

## Verifying a missile accord with North Korea

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The verification of any arms control agreement is a political question in technical guise. This is especially so for a potential missile accord between the United States (US) and North Korea (the Democratic People's Republic of Korea, DPRK). North Korea views talks on missiles as a means towards the political goal of ending its life-long enmity with the US and is prepared to tolerate verification as part of a possible bargain. For its part, the US seeks 'verifiable constraints on the North's missile programs'.<sup>1</sup> Those in the US Administration who favour negotiating a missile accord with North Korea insist on stringent monitoring to satisfy the sceptics in Washington, while those who are ideologically ill-disposed towards arms control want to block a deal by seeking on-site inspections so intrusive that Pyongyang is sure to reject them.

To North Korea an end to enmity means, above all, being treated like a sovereign equal and no longer being the object of military threats. It also means political and economic engagement instead of isolation and sanctions. High-level talks with the US, which have been held periodically since 1992, have been a step in that direction, though not a decisive one (after all, talks could be an occasion for issuing threats). The establishment of diplomatic relations is another such step (although, as North Korean diplomats have pointedly reminded their American interlocutors, Japan went to war with the US even when the two countries had diplomatic relations). What North Korea seems to have in mind is a fundamental improvement in its political relations with the US.

Such a change would not require the withdrawal of American forces from the Korean Peninsula. Quite the contrary—ever since January 1992 Pyongyang has been telling Washington, in effect, that, so long as the US remains its enemy, American

troops are a threat and must be withdrawn, but once relations were no longer hostile they would no longer be a threat and could remain.

### **An end to enmity**

Faced with deepening international isolation and the prospect of economic implosion, North Korea's long-time ruler Kim Il Sung decided in the late 1980s to reach out to all three of Pyongyang's rivals—Japan, South Korea and the US—only to have the first Bush Administration impede closer South Korean and Japanese ties with North Korea and insist that, as a condition of engagement, North Korea stop trying to develop nuclear weapons. Concluding that the US held the key to opening doors to South Korea and Japan, North Korea decided to trade in its known nuclear arms programme in order to befriend the US. At the same time it kept its nuclear option open as leverage on the US to live up to its part of the bargain. It continues to do so.

#### *Tit for tat*

North Korea's bargaining tactics led critics to conclude that it was engaging in blackmail in an attempt to obtain economic aid without giving anything in return. It was not. It was playing 'tit for tat', cooperating whenever the US cooperated and retaliating when the US reneged on cooperation, in an effort to get Washington to end the enmity between them.<sup>2</sup> Table 1 summarises the principal stages in North Korea's strategy of tit for tat since January 1992.

If North Korea had been determined to acquire nuclear arms early in the 1990s, as most people in Washington believed at the time, it could have shut down the reactor at its main nuclear site in Yongbyon at any time between 1991 and 1994, removed the spent nuclear fuel and quickly reprocessed it to extract plutonium, the main explosive ingredient in nuclear weapons. Yet it did no reprocessing at Yongbyon from 1991 onward and allowed international inspectors to verify this in 1992. In fact, it only shut down the Yongbyon reactor in May 1994, long after it was expected to. Its actions showed that from 1991 it was exercising some self-restraint in the hope of concluding a nuclear deal with the US. In May 1992 it offered to trade in the Yongbyon reactor for a replacement that would lend itself less easily to proliferation of nuclear materials, but was unwilling to give it away for nothing.

Uncertain about North Korea's nuclear intentions and slow to recognise its change of course, the US ignored the offer and threatened sanctions or worse if North Korea did not fulfil its obligations under the 1968 Nuclear Non-Proliferation Treaty (NPT). In February 1993 the International Atomic Energy Agency (IAEA) requested special inspections and warned that technical assistance could be suspended. North Korea, in turn, warned in March that it would renounce the treaty and restricted but did not foreclose the inspectors' access to Yongbyon. While allowing the IAEA to monitor its Yongbyon facilities to impede any diversion of plutonium in 1993 and 1994, it resisted IAEA efforts to determine how much reprocessing it had done before 1991.

The US and North Korea stumbled to the brink of war in June 1994 before a bold mission to Pyongyang by former American President Jimmy Carter undermined the American sanctions strategy and convinced Kim Il Sung to suspend North Korea's programme for reprocessing plutonium for bombs and accept a summit meeting with South Korea.<sup>3</sup> Despite Kim's death on the day talks resumed, it took just four months to conclude the October 1994 Agreed Framework, whereby North Korea agreed to freeze and eventually dismantle its nuclear arms programme in return for two new light water reactors (LWRs) for nuclear power generation, an interim supply of heavy fuel oil, some relaxation of American economic sanctions, and modest movement towards establishing diplomatic ties. The IAEA was charged with monitoring the freeze.

