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# North Korea's Nuclear Weapons Program

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# CONTENTS

SUMMARY

MOST RECENT DEVELOPMENTS

BACKGROUND AND ANALYSIS

North Korea's Nuclear Program
- Disclosure of the Kumchangri Underground Complex
- International Assistance
- North Korea's Delivery Systems

State of Nuclear Weapons Development

Diplomatic Background to the Agreed Framework and Amending Agreements

The Agreed Framework: Provisions, Implementation, Costs, Future Issues
- U.S. Objectives: Primacy to the Freeze of North Korea's Nuclear Program
- Benefits to North Korea
  - Total U.S. Cost Projections
  - Light Water Nuclear Reactors
  - Oil at No Cost
  - Diplomatic Representation
  - Lifting the U.S. Economic Embargo
- North Korean Obligations Beyond the Freeze of the Nuclear Program
  - Inspections
  - Dismantlement of Nuclear Installations
- The Perry Initiative, October 1999

Role of Congress

# North Korea's Nuclear Weapons Program

## SUMMARY

North Korea's nuclear weapons program became an immediate foreign policy issue facing the United States because of North Korea's refusal to carry out its obligations under the Nuclear Non-Proliferation Treaty (NPT) and other nuclear accords it had signed. North Korea has constructed nuclear reactors and a plutonium reprocessing plant at a site called Yongbyon. U.S. and other foreign intelligence assessments have concluded that North Korea probably has acquired enough weapons-grade plutonium for the manufacture of at least one nuclear weapon.

The Clinton Administration attempted to arrange "comprehensive negotiations" with North Korea over the issue and other issues between North Korea and the United States; but North Korea's violations of its obligations under the NPT aborted such talks until August 1994.

The United States and North Korea signed an agreement on October 21, 1994, that offers North Korea a package of benefits in return for a freeze of North Korea's nuclear program. Benefits to North Korea include: light water nuclear reactors totaling 2,000 electric megawatts by the year 2003; shipments of "heavy oil" to North Korea (50,000 tons in 1995 and 500,000 tons annually beginning in 1996 until the first light water reactor is built).

Dismantlement of North Korea's current nuclear facilities and a resolution of the International Atomic Energy Agency (IAEA) demand for a special inspection of suspected nuclear waste sites are postponed for at least five years by the Agreed Framework. The same is true of North Korean consent to the removal of reactor fuel rods, which North Korea removed from its operating reactor in May 1994.

The United States has faced several policy problems since the signing of the Agreed Framework, including securing approximately $60 million annually to finance heavy oil shipments to North Korea, evidence of clandestine North Korean nuclear activities, and North Korea's development of long range missiles.

## MOST RECENT DEVELOPMENTS

*Recent high-level U.S.-North Korea negotiations, including Secretary of State Albright's visit to North Korea in October 2000, apparently made no progress in resolving the issue of verification that North Korea does not have secret nuclear weapons facilities. The journal* Nucleonics Week *reported in its October 19, 2000 issue that the Clinton Administration considered a proposal to amend the 1994 U.S.-North Korean Agreed Framework that would have eliminated one of the two light water nuclear reactors which the United States is obligated to provide North Korea; a conventional electric power plan would be substituted. The report (substantiated by subsequent reports from other sources) stated that the Administration had discussed the prospective proposal with Japan and South Korea. One reason cited for the Administration's new position is that the estimated cost of the heavy oil the United States is obligated to provide North Korea under the Agreed Framework has risen to an estimated $100-120 million in 2001.*

## BACKGROUND AND ANALYSIS

### North Korea's Nuclear Program

From the U.S. standpoint, a key purpose of the U.S.-North Korean Agreed Framework of October 21, 1994 is to address the North Korean nuclear program, especially the potential of that program to produce nuclear weapons. North Korea has several nuclear facilities which have the potential to produce nuclear weapons. Most are located at Yongbyon, 60 miles of the North Korean capital of Pyongyang. The key installations are:

- **An atomic reactor, with a capacity of about 5 electrical megawatts, constructed between 1980 and 1987:** it reportedly is capable of expending enough uranium fuel to produce about 7 kilograms of plutonium annually — enough for the manufacture of a single atomic bomb annually. North Korea in 1989 shut down the reactor for about 70 days; U.S. intelligence agencies believe that North Korea removed fuel rods from the reactor at that time for reprocessing into plutonium suitable for nuclear weapons. In May 1994, North Korea shut down the reactor and removed about 8,000 fuel rods, which could be reprocessed into enough plutonium for 4-5 nuclear weapons.

- **two larger (estimated 50 electrical megawatts and 200 electrical megawatts) atomic reactors under construction since 1984:** According to U.S. Ambassador Robert Gallucci, these plants, if completed, would be capable of producing enough spent fuel annually for 200 kilograms of plutonium, sufficient to manufacture nearly 30 atomic bombs per year.

