northern nuclear capability, presuming that the North was prepared to sanction their actual use (as opposed to simply threatening such), would serve as a counterpoint to the South's technologically more sophisticated military. If the South, equipped with smart weapons and supported by the American panoply of even more advanced smart and even "brilliant" munitions, should prove too difficult to overcome, the North, having opened hostilities, could always consider the option of further escalation. Along these lines, a nuclear capability might also enable the North to secure its strategic objectives, e.g., the capture of Seoul (which holds 25% of the South's population and is the intellectual and commercial, as well as political, center). How well would the UN. Command fight if the North were to threaten that continued resistance would lead to a Northern use of nuclear weapons against Seoul?

Finally, a nuclear weapon would serve as the ultimate guarantor of regime survival, even in the wake of a failed war. The possession of a nuclear capability would compel the US., UN. and South Korean forces to pause before crossing the DMZ. In light of the declining Chinese commitment to the DPRK, such an ultimate deterrent would replace

the possibility of Chinese intervention to serve as the means of ensuring the inviolability of the North.

Potential Policy Responses

It is possible, of course, in the absence of conclusive evidence, to believe that the North has no desire to develop a nuclear weapon, but is only interested in developing nuclear energy. Due to energy shortages, nearly half the nation's industry is reportedly idle or else operating far below capacity.⁵⁷ In this case, one might even choose to provide the North with nuclear power plants and power plant technology in exchange for wide-ranging inspections.⁵⁸ In light of the evidence of both intentions and at least potential weapons production capability, it would be more prudent to presume that the North is in pursuit of a nuclear weapons capability. If the DPRK is in fact embarked upon the development of nuclear weapons, for one or more of the above reasons, what are the possible policy responses?

Ideally, of course, the rationales would be addressed, thereby obviating North Korea's perceived need for nuclear weapons. Unfortunately, this is far easier said than done. In the first place, in light of the opaque nature of the North's decision-making processes, it is simply not possible to know, with any degree of certainty, which rationale, or combination thereof, if, indeed, any of the ones discussed above, has driven the Northern nuclear development program.

As important, few of these potential motivating factors can be addressed by the United States or the ROK. While the North has enumerated various demands at various times that might apply to the military rationales, e.g., removing the American nuclear guarantee,

⁵⁷Andrew Mack, "North Korea and the Bomb," *Foreign Policy* (83, Summer, 1991), p. 94.

⁵⁸Indeed, North Korea recently suggested that it would abandon its plutonium reprocessing plans if the IAEA, U.S., and Japan would provide nuclear power plants. "N. Korean Nuclear Proposal," *Washington Post* (June 8, 1992) and "N. Korea Seeks Deal on Nuclear Technology," *Washington Times* (June 12, 1992).

withdrawing all American forces, reducing South Korean military forces, none of these can be achieved without placing the ROK at risk. Nor would compliance with any of these demands fundamentally alter any of the considerations of preserving legitimacy, which are, for the most part, based upon wholly North Korean considerations or international prestige. Thus, even if the South were to meet the North's demands, the DPRK might still have reason to pursue a nuclear capability. Short of reunification on Northern terms, then, there is no means by which, with certainty, Northern motivations can be addressed.

Nor is there any legal means of eliminating the North's nuclear capabilities. While the US. has backed IAEA inspections, and supported the ROK in its quest for bilateral inspections, there is no way that Washington can compel the North to submit to wide-ranging inspections. Even if the inspections were to discover a full-fledged nuclear weapons development program, North Korea cannot be legally compelled to suspend such a program. The DPRK, after all, is not a prostrate Iraq, defeated in a full-scale war. The legal justifications for forcing the North to cease and desist are simply not present.