When Republicans took control of the American Congress in elections just weeks later, they denounced the deal as appeasement. Unwilling to challenge Congress, the administration of President Bill Clinton back-pedalled on implementation by failing to deliver heavy fuel oil on time and doing little to ease sanctions. North Korea was deeply disappointed. After all, it reasoned, if the US were willing to supply nuclear reactors it would surely begin putting an end to enmity. In 1997, when the US was slow to live up to the terms of the October 1994 accord, North Korea threatened to break it. Carrying out that threat, it warned that it needed to reopen sites at Yongbyon. It also resumed excavating an underground site at Kumchang-ni, leading American intelligence to conclude—wrongly—that the long-suspect site was nuclear-related.<sup>4</sup> Most significantly, its efforts to acquire equipment for enriching uranium may date from this point.

*Missiles as a bargaining chip*

At the same time North Korea resolved to try again to improve relations, this time using its missiles as an inducement. Had it wanted missiles that were worth deploying, it should have been testing and perfecting its three medium- and longer-range missiles, the No-dong, Taepo-dong I and Taepo-dong II. Yet it has conducted just two tests of its longer-range missiles over the past decade—neither of which was fully successful. Both were examples of tit for tat.

In an attempt to isolate North Korea and keep the focus on its nuclear programme, the US intervened in March 1993 to stop Israel from negotiating an end to North Korean missile exports to the Middle East. Shortly afterwards Pyongyang invited prospective buyers from Pakistan and Iran to witness its first and only test of the medium-range No-dong on 29 May 1993. In June the US intervened again to block Israel from consummating a deal on exports, but the latter opened missile negotiations of its own with Pyongyang in April 1996.<sup>5</sup> In the ensuing two years it held just two rounds of talks. Again, North Korea resorted to tit for tat. It threatened to conduct missile tests on at least two occasions, only to call them off at US request after American intelligence detected the test preparations.<sup>6</sup> On 16 June 1998 it made a public offer to negotiate an end not only to its missile exports but also to testing and production. The statement, carried in English by the Korean Central News Agency, was a breakthrough:

The discontinuation of our missile development is a matter which can be discussed after a peace agreement is signed between the DPRK and the United States and the US military threat [is] completely removed. If the US concern about our missiles is truly related to the peace and security of Northeast Asia, the United States should immediately accept the DPRK-proposed peace agreement for the establishment of a durable peace mechanism on the Korean Peninsula.<sup>7</sup>

By a peace agreement North Korea meant a declared end to enmity, not a peace treaty in the usual sense. Nor was removal of the 'US military threat' synonymous with removing the American military presence from South Korea. Since American forces could still strike North Korea from offshore, only a basic improvement in political relations would remove the threat as North Korea perceives it. The 'peace

mechanism' referred to in the statement is a three-way military-to-military channel involving the US and North and South Korea, which North Korea has long sought as a replacement for the Military Armistice Commission established after the Korean War to deal with ceasefire violations. The mechanism would not only fulfil that role but also be the forum for negotiating force cuts and other measures to reduce the risk of war on the peninsula.

With the 16 June offer came a threat to resume missile tests, which North Korea carried out on 31 August 1998 when it launched a three-stage Taepo-dong I in a failed attempt to put a satellite into orbit. At the time, the US had just opened talks with North Korea to seek access to the suspect nuclear site at Kumchang-ni. The US resumed those talks after a brief recess, and North Korea refrained from testing its longer-range Taepo-dong II—a test that American intelligence had assessed as 'likely'. As a result of the talks, North Korea allowed American inspectors to visit the Kumchang-ni underground site twice to ascertain that nothing was amiss. It also expressed interest in setting up a joint venture which would, in effect, permit permanent monitoring of the site. Although North Korea has not said so, this could be a precedent for monitoring not only dismantlement of its uranium enrichment sites but also its missile production facilities and other sites as part of a missile deal.