- **a plutonium reprocessing building about 600 feet long and several stories high:** Hans Blix, head of the International Atomic Energy Agency (IAEA), said after his visit to North Korea in May 1992 that the facility fit

> the definition of a plutonium reprocessing plant where weapons grade Plutonium- 239 is separated from a reactor's spent fuel. North Korea completed one reprocessing line in 1993. IAEA inspectors in March 1994 saw evidence that North Korea was constructing a second reprocessing system in the building, which would double plutonium production capacity.

Satellite photographs reportedly also show that the atomic reactors have no attached power lines, which they would have if used for electric power generation. Hans Blix and a number of U.S. and South Korean experts have speculated that North Korea might have built a hidden "pilot" plutonium reprocessing laboratory as a prototype for the large reprocessing installation.

Persons interviewed for this study believe that North Korea developed the two reactors and the apparent reprocessing plant with its own resources and technology. It is believed that Kim Chong-il, the son and successor of President Kim Il-sung who died in July 1994, directs the program, and that the military and the Ministry of Public Security (North Korea's version of the KGB) implement it. North Korea reportedly has about 3,000 scientists and research personnel devoted to the Yongbyon program. Many have studied nuclear technology (though not necessarily nuclear weapons production) in the Soviet Union and China and reportedly Pakistan. The training of nuclear scientists at North Korean universities reportedly is intense. North Korea has uranium deposits, estimated at 26 million tons. North Korea is believed to have one uranium producing mine.

## Disclosure of the Kumchangri Underground Complex

U.S. intelligence agencies reportedly became aware of the Kumchangri underground facility in the second half of 1996. The Defense Intelligence Agency (DIA) reportedly prepared a classified report at the end of 1997, which concluded that the facility, located about 25 miles north of Yongbyon, "possibly could be a nuclear weapons-related facility by 2003." The report stated that: "The function of this site has not been determined, but it could be intended as a nuclear production and/or storage site." The DIA began to brief staff members of key congressional committees concerning the Kumchangri site in the spring of 1998. According to staffers privy to the briefing, the DIA over several months provided detailed information indicating that North Korea was constructing a nuclear installation. In August 1998, the *New York Times* and the *Washington Post* revealed the intelligence findings. Press reports also indicated that U.S. intelligence agencies are monitoring at least ten more North Korean installations of a suspicious nature. The Clinton Administration responded to the disclosure by pressuring North Korea to allow the United States access to the Kumchangri facility. An agreement was reached on March 16, 1999, providing for multiple inspections of the site in return for at least 500,000 tons of new U.S. food aid for North Korea. The first visit took place in May 1999. Administration officials declared that no evidence of nuclear activity was found. However, previous reports indicated that North Korea had removed equipment from the facility.

## International Assistance

Knowledgeable individuals believe that the Soviet Union did not assist directly in the development of Yongbyon in the 1980s. The U.S.S.R. provided North Korea with a small research reactor in the 1960s, which also is at Yongbyon. However, North Korean nuclear

scientists continued to receive training in the U.S.S.R. up to the demise of the Soviet Union in December 1991. East German and Russian nuclear and missile scientists reportedly are in North Korea. Russian military officials confirmed the presence of Russian nuclear and missile scientists inside North Korea in January 1994. In 1999 and early 2000, reports appeared that U.S. intelligence agencies had information that China was supplying important components and raw materials for North Korea's missile program.

### North Korea's Delivery Systems

North Korea is developing missiles believed capable of delivering nuclear warheads. In June and July 1998, Secretary of Defense Cohen and other U.S. military officials disclosed that North Korea had succeeded in developing a "Nodong" missile with a range estimated at 600 miles, capable of covering South Korea and part of Japan. North began deploying Nodong missiles in late 1998. Since March 1994, U.S. intelligence agencies have reported that North Korea was developing two longer range Taepo Dong ballistic missiles whose range likely would include, in the first stage, all of Japan including Okinawa and, in the second stage, U.S. territories in the Western Pacific and possibly Alaska and Hawaii. On August 31, 1998, North Korea test fired a three stage rocket, apparently the prototype of the Taepo Dong-1; the third stage apparently was an attempt to launch a satellite. U.S. intelligence estimates reportedly concluded that such a missile would have the range to reach Alaska, Guam, and the Northern Marianas Commonwealth. Reports in early 2000 cited U.S. intelligence findings that, without further flight tests, North Korea could deploy an intercontinental ballistic missile that would be capable of striking Alaska, Hawaii, and the U.S. west coast.