The ability of the West to persuade or coerce the North is also quite weak, far weaker than, for example, in the case of Iraq. In the first place, North Korea is already diplomatically isolated; it is unclear to what extent that isolation can be intensified. Moreover, while Washington, Beijing, and Moscow, as well as Seoul and Tokyo, are all agreed that the North should be discouraged from developing a nuclear arsenal, it is unclear the extent to which some of these capitals, particularly Beijing, are prepared to try and implement such a policy. The primary peaceful means of coercion rests with an embargo on trade with North Korea. It is unlikely at best, however, that the PRC is prepared to support any vote (including abstaining) in the UN Security Council for a comprehensive embargo of the North. Even presuming that such an embargo could somehow be implemented, such a weapon, of questionable efficacy against even a defeated Iraq, as seen in the continuing defiance exhibited by Baghdad, is even more

blunted vis-a-vis North Korea. It is unclear to what extent a hermit state can be successfully embargoed. North Korean trade with the outside world is minimal at best, amounting to a paltry \$4.6 billion in 1990.⁵⁹ Little of that trade, most of which is conducted with the PRC, can be directly affected by either Seoul or Washington. While the North has been seeking economic assistance from Japan and trying to expand its foreign trade, Pyongyang has clearly demonstrated its willingness to forego such aid rather than submit to inspections.⁶⁰ Suspension of its program is even more moot. This does not, of course, even address the question of Chinese compliance with an embargo, either as a direct trading partner or as a conduit for goods from other nations, particularly those eager to gain North Korean nuclear expertise.

American Response Options

In light of these considerations, the United States is unlikely to be able to persuade the DPRK to abandon its nuclear development program. What, then, are Washington's remaining options?

The most proactive option, i.e., launching an attack against the North's nuclear facilities, is probably the least viable one. In the first place, there is no certainty that the United States can locate all of the North's nuclear facilities. The difficulties that faced American forces as they sought to locate and destroy Iraqi nuclear research and development sites, and their low rate of success, give but a foretaste of the daunting problems involved in any such effort against North Korea, with its more mountainous terrain and less well-known infrastructure. Nor is it clear that the DPRK's facilities, even if they could all be located, can be destroyed, given the high probability that at least some

⁵⁹Mark Clifford, "Opening Up the Clam," *Far Eastern Economic Review* (March 26, 1992), p. 59.

⁶⁰The ROK, for example, has already suspended trade and other economic exchanges with the DPRK, pending a satisfactory resolution of the inspection issue. Kim Hye Won, *The Korea Herald*, (May 29, 1992) in FBIS-EAS-92-104 (May 29, 1992), pp. 25-26.

are located underground. Most important, any such effort would almost certainly trigger a North Korean reaction. The cost-effectiveness of triggering a war on the Korean peninsula in order to destroy North Korean nuclear facilities is uncertain at best. Nor is the ROK likely to sanction such an effort, particularly in light of the probable costs.

Therefore, the more likely (and arguably preferable) American option is to retain its current stance pending some sort of change in North Korean policies. That is, the US. will continue to pressure North Korea to submit to wide-ranging IAEA and South Korean inspections while maintaining the current American forces in the ROK, suspending all further withdrawals. Such a policy, although reactive, is nonetheless attractive. It is stabilizing, particularly if it is reinforced by a clear warning to Pyongyang that any North Korean nuclear attack on an American ally (i.e., the ROK or Japan) will elicit a direct American response. It is unlikely that the North would, in the wake of the Gulf War, imagine that it could attack the South, even with nuclear weapons, and not face a devastating American reply.

As important, this policy allays Southern concerns by underscoring the American commitment, both political and military. Towards this end, it might behoove the US., should Pyongyang appear on the verge of developing a working nuclear weapons capability, to underscore its commitment by increasing the deployment of forces to the Korean peninsula (e.g., F-111 and F-117 strike aircraft, or *Patriot* anti-aircraft batteries) or even reintroducing, with South Korean permission of course, tactical nuclear weapons to the Korean peninsula. While such moves would not necessarily improve South Korea's military situation in a concrete manner against a nuclear-armed North Korea, they would serve to underscore the American commitment and improve the credibility of the American deterrent. They might even be sufficiently reassuring to obviate any Southern need to undertake indigenous measures to balance the North.