Reviewing North Korean policy, former American Secretary of Defense William Perry went to Pyongyang in May 1999 and proposed high-level talks in Washington, affirming that the US was at last ready to negotiate in earnest and make good its promises. The Perry policy paid off in September 1999 when North Korea agreed to suspend its missile tests while negotiations proceeded. In return, the US promised to end the sanctions imposed on North Korea under the 1917 omnibus Trading with the Enemy Act—a pledge it did not carry out until just after the first-ever North–South Korean summit meeting of June 2000. The Clinton Administration helped to make that summit possible by signalling its readiness to cooperate with Pyongyang in late March 2000, when it handed North Korea a draft communiqué, to be issued after high-level talks in Washington, declaring an end to enmity.

North Korea wanted the US to end sanctions not only under the Trading with the Enemy Act but also under American anti-terrorism law. Instead the two sides agreed to a joint statement of 6 October 2000 in which North Korea renounced

terrorism and the two sides ‘underscored their commitment to support the international legal regime combating international terrorism and to cooperate with each other in taking effective measures to fight terrorism’, and in particular ‘to exchange information regarding international terrorism’.<sup>8</sup>

The resolution of these issues prompted Kim Jong Il, Kim Il Sung’s successor, to send his second-in-command, Vice-Marshal Cho Myong Rok, to Washington on 10 October 2000. After three days of talks the two sides affirmed that ‘neither government would have hostile intent toward the other’.<sup>9</sup> This statement—the declared end to enmity that North Korea had sought—opened the way not only to a missile deal but also to negotiations on conventional forces, which could begin once a missile deal was concluded and implemented.

The joint communiqué also obliquely addressed verification: ‘The sides agreed on the desirability of greater transparency in carrying out their respective obligations under the Agreed Framework. In this regard, they noted the value of the access which removed US concerns about the underground site at Kumchang-ni’. Such transparency was needed not only to clear up suspicions at a nuclear site but also to verify a missile ban.

### *The makings of a missile deal*

Two weeks later, Secretary of State Madeleine Albright became the first American official to meet Kim Jong Il when she visited Pyongyang. In the course of the talks, Kim agreed to end exports of all missile technology, including those in fulfilment of existing contracts, and to freeze the testing, production and deployment of all missiles with a range of more than 500 kilometres (km). That would cover the No-dong, the Taepo-dong I and II and, arguably, the SCUD-C. In return, the US agreed to launch two or three North Korean satellites a year.<sup>10</sup> To replace the revenue forgone by halting missile exports, North Korea agreed to accept compensation in kind, not cash. Although Albright did not say so, the US was prepared to arrange for US\$200–300 million a year in investment and aid for Pyongyang.<sup>11</sup> Above all, North Korea wanted President Clinton to visit Pyongyang to seal the deal as the consummation of its 10-year campaign to end enmity. Without Clinton’s commitment to come, the talks stalled.

Instead of picking up the ball where Clinton had dropped it, the new American President, George W. Bush, moved the goalposts. He picked a fight with South

Korean President Kim Dae Jung in March 2001 by publicly repudiating reconciliation and privately discouraging him from concluding a peace agreement with North Korea. After completing its Korea policy review, the US Administration reneged on past promises and tried to reinterpret agreements with North Korea unilaterally.

First, President Bush sought 'improved implementation' of the 1994 Agreed Framework, in effect rewriting it to expedite North Korean compliance with IAEA inspections without offering anything in return. Second, he sought 'a less threatening conventional military posture' on the part of North Korea. Yet, given its military inferiority, the country cannot adopt a less threatening military posture on its own.<sup>12</sup> Third, the Bush Administration decided that, as a matter of policy, progress towards a missile deal would depend on progress being made on the other issues that concern it. That policy will probably ensure that no progress is made on any issues at all.

Most important of all, in his State of the Union address on 29 January 2002, President Bush repudiated the 'no hostile intent' pledge of 12 October 2000 when he said of North Korea that: 'States like these, and their terrorist allies, constitute an axis of evil, arming to threaten the peace of the world'.<sup>13</sup> Subsequently he said he would 'confront the worst threats before they emerge', strongly implying a strategy of preventive war against proliferators.<sup>14</sup>

As a result, no negotiations with North Korea on missiles or any other issue took place between November 2000 and October 2002, although North Korea did maintain its moratorium on missile test launches. North Korean missile exports continued and so did missile development. North Korea also gave new impetus to covert work on uranium enrichment. The existence of that programme has been known to US intelligence for well over a year. When Assistant Secretary of State James Kelly confronted the North Koreans with evidence of this in talks in Pyongyang in October 2002, they acknowledged it, thereby putting the covert enrichment programme on the negotiating table.