These projections led the Clinton Administration to press North Korea for a new round of talks over North Korea's missile program. In talks held in March 1999 and July 2000, North Korea demanded $1 billion annually in exchange for a promise not to export missiles. North Korea said to U.S. negotiators that it would not negotiate on its missile development/deployment program, apparently contradicting the offer reported by Russian President Vladimir Putin in July 2000. U.S. negotiators reportedly rejected North Korea's demand for $1 billion but offered a lifting of U.S. economic sanctions against North Korea in exchange for an agreement on missiles. This laid the ground for the Berlin agreement of September 1999 in which North Korea agreed to defer further missile tests in return for the lifting of major U.S. economic sanctions.

## State of Nuclear Weapons Development

U.S. and foreign intelligence agencies and experts have concluded a high range of likelihood that North Korea has acquired enough plutonium and has developed significant technology to produce a small number of nuclear weapons. North Korea's approximately 70 day shutdown of the five megawatt reactor in 1989 gave it the opportunity to remove nuclear fuel rods, from which plutonium is reprocessed. State Department officials estimate that North Korea may have acquired six to eight kilograms of plutonium from the five megawatt reactor at Yongbyon, enough, they say, for possibly one bomb. However, the U.S. Central Intelligence Agency and the Defense Intelligence Agency reportedly estimated in late 1993 that North Korea extracted enough fuel rods for about 12 kilograms of plutonium —

sufficient for one or two atomic bombs. The CIA and DIA apparently base their estimate on the 1989 shutdown of the five megawatt reactor. David Albright of the Institute for Science and International Security produced in 1994 a detailed study of the 1989 reactor shutdown and concluded that if North Korea removed all of the fuel rods from the reactor during the shutdown, the rods would have contained 14 kilograms of plutonium.

South Korean and Japanese intelligence estimates reportedly are higher: 16-24 kilograms (Japan) and 7-22 kilograms (South Korea). These estimates reportedly are based on the view that North Korea could have acquired a higher volume of plutonium from the 1989 reactor shutdown and the view of a higher possibility that North Korea removed fuel rods during the 1990 and 1991 reactor slowdowns. Russian Defense Ministry analyses of late 1993 reportedly came to a similar estimate of about 20 kilograms of plutonium, enough for 2 or 3 atomic bombs. Some individual U.S. Government experts believe that under optimum conditions, North Korea could have produced close to 20 kilograms of plutonium since 1989.

There also is emerging a body of analysis suggesting that North Korea could produce more nuclear weapons from a given amount of plutonium than standard intelligence estimates have believed. State Department and U.S. intelligence estimates of the plutonium/bomb production ratio are close to the IAEA standard that a non-nuclear state would need about eight kilograms of plutonium to produce a nuclear bomb. However, IAEA spokesman, David Kyd, stated in August 1994 that Agency officials have known for some time that the eight kilogram standard was too high. He said that the IAEA retained it because of the wishes of member governments.

Kyd was reacting to a report of the National Resources Defense Council. Using North Korea as a standard non-nuclear state, the report concluded that a non-nuclear state with "low technology" could produce a one kiloton bomb (a small atomic bomb but "with the potential to kill tens of thousands of people") with three kilograms of plutonium. A non-nuclear state with "medium technology" could produce a one kiloton bomb with 1.5 kilograms of plutonium.

Before the National Resources Defense Council released the report, the U.S. Department of Energy in January 1994 lowered its mean estimate of plutonium required for a small atomic bomb from eight to four kilograms. Secretary of Defense Perry suggested in July 1994 that, with a higher level of technology that believed, North Korea could produce more nuclear weapons with a given amount of plutonium: "If they had a very advanced technology, they could make five bombs out of the amount of plutonium we estimate they have."

Russian and U.S. intelligence agencies also reportedly have learned of significant technological advances by North Korea towards nuclear weapons production. On March 10, 1992, the Russian newspaper Argumenty I Fakty (Arguments and Facts) published the text of a 1990 Soviet KGB report to the Soviet Central Committee on North Korea's nuclear program. It was published again by Izvestiya of June 24, 1994. The KGB report asserted that "According to available data, development of the first nuclear device has been completed at the DPRK nuclear research center in Yongbyon." The North Korean Government, the report stated, had decided not to test the device in order to avoid international detection. In July and December 1993 respectively, the journal Nucleonics (July 8) and NBC News reported that North Korea had converted reprocessed plutonium from a liquid form to pure

metal, apparently prior to 1993. Nuclear experts describe this action as the last step prior to the final assembly of an atomic bomb.

Additionally, there are a number of reports and evidence that point to at least a middle range likelihood that North Korea may have smuggled plutonium from Russia. In June 1994, the head of Russia's Counterintelligence Service (successor to the KGB) said at a press conference that North Korea's attempts to smuggle "components of nuclear arms production" from Russia caused his agency "special anxiety." In August 1994, members of Germany's parliament and Chancellor Kohl's intelligence coordinator stated that they had been briefed that a German citizen arrested in May 1994 with a small amount of plutonium, smuggled from Russia, had connections with North Korea. U.S. executive branch officials have expressed concern in background briefings over the possibility that North Korea has smuggled plutonium from Russia. One U.S. official, quoted in the Washington Times, July 5, 1994, asserted that "There is the possibility that things having gotten over the [Russia-North Korea] border without anybody being aware of it." The most specific claim came in the German news magazine Stern in March 1993, which cited Russian Counterintelligence Service reports that North Korea had smuggled 56 kilograms of plutonium (enough for 7-9 atomic bombs) from Russia.