Nor is the current policy particularly onerous. At present, the entire US. Forces Korea (USFK) consists of only a single infantry division in the ROK and approximately five squadrons of aircraft. This is supported by American forces in Japan.⁶¹ In both South Korea and Japan, the host nations have made major efforts to keep American costs down, providing very high levels of host nation support. Japanese support for the USFJ contingent, for example, outstrips that of any NATO nation. Even deploying additional forces (primarily the US. Air Force) would not necessarily increase costs beyond that associated with physical deployment, since the units themselves would already be extant.

The primary drawback to such a policy is that it is predicated on the assumption that the United States will choose to retain a major presence in the Western Pacific. This is by no means certain. American isolationism is likely to be particularly strong in the event of continued economic weakness. Despite the relative low cost of maintaining the American presence in Korea, if economic conditions decline, and especially if the American balance of trade with the region continues to deteriorate, Congress may not be prepared to maintain even the current level of forces, regardless of North Korean nuclear capabilities. Such a mood would be especially heightened if the ROK is perceived as undercutting American economic prosperity (e.g., if Daewoo's workers are perceived as displacing Detroit's). In sum, any draw-down of the American force requirement would be the result of domestic economic (and therefore political) pressures, rather than the inherent costs of stationing forces in Korea (and Asia generally).

Such sentiments would be further exacerbated in the event of increased local pressures for an American withdrawal. American willingness to defend such an "ungrateful" ally is unlikely to be high. Calls for a US. pullout from certain elements of the South Korean body

⁶¹Although most of these forces also have other tasks, including defending Japan itself, certain bases in Japan, as noted previously, are specifically committed to assist in the defense of South Korea as part of the U.N. Logistics Command.

politic are not entirely unlikely (although almost certainly not from the ruling party), since, while the American presence is acknowledged as assisting in the defense of the ROK, it is also an irritant to nationalist sentiments, particularly those of the South Korean left. Among Korean youth, there is also a widespread perception that the American presence has prevented reunification and heightened tensions between the two Koreas. Removal of the USFK would alleviate many, if not most, of the problems associated with inter-Korean hostility, in both their respective views. Finally, any reintroduction of American nuclear weapons holds at least the potential of engendering significant hostility from various elements of the South Korean polity.

It is also unclear precisely what effect continuing the current policy might have on the North if Pyongyang succeeds in developing a nuclear capability. The North may choose to exploit an ongoing American presence as an excuse to end all inspections, IAEA or bilateral, or even withdraw from the NPT, thereby facilitating its production capacities.⁶² More worrisome, the current American policy, even if wholly credible, may not be sufficient to dissuade a nuclear-armed DPRK. Given its willingness to resort to violence, including against Americans (e.g., the 1976 tree-cutting incident), and its unpredictability, exacerbated by its closed political system, it is simply not possible to determine, with any degree of certainty, what factors enter into Pyongyang's current calculations of deterrence. This would only be more true if the North possessed a working nuclear weapon. In particular, if the DPRK could thereby hold **American** population centers at risk (e.g., through covert deployment of a nuclear device), American deterrent power might be far weaker than expected.

⁶²A long-standing North Korean demand has been the withdrawal of all American forces as well as any nuclear or other guarantees from the South.

ROK Response Options

South Korea's responses are likely to be predominantly influenced by American actions. A successful North Korean nuclear development program may well impel Seoul to follow suit, regardless of American policy. So long as the United States appears to be firm in upholding its alliance responsibilities, however, then the possibility exists that Seoul may be sufficiently reassured as to choose not to do so. The combination of a continued American presence and a clearly evinced American interest in the survival of the ROK may mollify Southern concerns, and South Korean decision-makers may then see no need for an indigenous nuclear capability.

Should the American commitment appear to waver, however, or the American deterrent not appear credible, it is likely that Seoul will feel dangerously exposed. The ROK, under such circumstances, would be faced by not only a hostile DPRK, at least potentially equipped with nuclear weapons, but also by a Japan holding the ring. Seoul would almost certainly feel compelled to respond to the DPRK threat with a counter-move. Some of these resulting options have the high potential of further destabilizing both peninsular and regional security.