North Korea's 'confession' has hardliners to advocate punishing it, but the crime-and-punishment approach has not worked in the past and there is little reason to believe it will succeed now. If it does not, the US may eventually find itself back in negotiations with the North Koreans, not only about its nuclear concerns but also about other outstanding security issues, including missiles.

## Future issues for a missile agreement

For the current freeze to be turned into an outright ban, significant issues remain to be resolved. One is the 'elimination' of North Korea's missiles. The Taepo-dong I and II are not yet deployed, but North Korea will probably withhold any commitment to eliminate its No-dong missiles as a form of leverage on Japan, which is a potential source of the lion's share of compensation for the missile deal. It will not yield until Japan accelerates talks on the normalisation of relations and declares an end to enmity.

A second unresolved issue is the extension of the freeze to all North Korea's missiles with a range of over 300 km.<sup>15</sup> That would cover shorter-range SCUD-B missiles, which North Korea regards as part of its conventional deterrent. It might be persuaded to dismantle them, but only in the course of conventional force negotiations with South Korea and the US.

A third issue is how to turn the freeze into a verifiable ban. On-site monitoring to verify a ban on production and deployment—which negotiators were calling 'transparency' and 'confidence-building measures on missiles'—was discussed during Madeleine Albright's talks in Pyongyang and in greater detail at talks between Robert Einhorn, assistant secretary of state for nonproliferation, and Jang Chang-chon, director general for American affairs of the North Korean Foreign Ministry, in Kuala Lumpur, Malaysia, from 1–3 November 2000; but North Korea was unwilling to make any commitment to verification, even in principle, until it had President Clinton's commitment to come to Pyongyang.<sup>16</sup>

North Korea has in fact already taken the single most important step towards limiting the missile threat it represents—a moratorium on test launches. Without more tests, it will not have new types of missile worth deploying or selling. While a handful of states have been willing to buy a few untested missiles in order to develop them further on their own, that market is limited. The test moratorium can be monitored with high confidence by national technical means (NTM) alone.

Sceptics argue that North Korea could continue developing missiles even under a verifiable test ban. North Korea's No-dong and Pakistan's Ghauri, they say, are the same missile and Pakistan, in effect, has been testing the No-dong for North Korea, rather than reverse-engineering it and adding its own or Chinese-made components. They also claim that North Korean observers were present at the first

Ghauri test and that this proves that Pakistan is fully sharing the data from its tests with North Korea. Yet the two assumptions have never been fully substantiated.<sup>17</sup> That does not keep sceptics from claiming that Pakistan will transfer the Ghauri to North Korea once it is fully proven and operational.

### *Transparency measures for deployed missiles*

A deployment freeze and a production freeze pose much more of a problem for verification than a freeze on testing. A freeze on the numbers of missiles already deployed would also be more difficult to monitor than a complete ban (if a deployed missile is detected this is clear violation of a ban on deployed missiles, but numbers of deployed missiles are more difficult to establish). On-site verification may not be of much help. Indeed, it is not clear whether American intelligence has ever detected the deployment of a single No-dong missile. What it may have sighted is a truck which transports, erects and launches missiles and is believed to be associated with the No-dong.

The mobility of its launchers makes North Korean cooperation essential to the monitoring of a freeze on deployment. A number of cooperative transparency measures would be needed to help ensure that no militarily significant violations of a deployment freeze had occurred.

One is a declaration of the numbers and types of deployed missiles, along with timely notice of any change in the data.

A second is the 'fencing in' of the missiles' patrol or deployment zones. This transparency measure would take advantage of the fact that the No-dongs are liquid-fuelled and cannot therefore roam freely. They need to be tethered to base to permit rapid fuelling prior to use. They can move far afield temporarily, but not for long periods. Their off-road mobility is also likely to be very limited: they cannot move fast, even on roads, which are seldom well-paved. The more they move around, the more likely this is to affect their reliability. The locations of missile operating bases and deployment areas would also need to be spelled out. Depending on North Korean operating practices, missile launchers might be permitted to roam only within 30 miles of each operating base. Until they are withdrawn to elimination sites, No-dong missiles, missile stages and launchers could be located only within or en route to support facilities and deployment areas, and could not be co-located with shorter-range missiles. Timely notification would be required if they were

destroyed by accident or before they were transported off-base for repair. Transit time would be limited. Article VIII of the 1987 Intermediate-range Nuclear Forces (INF) Treaty could serve as a model for these arrangements.