Other evidence, albeit circumstantial, includes numerous reports in 1994 of poor security at Russian nuclear facilities; a warning in June 1994 by the Director of the FBI that Russian criminal organizations "may already have the capability to steal nuclear weapons, nuclear weapons components or weapons- grade material"; the close connections that North Korean intelligence and military organs have had with the former KGB and elements of the Soviet/Russian military; the network of agents North Korea is known to have inside Russia; and the publicized North Korean attempts — some apparently successful according to Russian military officials — to recruit Soviet/Russian nuclear experts, including missile experts capable of designing nuclear warheads. The Japanese newspaper, SANKEI SHIMBUN, reported on June 9, 1996, that Kim Chong-u, a leading North Korean economic official, asserted in a meeting with State Department officials on April 26, 1996, that South Korea and Japan would have to deal with four North Korean missiles with nuclear warheads if they didn't provide North Korea with food.

In March 2000, President Clinton notified Congress that he could not certify that North Korea was not acquiring enriched uranium for the production of nuclear weapons. The Japanese newspaper, *Sankei Shimbun*, reported on June 9, 2000, the contents of a "detailed report" from Chinese government sources on a secret North Korean uranium enrichment facility inside North Korea's Mount Chonma.

## Diplomatic Background to the Agreed Framework and Amending Agreements

In 1991, the Bush Administration took several actions aimed at securing from North Korea adherence to Pyongyang's obligations as a signatory of the Nuclear Non-Proliferation Treaty (NPT); North Korea had signed the treaty in 1985. Bush Administration actions included the withdraw of U.S. nuclear weapons from South Korea in late 1991. North Korea entered into two agreements, which specified nuclear obligations. In a denuclearization

agreement signed in December 1991, North Korea and South Korea pledged not to possess nuclear weapons, not to possess plutonium reprocessing or uranium enrichment facilities, and to negotiate a mutual nuclear inspection system. In January 1992, North Korea signed a safeguards agreement with the International Atomic Energy Agency (IAEA), providing for regular IAEA inspections of nuclear facilities. In 1992, North Korea rebuffed South Korea regarding implementation of the denuclearization agreement, but it did allow the IAEA to conduct six inspections during June 1992-February 1993.

In late 1992, the IAEA found evidence that North Korea had reprocessed more plutonium than the 80 grams it had disclosed to the Agency. In February 1993, the IAEA invoked a provision in the safeguards agreement and called for a "special inspection" of two concealed but apparent nuclear waste sites at Yongbyon. The IAEA believed that a special inspection would uncover information on the amount of plutonium which North Korea had produced since 1989. North Korea rejected the IAEA request and announced on March 12, 1993, an intention to withdraw from the NPT.

The NPT withdrawal threat led to low and higher level diplomatic talks between North Korea and the Clinton Administration. North Korea "suspended" its withdrawal from the NPT when the Clinton Administration agreed to a high-level meeting in June 1993. However, North Korea continued to refuse both special inspections and IAEA regular inspections of facilities designated under the safeguards agreement. In May 1994, North Korea refused to allow the IAEA to inspect the 8,000 fuel rods, which it had removed from the five megawatt reactor. In June 1994, North Korea's President Kim Il-sung reactivated a longstanding invitation to former U.S. President Jimmy Carter to visit Pyongyang. Kim offered Carter a freeze of North Korea's nuclear facilities and operations. Kim took this initiative after China reportedly informed him that it would not veto a first round of economic sanctions, which the Clinton Administration had proposed to members of the U.N. Security Council.

The Clinton Administration reacted to Kim's proposal by dropping its sanctions proposal and entering into a new round of high-level negotiations with North. This negotiation led to the Agreed Framework of October 21, 1994. Two amending agreements were concluded in 1995: a U.S.-North Korean statements in Kuala Lumpur, Malaysia in June and a supply contract for the provision of nuclear reactors to North Korea, concluded in December.