One possibility that South Korea might choose to pursue is a large-scale SDI-type program, as well as significantly increased investments in its air defense capabilities. Seoul could undertake such programs either alone, or in conjunction with the United States. It is, therefore, unlikely that the ROK would concentrate **solely** on defensive weapons systems. In the first place, even assuming that a working anti-tactical ballistic missile system could be constructed, the lag time involved would probably be unacceptable to Seoul. In South Korea's case, indeed, the delays are likely to be even longer, in light of the daunting problems of the country's geography, with its minimal warning and reaction times, as well as the high concentration of high-value targets in the Seoul area. Any defensive program, therefore, would probably offer little protection in the short term and limited protection, at best, in the longer term. Nonetheless, Seoul may well

invest *won* in pursuit of such schemes since, although they would likely be only minimal palliatives in the event of a large-scale attack, they would offer at least some possibility of ameliorating the situation, particularly if the North could only field a handful of nuclear weapons. As important, the psychological benefits (especially as one-quarter of South Korea's population lives in Seoul) may well outweigh statistical probabilities of intercept.

More likely, Seoul, without US. support, would undertake to develop weapons systems that could respond to a Northern nuclear threat (and implicitly also threaten Japan). The most probable course of action would be a crash South Korean nuclear weapons program to develop their own indigenous nuclear capability in the minimal time possible. There is ample precedent for the South to pursue such an option. As early as 1975, then-President Park Chung Hee suggested that the Republic of Korea might choose to develop an independent nuclear capability should the American nuclear umbrella be withdrawn. In 1977, after the Carter Administration had indicated its intent to withdraw all American forces from the ROK, both the ruling party and the opposition endorsed the independent development of nuclear arms by the ROK.⁶³ Only with the rescinding of the withdrawal decision, and the sale of advanced conventional weapons to the ROK armed forces, did South Korea abandon its nuclear weapons development program. In light of South Korea's more advanced technological infrastructure compared with 15 years ago and a strong nuclear power industry, which supplies over half of the nation's electrical supply, an indigenous ROK nuclear weapons capability is probably not far beyond Seoul's capacities.⁶⁴

A final possibility is that the South might choose to take a proactive stance vis-a-vis prophylactic measures. In particular, it could choose to attack the North's nuclear facilities, although, as noted previously, there would be no assurance that such a move would

⁶³Young Sun Song, "The Korean Nuclear Issue," p. 474.

⁶⁴Andrew Mack, "North Korea and the Bomb," pp. 96-97.

necessarily be successful, or that it would not escalate. As such an option would be fraught with danger, exercising it would clearly be a desperate move, and is unlikely except as a final option. It should be noted, however, that, without the United States, Seoul may well feel that it is, in fact, confronted with such dire circumstances, since there would be no *deus ex machina* to preserve Seoul in the event of miscalculation. The pressures on South Korea to undertake such an assault would be even greater if they perceived the time factor to be running against them, i.e., if the time necessary to create either a working nuclear capability or a defensive ATBM shield were to be such as to leave them unilaterally vulnerable for a period of time to a North Korean nuclear threat.

Implications for Japan

Both the possibility of a North Korean nuclear arsenal, as well as the American and South Korean responses, are of direct interest to Japanese policy-makers. This is due, in part, to the traditional view of Korea as a direct security interest to Japan. Tokyo has long viewed Korea as being "a dagger pointed at the heart of Japan."⁶⁵ The presence of hostile elements, or even potentially destabilizing ones, in Korea would, therefore, constitute a direct threat to the security of the Home Islands.