A third transparency measure would be periodic parades of missiles. The US would have the right to request, say, up to 20 such parades a year, at one North Korean base at a time. On six hours' notice North Korea would have to open the roofs of any fixed structures at the base and its associated deployment zones, remove all the missiles and launchers from concealment, and display them out in the open for at least six hours. This would permit satellite verification of the number of missiles at each base in turn, while not making the missile force as a whole vulnerable to a pre-emptive attack. If the No-dong missiles are to be eliminated, parades at shorter-range missile sites would allow verification that they have not been relocated. A comparable arrangement operated under the INF Treaty.

North Korea would have to remove missiles and support equipment regiment by regiment, rather than one by one, eliminating all the missiles from one site before moving on to the next. The as yet undeployed Taepo-dong I and Taepo-dong II missiles might be scheduled for elimination first. The missiles and associated support equipment would be dismantled at predetermined sites according to pre-set procedures and then displayed in the open for days to permit monitoring by NTM. Missile operating bases and associated support structures and deployment areas would also be dismantled *in situ*. Once they had been dismantled, but before the parts had been removed, North Korea would give at least 30 days' notice to allow the US to verify the dismantling. The agreement would specify arrangements for on-site inspection, if needed. The INF Treaty, especially articles IX and X and the protocol on elimination, offers suitable procedural precedents, but with some exceptions. For instance, destruction by launching might not be permitted.

### *Transparency measures for missile production*

The US can monitor a freeze on production by using surveillance satellites and other NTM, but effective verification may require on-site monitoring at missile factories. The scope of on-site monitoring depends on whether all missile production is prohibited or only production of missiles with a range of 300 km or more.

A complete ban on North Korean missile production would be easier to monitor than an agreement that allowed production of short-range missiles to continue. If

North Korea is willing to halt all missile production, NTM may suffice to monitor inactivity at its missile plants. Yet North Korea's habit, dating from the Korean War, of locating factories underground where they are less vulnerable to detection or destruction from the air will make some sceptics insist on more intrusive, 'any time anywhere', on-site challenge inspections.

If North Korea continued to produce shorter-range SCUDs, all final assembly plants for missiles would need to be subject to continuous on-site monitoring to impede production of prohibited missile types. Arrangements for portal monitoring under the INF Treaty could be a model, but those arrangements were reciprocal.

What would North Korea want in return for letting the US monitor its missile production sites? Although it has yet to say so in negotiations, it might be induced to accept on-site monitoring along the lines of the access it allowed at the suspect nuclear site at Kumchang-ni. It might even be willing to convert its missile factories to civilian production if it received the necessary investment in return. That is the implication of the 'joint venture' formula it talked about for Kumchang-ni. That formula also underlines the importance of the political relationship for verification: the extent of North Korean cooperation in facilitating monitoring will probably depend on US willingness to move to a less adversarial relationship.

Working out arrangements in detail would take time. That was not the case with the Agreed Framework, which was able to capitalise on existing IAEA inspection protocols to facilitate verification.

### *Transparency measures for exports*

The monitoring of exports of missiles, missile components and technical assistance is inherently difficult and will largely depend, as it does now, on NTM. It is doubtful how much challenge inspections in ports or at sea would help, since equipment and experts can be shipped by other than North Korean carriers, which could not be inspected. A ban on production would give the US greater confidence about verifying an export ban.

### *A step-by-step approach to a verifiable missile accord*

If arms control negotiations on missiles were to proceed according to the model provided by the American–Soviet nuclear reduction agreements of the Cold War, all the detailed arrangements would have to be spelled out before an agreement

could be concluded. The 1994 Agreed Framework offers an alternative model: the sides agree to a 'road map' of reciprocal steps, carefully choreographed, without the formality of a ratified agreement. This model may turn out to be better suited to achieving an arms control accord with North Korea. Similarly, moving from a freeze to a ban may be done in discrete but synchronised steps, with verification measures being gradually phased in along with political and economic quid pro quos.

Bans on missile tests and missile exports clearly have priority. Arrangements to facilitate a test ban would be relatively simple to negotiate, perhaps accompanied by a formal reaffirmation of an end to enmity and compensation in kind for a halt to exports. A joint venture to convert missile production facilities might be negotiated next as a quid pro quo for on-site verification of a production ban. Much more significant economic assistance might finally be negotiated in return for a verifiable ban on the deployment of all missiles with a range of 300 km or more.