# The Agreed Framework: Provisions, Implementation, Costs, Future Issues

## U.S. Objectives: Primacy to the Freeze of North Korea's Nuclear Program

The heart of the Agreed Framework and the amending accords is a deal under which the United States will provide North Korea with a package of nuclear, energy, economic, and diplomatic benefits; in return North Korea will halt the operations and infrastructure development of its nuclear program. The Agreed Framework commits North Korea to "freeze its graphite-moderated reactors and related facilities" within one month of October 21 with the freeze to be monitored by the IAEA. Ambassador Robert Gallucci, who negotiated for the United States, stated that "related facilities" include the plutonium

reprocessing plant. According to Gallucci, the freeze includes a halt to construction of the 50 and 200 megawatt reactors and a North Korean promise not to refuel the five megawatt reactor. The Agreed Framework also commits North Korea to "cooperate" with the United States in finding a way to store the fuel rods removed from the five megawatt reactor in May 1994 "in a safe manner that does not involve reprocessing in the DPRK [North Korea]." Administration officials reportedly have said that a secret "confidential minute" to the Agreed Framework prohibits North Korea from construction of new nuclear facilities elsewhere in North Korea.

Gallucci and other officials have emphasized that the key policy objective of the Clinton Administration has been to secure a freeze of North Korea's nuclear program in order to prevent North Korea from producing large quantities of nuclear weapons grade plutonium through the operations of the 50 and 200 megawatt reactors and the plutonium reprocessing plant at Yongbyon. Gallucci has referred to the prospect of North Korea of producing enough plutonium annually for nearly 30 nuclear weapons if the 50 and 200 megawatt reactors went into operation. The Administration's fear is that North Korea would have the means to export atomic bombs to other states and possess a nuclear missile capability that would threaten Japan and U.S. territories in the Pacific Ocean. The freeze, thus, is intended to attain U.S. policy goals related to nuclear non-proliferation and the NPT and prevent the emergence of a significant regional nuclear security threat.

However, the Agreed Framework does not resolve the question of North Korea's existing achievements regarding the production and acquisition of plutonium and the production of nuclear weapons. The freeze will not prevent North Korea from producing a few nuclear weapons if, according to the U.S. and foreign intelligence reports cited earlier, North Korea has enough plutonium, sufficient technology to manufacture them, and hidden facilities such as a pilot plutonium reprocessing laboratory, about which IAEA Director Blix and others have speculated. Pyongyang's continued small stockpile option appears to be a major weakness of the Agreed Framework. This would not constitute the broad strategic threat cited by Administration officials. However, a small nuclear stockpile would represent a new, dangerous element to the military situation on the Korean peninsula itself, if North Korean leaders concluded that possession of nuclear weapons provided them with insurance against unacceptable losses if they undertook a more militarily aggressive strategy toward South Korea.

## Benefits to North Korea

**Total U.S. Cost Projections.** In December 1994, Ambassador Gallucci told the Senate Foreign Relations Committee that the cost to the United States in implementing the Agreed Framework would be in the "tens of millions of dollars." Secretary of State Christopher estimated $20-$30 million annually in testimony before the Foreign Relations Committee.

**Light Water Nuclear Reactors.** North Korea is to receive two light water reactors (LWRs) with a generating capacity of approximately 2,000 megawatts. The Agreed Framework set a "target date" of 2003. The United States is obligated to organize an international consortium arrangement for the acquisition and financing of the reactors. The Administration and the governments of South Korea, Japan, and other countries established in March 1995 the Korean Peninsula Energy Development Organization (KEDO) to

coordinate the provision of the LWRs. North Korea initially rejected negotiating with either KEDO or South Korea over the LWR project, demanding that it deal only with the United States and that it would accept only U.S. reactors. North Korea and the United States reached an agreement in Kuala Lumpur, Malaysia, in June 1995 under which North Korea agreed to negotiate with KEDO. The Kuala Lumpur agreement left South Korea's role in the project unclear. However, South Korea's role has become apparent because of South Korea's participation in subsequent KEDO- North Korea negotiations, which concluded a supply contract in December 1995 and follow-up protocol accords in 1996. KEDO signed the supply contract with North Korea in December 1995. With the groundbreaking at the reactor site in August 1997, KEDO officials have changed the estimated completion date from 2003 to 2007; other experts predict a much later date.

KEDO's estimated cost of the reactors in 1994 is currently $4.6 billion. Other estimates have been $5.5-6.0 billion. South Korea is to supply the reactors through a South Korean company as the main contractor; and South Korea and Japan will provide most of the financing. The Administration's objective is to secure all the money for the light water reactors from other governments. It has approached Western European and Southeast Asian countries about financial assistance. An agreement reached by KEDO members on November 9, 1998, sets South Korea's contribution at $3.22 billion, Japan's contribution at $1 billion, and the European Union's contribution at $76 million. This leaves a projected shortfall of $305 million.

The supply contract will add to the financial costs. KEDO accepted several of North Korea's demands for construction of auxiliary facilities: ports, roads, a nuclear waste storage facility, and a reactor simulator. KEDO rejected North Korea's demand that KEDO finance modernization of North Korea's electric power grid. The cost of this has been estimated at $750 million. North Korea reissued the demand in an amended form in U.S.-North Korean talks in March 2000, calling for U.S. "compensation" for electricity shortages because the light water nuclear reactors will not be completed by 20003.