In addition, in light of the long-standing animosity between Korea and Japan (rooted most recently, but not solely, in the half-century of brutal Japanese colonial rule over the peninsula), Tokyo cannot face with equanimity the prospect of Koreans equipped with weapons of mass destruction. While this applies to either Korea, the potential threat to Japan is especially great if these weapons are under the command of the North Korean regime. Not only are the North Koreans especially unpredictable (as noted above), but they are even

⁶⁵William E. Griffith, "The Geopolitics of East and Southeast Asia," *Japan and the Pacific Quadrille*, ed. by Herbert J. Ellison (Westview Press, Boulder, CO, 1987), p. 43.

more antagonistic towards Japan than their Southern counterparts. Indeed, Kim Il-Sung's legitimacy rests, at least in part, on his claims to have led the Korean anti-Japanese resistance. Thus, any North Korean acquisition of nuclear weapons is bound to have repercussions across the Tsushima Straits.

In light of these considerations, however, as well as the delicate nature of Japanese-Korean relations, and given domestic constraints on the use of force (e.g., Article IX of the Constitution), Japan has little ability to intervene directly in developments on the peninsula. Any effort to ameliorate the situation directly is likely to draw charges of interference on the part of Tokyo and inspire a backlash, rather than improve the situation.⁶⁶ Instead, Japanese security efforts involving Korea (which are minimal) are all conducted via a third party, i.e., the United States. This is unlikely to change, even if North Korea proves successful in developing a nuclear weapon. Any Japanese military responses to such a development would be limited to those that Japan can perform itself, or, if possible, with the United States.

This does not necessarily mean, however, that a North Korean nuclear capability in and of itself would necessarily lead Tokyo to develop a nuclear weapon of its own. Indeed, Japan has persisted with its policy of neither possessing, nor introducing, nor manufacturing, nuclear weapons despite the 40-year history of Soviet nuclear weapons and 20-year presence of Chinese nuclear capabilities. Japan has been comfortable with the extended American nuclear deterrent in preventing a nuclear attack by either nation, since, without a land border with either Russia or the PRC, the only likely threat would be a Russian (or Chinese) nuclear attack. Since that was likely to occur only in the context of a Third World War (and even then presumed horizontal escalation to the Pacific), it was improbable at best, making the American nuclear deterrent an inexpensive insurance policy

⁶⁶One sign of the deep-seated suspicions of Koreans against the Japanese is the belief that Japanese aid to North Korea is ultimately aimed at perpetuating the division of the two Koreas by propping up the Northern regime. See, for example, William Beecher, "Japanese Leave South Korea with Strategic Dilemma," *Minneapolis Star-Tribune* (June 21, 1992).

against an unlikely (but not impossible) threat. One corollary effect was the remarkable apparent credibility of the American nuclear deterrent in Japan, standing in stark contrast to their European counterparts.⁶⁷

Barring a North Korean attack against the South, it is not clear that the situation would necessarily change enough to warrant a fundamental change in Japanese policy. If the region remains at peace, **and presuming that the United States retains its commitments to the defense and security of Japan and South Korea**, then even in light of historic tensions between the Koreans and the Japanese, and despite the importance of the peninsula to Japanese security, a North Korean nuclear capability might not necessarily compel Japan to change its historical anti-nuclear policy. One Japanese defense researcher has, therefore, already called for the United States to reaffirm that any attack on Japanese territory, from whatever quarter, would violate the US.-Japan security treaty and would invoke an American response.⁶⁸

Instead, under the aforementioned circumstances, Japan might choose only to pursue an expansion of its conventional defenses, coupled with a reorientation of some of its emphases. Such an effort is likely to involve, in the first place, a certain strengthening of the Self-Defense Forces (SDF), including a greater airborne early-warning capability and bolstered air defense forces. The Air Self Defense Force (ASDF) would also likely see its budgetary share increase from the current 25.5% (gained, most likely from the Ground Self Defense Force's 35.6%).⁶⁹ In addition, both the ASDF and GSDF are likely to redeploy the bulk of their formations from the north (upon the return of the Northern Territories or some suitable accommodation thereof) towards the west. It is interesting to note here that Japanese forces have already begun to be realigned away from Hokkaido and more

⁶⁷Discussions with Japanese defense and foreign affairs officials in Tokyo, October 1990.

⁶⁸Discussions with a Japanese defense researcher in Cambridge, March 18, 1992.

⁶⁹Japan Defense Agency, *The Defense of Japan, 1991* (The Japan Times, Tokyo, Japan, 1991), p. 99.

towards the defense of Kyushu and western Honshu.⁷⁰ Such measures would probably be expanded in the wake of a North Korean nuclear capacity.

Tokyo is also likely to provide greater resources to its current space program, including, possibly, the acquisition of indigenous strategic reconnaissance platforms (e.g., space-based intelligence satellites).⁷¹ Japan may well also accelerate its current joint research programs with the United States in SDI and other ballistic missile defense schemes. Given the distance between the Home Islands and the Korean peninsula, a Japanese effort is far more likely to bear useful fruit than a corresponding Korean one. The JSDF may also increase its purchases of *Patriot* anti-aircraft/anti-missile batteries from the current six air-defense groups.

Even such moves would likely heighten concerns and tensions among Asian states as to Japanese intentions. Some of Japan's neighbors, particularly China, have already expressed their fears about the ongoing Japanese defense build-up. Therefore, a significant increase in annual Japanese defense spending beyond the current less than 1% of the GNP is likely to engender further concerns. Indeed, in light of the regional dismay at the merely potential dispatch of lightly armed Japanese peacekeepers, under UN. auspices, expanded defense outlays by Tokyo will likely only further exacerbate regional suspicions of Japan. Ironically, this may include the ROK, since Seoul is already concerned with its future security relations vis-a-vis Japan.⁷² These

⁷⁰Masanori Tabata, "GSDF Overhaul Plan Reflects Change in Security Needs, Manpower Crunch," *The Japan Times* (June 12, 1991), in FBIS-EAS-91-115-A (June 14, 1991), pp 8-9.

⁷¹This would likely entail a certain amount of administrative reorganization, since the Japanese space program is entirely civilian in nature.

⁷²The most recent ROK Defense White Paper, for example, specifically considers Japan's military forces to constitute a factor in South Korean security calculations. Similarly, both President Roh Tae Woo and opposition leader Kim Dae Jung have called for a continued American military presence in the RoK, even after reunification. See, for example, Damon Darlin, "South Korea, Fearing Japan's Military, Wants U.S. to Remain as Peace Keeper", *Wall Street Journal* (November 20, 1991) and Beecher, "Japanese Leave South Korea."

concerns, in turn, may accelerate other Asian defense procurements (including the ROK).

Recognizing such problems, Tokyo is also likely to desire a continued robust American presence in the region. Such a presence would both increase the credibility of the defense of Japan (since it would force any potential North Korean leader to confront the likelihood of retaliation in the event of any attack on Japan), as well as allay regional concerns about Japanese intentions. Towards this end, Japan may well be prepared to assume additional responsibility for the costs of maintaining American forces in Japan. Tokyo may even prove forthcoming in various trade discussions in order to mollify American political opinion and thereby further preserve the American forward-deployed forces which serve, ultimately, to shield Japan from external aggressors.

If the United States chooses to draw down its forces substantially from the ROK, then the possibility of a Japanese nuclear capability would increase dramatically. Indeed, the basic framework of Japanese security planning vis-a-vis the peninsula will be altered. Since Japan depends upon the United States to safeguard its security interests on the Korean peninsula, any change in the US.-ROK relationship would immediately produce repercussions for Japan. In this regard, there is historical precedent. The Carter Administration's decision to withdraw all American ground forces from the Korean peninsula shocked Japanese decision-makers severely. Indeed, "probably nothing else ever said or done by the United States in the postwar world so seriously alarmed mainstream Japanese opinion as this American decision unilaterally to give up maintaining the balance of power on the Korean peninsula."⁷³

Presuming that the ROK chooses to develop a nuclear capability as a response to the North, an especially likely option in the event Washington relinquishes its commitments to Seoul, the prospects for

⁷³Chalmers Johnson, "Reflections on the Dilemma of Japanese Defense," *Asian Survey* (XXVI, 5, May, 1986), p. 564.