Clinton Administration officials have noted that before construction begins, the United States, in accord with the Atomic Energy Act, must enter into a bilateral nuclear cooperation agreement with North Korea, since U.S. technology is incorporated into the South Korean light water reactors that North Korea will receive. Administration officials state that light water reactors are less dangerous than North Korea's current graphite reactors, partly because plutonium produced from light water reactors is more technologically difficult to use in the manufacture nuclear weapons. They also assert that North Korea will have to secure enriched uranium fuel for light water reactors from outside North Korea. This, the officials claim, will give the United States leverage on the supply of fuel if North Korea should violate the Agreed Framework. However, non-government nuclear experts assert that North Korea could use the original supply of fuel for the reactors to produce enough plutonium annually for up to 70 atomic bombs before the United States could react by seeking a cutoff of future fuel shipments. Ambassador Gallucci has acknowledged that "a technical possibility" exists that North Korea could use light water reactors to produce plutonium for nuclear weapons. Moreover, exercising U.S. leverage over the supply of fuel would require that potential suppliers of fuel like China and Russia coordinate their policies with the United States. The Agreed Framework and subsequent Clinton Administration have provided no information on the projected costs of supplying the reactor fuel.

**Oil at No Cost.** Prior to the construction of light water reactors, the Agreed Framework commits the United States to facilitate the provision to North Korea of "alternative energy" to compensate for the freeze of nuclear facilities. The alternative energy is to be "heavy oil". In January 1995, the Clinton Administration arranged for the shipment of 50,000 metric tons of U.S. heavy oil to North Korea. This was followed by a shipment of 100,000 metric tons of oil in October 1995. Starting in October 1996, the United States is to facilitate shipments of 500,000 metric tons of heavy oil to North Korea annually until the first of the two light water reactors becomes operational. The annual cost of the oil currently is over $60 million. The Administration financed the initial shipment of 50,000 tons of oil with $4.5 million from appropriated Defense Department funds designated for "emergency expenses. The European Union joined KEDO's executive board in May 1997 and has provided over $15 million annually for the oil shipments. The Administration has had little success in securing financial support from Southeast Asian and Persian Gulf countries despite repeated requests.

The Agreed Framework states that the heavy oil is "for heating and electricity production." North Korea has only one oil-fired electrical power plant, but 500,000 tons of oil annually exceeds the capacity of this plant. Other potential uses of heavy oil are for ship transport and steel production. U.S. officials disclosed in February 1995 that North Korea had "diverted" a "small amount" of the heavy oil received in January to industrial uses. Ambassador Gallucci hinted that it was used in steel production. He said that the United States and North Korea had agreed on procedures to ensure against further diversions. However, A General Accounting Office report in late 1999 described periodic breakdowns in the U.S. system of monitoring North Korea's use of the heavy oil. President Clinton notified Congress in March 2000 that he could not certify that North was not diverting heavy oil for unauthorized purposes.

**Diplomatic Representation.** The United States and North Korea announced in the Agreed Framework an intention to open liaison offices in each other's capital and establish full diplomatic relations if the two governments make progress "on issues of concern to each side." By April 1995, most technical arrangements for liaison offices were completed. However, North Korea since has displayed more reluctance to finalize arrangements. Ambassador Gallucci has asserted that a full normalization of diplomatic relations will depend on a successful resolution of non-nuclear military issues, especially the heavy deployment of North Korean conventional military forces along the demilitarized zone separating North and South Korea and North Korea's program to develop and sell to other governments longer range missiles. In October 1999, William Perry, the Administration's Special Adviser on North Korea, cited normalization of diplomatic relations as one of the benefits which the United States could offer North Korea for new agreements on nuclear and missile issues.

**Lifting the U.S. Economic Embargo.** The Agreed Framework specifies that within three months from October 21, 1994, the two sides will reduce barriers to trade and investment, including restrictions on telecommunications services and financial transactions. This requires the Clinton Administration to relax the U.S. economic embargo on North Korea, which the Truman Administration and Congress put in place during the Korean War. On January 20, 1995, the Administration announced initial measures, including permission for telecommunications links with North Korea, permission for U.S. citizens to use credit cards in North Korea, permission for American media organizations to open offices in North Korea, permission for North Korea to use U.S. banks in financial transactions with third countries,

and permission for U.S. steel companies to import magnesite from North Korea. North Korea since has pressed the Clinton Administration to end all economic sanctions. In U.S.-North Korean talks in September 1999, the United States agreed to end a broader range of economic sanctions in exchange for a North Korean moratorium on future missile testing.

## North Korean Obligations Beyond the Freeze of the Nuclear Program

North Korea's primary obligation is the freeze of its nuclear program. However, as the time comes for delivery to North Korea of plant and equipment for the light water reactors, the Agreed Framework alludes to certain other obligations for Pyongyang. Ambassador Gallucci and other Administration have been more specific in describing these. They have disclosed the existence of a secret minute that the Administration and North Korea concluded in conjunction with completion of the Agreed Framework. North Korea, however, has not acknowledged such a secret minute.

**Inspections.** The Agreed Framework contains a clause which the Administration claims constitutes a North Korean obligation to allow the IAEA to conduct the special inspection of the two suspected nuclear waste sites at Yongbyon in conjunction with the delivery of equipment for the light water reactors. However, the Agreed Framework does not refer to "special inspections." It does state: "When a significant portion of the LWR [light water reactor] project is completed, but before delivery of key nuclear components, the DPRK will come into full compliance with its safeguards agreement with the IAEA, including taking all steps that may be deemed necessary by the IAEA, following consultations with the Agency, with regard to verifying the accuracy and completeness of the DPRK's initial report on all nuclear material in the DPRK." Ambassador Gallucci contends that this binds North Korea to accept a special inspection before the key nuclear components of the first light water reactor are delivered to North Korea, if the IAEA still wishes to conduct a special inspection. However, North Korean descriptions of its obligations omit reference to special inspections.

Gallucci also stated in congressional testimony that the Agreed Framework did not restrict the right of the IAEA to invoke special inspections if it discovered any new North Korean nuclear activities. Gallucci said that the Agreed Framework only restricted the IAEA with respect to the two suspected nuclear waste sites, concerning which the IAEA demanded special inspections in 1993.

**Disposition of Fuel Rods from the Five Megawatt Reactor.** Following Kim Il-sung's offer of a nuclear freeze to former President Carter, Administration officials stressed the importance of securing North Korean agreement to the removal to a third country of the 8,000 fuel rods which North Korea removed from the five megawatt reactor in May 1994. The Administration abandoned the objective of securing an immediate removal of the rods after the negotiations started in August 1994. It also gave up support for the IAEA's attempts to inspect the fuel rods in order to gain information on the amount of weapons grade plutonium that North Korea secured from the five megawatt reactor prior to 1994. The Agreed Framework provided for the storage of the rods in North Korea and a North Korean promise not to reprocess plutonium from the rods. It also provides for subsequent talks on the "ultimate disposition" of the rods. The Administration also has agreed to provide technical assistance to North Korea for the safe storage of the fuel rods in a hard encasement. The encasement process began on April 27, 1996. The Administration estimated the cost of

this technical assistance at $5-$10 million, but the total cost in fiscal years 1996 and 1997 has totaled $20 million. The South Korean Government, however, reportedly estimates that the cost of safe storage of the fuel rods will be about $30 million. Over 90% of the fuel rods had been encased in May 1998 when North Korea suspended the encasing in protest over the slow deliveries of heavy oil. In U.S.-North Korean negotiations in August 1998, North Korea agreed to complete the encasing.

In early 1996, the IAEA renewed attempts to inspect the fuel rods before they were encased, only to be rebuffed by North Korea. IAEA statements indicate that the Clinton Administration gave no support to the IAEA attempts.

The State Department asserts that the Agreed Framework constitutes a North Korean commitment to allow the removal of the rods from North Korea "when significant nuclear components begin to be delivered for the first LWR." The Department adds that "The fuel must be completely shipped out of North Korea by the time the first LWR is completed." The Agreed Framework does not specify removal of the fuel rods, but the supply contract states that the fuel rods will be transferred "from the DPRK." The South Korean Government reportedly estimates that the cost of removal would be around $70 million. Other South Korean experts reportedly place the costs of storage and removal higher, around $200 million. The supply contract does not specify who would assume the cost of dismantlement.

**Dismantlement of Nuclear Installations.** The Agreed Framework states that "Dismantlement of the DPRK's graphite-moderated reactors and related facilities will be completed when the LWR project is completed." A State Department interpretation holds that dismantlement will begin when the first light water reactor is installed and completed when the second reactor is fully installed. Administration officials have not estimated the cost of dismantlement and from where the money would come. South Korean government experts reportedly estimate that dismantlement of the 50 and 200 megawatt reactors will cost about $500 million but that dismantlement of the radioactive five megawatt reactor and the plutonium reprocessing plant will require a much higher cost.