Japan would be very bleak. It would be the only power in Northeast Asia that would have no nuclear capability. All of these states, moreover, are, to varying degrees, hostile to Japan. At the same time, all of them are relative economic supplicants to Tokyo. Japan cannot feel comfortable being creditor to a group of nuclear-armed states with which it has had a history of fractious relations.

Under such circumstances, even with a defensive scheme underway, Japan is likely to be faced with a stark choice, given that its faith in the United States would be degraded, and strategic defenses are, at best, unproved: it can either adhere to its current nuclear policy, possibly combined with a generous policy of bribery, which would nonetheless lay it open to nuclear blackmail; or it can build and deploy its own nuclear weapons, a capability that is well within its reach. This would, of course, exacerbate regional tensions but preserve its own security. In light of the historical Japanese-Korean relationship, which continues to affect current perceptions, the latter policy is far more likely than the former.

The implications for regional stability would be even grimmer in the event the United States chooses to withdraw not only its forces from Korea but Japan as well. In this event, the situation for Tokyo would be fundamentally altered. Without the support of a nuclear-armed ally, both to bolster its own security and to dampen regional tensions, Tokyo would be compelled to improve its own defenses sufficiently to deter, unilaterally, possible aggression from any state. Such a response would almost certainly include the development of nuclear weapons. In turn, states that have long eyed Japan with suspicion, including not only Northeast Asian states such as Taiwan but also those in Southeast Asia such as Singapore, would have their worst fears confirmed, and undertake their own defense expansions.

Conclusions

North Korean nuclear development is likely to prove a Pandora's box, creating regional tensions that threaten a spectrum of international interests. In light of the potential repercussions, it is clearly in the interest of all states to try and forestall a North Korean nuclear capability. Unfortunately, it is by no means self-evident that such an outcome can be ensured. In the likely event that efforts at aborting North Korean nuclear development fail, then the United States, more than any other country, holds the power to influence regional stability. As the common ally to the most threatened states, Washington, by its actions, ultimately influences threat assessments throughout the region. As important, American responses will determine to a great extent Japanese and South Korean reactions. In light of such a weighty position, American policy initiatives must be carefully weighed if tensions in one of the most economically vibrant, but also heavily armed and mutually suspicious, regions are to be managed.

Most clearly, the United States simply cannot afford to shrug off its responsibilities by significantly decreasing its commitments to the region. Although the combination of a weakened financial situation, concerns about competitiveness (often motivated by the economic success of the very nations in question), and increasingly isolationist tendencies, often phrased in terms of these economic problems, bodes ill for maintaining the status quo, the price of abandoning the postwar American policy towards the region must also be fully understood.

Asia is not like Europe. The Cold War never entirely submerged the historical suspicions that have riven Asia, even at the height of the ideological confrontation between Moscow and Washington. Instead, it merely served as an overlay upon the complex matrix of regional and local rivalries and tensions. The end of the Cold War, far from resolving these issues, has only served to highlight them and bring them once again to the fore. Nowhere is this more evident than in

Northeast Asia. An American presence, such as that in Japan and the ROK, not only serves to deter anti-status quo states such as the DPRK; it also allays apprehensions in both Tokyo and Seoul, assuaging respective concerns about the other through American commitments to each state's security, supported by American forces locally deployed.

In the end, while hollowed forces or wholesale retrenchment from Asia might mollify some domestic political concerns in the short term, such measures would ultimately do little to serve the American interest. Instead, they would hamstring American efforts to preserve security and influence, degrade American credibility, and promote neither stability nor security in the region. The ultimate implication of a North Korean nuclear weapon, it seems, is to underscore the importance of a continued robust American presence.

Location of North Korean Nuclear Facilities

(Source: Jane's Intelligence Review, September 1991)



Reach of North Korean Missiles

(Source: Jane's Soviet Intelligence Review, April 1989)