## The Perry Initiative, October 1999

The 1998 North Korean long range missile launch and the disclosure of the Kumchangri suspected nuclear underground site prompted the Clinton Administration to reassess its policy toward North Korea. The result was the Perry initiative. William Perry, former Secretary of Defense and Special Advisor to the President and Secretary of State on North Korea, outlined a revised U.S. strategy in a report of October 1999. The Perry report asserted that the Agreed Framework should continue in order to prevent North Korea from producing a "significant number of nuclear weapons." It recommended two sets of new U.S.-North Korea negotiations with the objectives of securing (1) "verifiable assurances" that North Korea does not have a secret nuclear weapons program, and (2) "verifiable cessation" of North Korea's missile program. Perry recommended a step by step negotiating process. Perry proposed that, in return for commitments by North Korea on the nuclear and missile issues, the United States should normalize diplomatic relations with North Korea, relax economic sanctions against North Korea, and "take other positive steps" to "provide opportunities" for North Korea. Perry stated that such U.S. initiatives should be coordinated with similar actions by Japan and South Korea.

The Clinton Administration took an initial step in line with Perry's recommendations when it negotiated an agreement with North Korea in Berlin in September 1999 in which North Korea agreed to defer further missile launch tests in return for actions by the Clinton Administration to lift major U.S. economic sanctions. The next planned step, a high-level North Korean visit to Washington, was stalemated over North Korea's demand of preconditions. Following the dramatic summit meeting between the leaders of North Korea and South Korea, the Clinton Administration announced officially the lifting of economic sanctions on June 19, 1999. North Korea responded by reaffirming its agreement to defer missile launch tests. North Korea also sent a high-level official to Washington in October 2000 followed by Secretary of State Madeleine Albright's visit to North Korea. These talks focused on the missile issue and particularly on a North Korean proposal made by North Korean leader Kim Jong-il to Russian President Vladimir Putin. According to Putin, Kim Jong-il offered to make concessions on the missile issue (the scope of the proposed concessions are unclear) if the United States would organize a program to launch North Korean satellites into orbit. The talks appeared to give less attention to Perry's objective of ensuring that North Korea does not have a clandestine nuclear weapons program.

## Role of Congress

Congress potentially could exercise legislative initiatives on a number of provisions of the Agreed Framework related to U.S. benefits to North Korea. This is especially the case regarding a relaxation of the U.S. economic embargo, the establishment of liaison offices, or a subsequent establishment of full diplomatic relations. Passage of sense of Congress resolutions or issuance of committee reports constitute means for Congress to voice opinion on the implementation of the Agreed Framework.

Congress has voiced much skepticism regarding the Agreed Framework, but its actions have given the Administration flexibility in implementing U.S. obligations. Congress so far has played three roles. First, there have been numerous oversight hearings. Second, Congress included in the Omnibus Appropriations bill for FY 1999 (H.R. 4328) the requirement that the President certify progress in negotiations with North Korea over the nuclear, missile, and other issues before the Administration could allocate money to KEDO operations. President Clinton issued two such certifications in March and May 1999. H.R. 4328 also called on the President to name "a very senior presidential envoy" as "North Korea Policy Coordinator" to conduct a review of U.S. policy and direct negotiations with North Korea. This resulted in President Clinton's appointment of William Perry as a special adviser and the issuance of the Perry report in October 1999.. Third, Congress has considered and approved Administration requests for funds to finance implementation. Congress approved for fiscal years 1996, 1997, 1998, and 1999 Administration requests for $22 million, $25 million, $30 million and $35 million respectively for U.S. support of KEDO and $20 million for the encasing of nuclear fuel rods. For FY 2000, the Administration raised its request to $55 million. Congress appropriated only $35 million, but President Clinton secured an additional $18 million, using discretionary clauses in foreign operations legislation.

On October 20, 1994, President Clinton sent a letter to North Korean leader, Kim Jong-il, stating that he "will use the full powers of my office" to carry out U.S. obligations related to light water reactors and alternative energy (oil). President Clinton added that if contemplated arrangements for light water reactors and alternative energy were not

completed, he would use the powers of his office to provide light water reactors and alternative energy from the United States "subject to the approval of the U.S. Congress."

Another role for Congress is that of review of a prospective U.S.-North Korea nuclear agreement that the Administration will have to negotiate with North Korea if, as expected, South Korean-produced light water reactors contain U.S. nuclear technology. Under the Atomic Energy Act, the President must conclude such a nuclear agreement and submit it to Congress before U.S. nuclear technology or equipment can be transferred to a foreign country. The President must submit a nuclear agreement to the Senate Foreign Relations Committee and the House International Relations Committee, accompanied by a Nuclear Proliferation Assessment Statement prepared by the Arms Control and Disarmament Agency, Congress has 30 days of continuous session to consider the agreement; it can either adopt a resolution of disapproval or consent to the agreement by taking no action.

On May 15, 2000, the House of Representatives passed H.R. 4251, which would give Congress a more direct role in any U.S.-North Korean bilateral nuclear cooperation agreement. H.R. 4251 would mandate that Congress vote approval of a nuclear cooperation pact before it would go into affect. Such a requirement, should it become law, would be, in effect, a congressional vote on whether to continue implementation of the Agreed Framework.