In negotiating verification of a missile accord, those in the American Government who are opposed to a deal may be tempted to repeat the experience of the Joint Declaration on the Denuclearisation of the Korean Peninsula of 31 December 1991, in which North and South Korea agreed not to 'test, produce, receive, possess, store, deploy or use nuclear weapons'.<sup>18</sup> Going beyond their obligations under the NPT, the two sides also pledged not to 'possess facilities for nuclear reprocessing and enrichment'. On 14 March 1992 North Korea agreed provisionally to establish a Joint Nuclear Control Commission (JNCC) to monitor the denuclearisation accord, but the then Bush Administration pressed South Korea to insist on elaborate and intrusive inspections of each other's nuclear facilities which would have been so demanding that, as one senior official put it, 'if the North accepted them, the South might have to reconsider'.<sup>19</sup> A US official who was intimately involved adds: 'To anyone who had an arms control background, these inspections were totally unworkable, totally unacceptable'.<sup>20</sup> In the words of a State Department analyst, 'the South Koreans were spun up by us'.<sup>21</sup> The JNCC has been moribund ever since.

## Conclusion

In most arms control negotiations, demands for stringent verification by each side are limited by the expectation that the other side will insist on reciprocity. No

such reciprocal arrangements would apply to a us–North Korea missile deal. Instead, reciprocity has a different meaning, one that addresses the very source of the mistrust between the two sides—their hostile relationship. A missile freeze can be turned into a verifiable ban, but not if the us asks for more access to North Korea than it needs, and only if it reaffirms its willingness to end its enmity towards North Korea.

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### **Table 1 Dialogue with North Korea on missiles**

**22 January 1992** High-level US–North Korea talks: Pyongyang hints at willingness to negotiate on missile exports; US bars further high-level talks unless North Korea fully implements IAEA and North–South inspections, and says further improvement in relations will then depend on an end to missile exports

**June 1992** Preparations for No-dong test

**Late 1992** No-dong test cancelled

**October 1992** On initiative of North Korea, senior Israeli Foreign Ministry and Mossad (intelligence) officials hold talks in Pyongyang to discuss economic investment and protest against North Korea missile exports to Middle East

**January 1993** To head off purchase of No-dongs by Iran, senior Israeli Foreign Ministry official visits Pyongyang, offering significant investment and diplomatic recognition in return for end to missile exports to Middle East

**March 1993** After North Korea announces its intention to withdraw from NPT, US persuades Israel to halt missile talks

**March 1993** Iranians visit Pyongyang to discuss purchase of No-dong missiles

**29 May 1993** First and only North Korea test of No-dong missile; Iranians and Pakistanis present at test

**June 1993** After North Korea suspends its withdrawal from the NPT, Israel resumes missile talks with North Korea; Foreign Minister Shimon Peres goes to Pyongyang to close a deal and establish diplomatic relations

**26 December 1993** US welcomes temporary deferral of North Korea missile sale to Iran

**May 1994** No-dong test cancelled after talks with US

**31 May 1994** North Korea tests Silkworm anti-ship cruise missile

**October 1994** Agreed Framework signed; alludes to missiles by holding out prospect of full diplomatic relations ‘as progress is made on other issues of concern to each side’

**January 1996** US Deputy Assistant Secretary of State Thomas Hubbard proposes missile talks in letter to North Korea

**20–21 April 1996** First round of US–North Korea missile talks in Berlin, Germany

**10–11 June 1996** Talks between US and South Korea; South Korea to join Missile Technology Control Regime (MTCR)

**September 1996** us calls off second round of missile talks after submarine incursion into South Korean waters

**September 1996** North Korea begins preparations for No-dong test

**18 October 1996** North Korea calls off preparations at us request at meeting in New York

**11–13 June 1997** At second round of missile talks in New York, us offers deal on exports and tests; no North Korean response

**December 1997** North Korea warns it will not be bound by the Agreed Framework if us does not implement it

**16 June 1998** North Korean publishes proposal to end missile exports, testing and production; threatens to resume tests

**31 August 1998** North Korea tests Taepo-dong 1; satellite launch fails

**21 August–5 September 1998** us–North Korea talks in New York; agreement to resume missile talks

**30 September–1 October 1998** Third round of missile talks; no progress

**25–28 May 1999** Former us Secretary of Defense William Perry in Pyongyang indicates us willingness to lift sanctions and normalise relations if North Korea takes steps to end its nuclear and missile programmes, but does not ease sanctions or unfreeze assets. North Korea continues missile test preparations

**9–12 September 1999** Berlin talks resume; North Korea agrees to announce a missile test moratorium after us announces intention to end sanctions under Trading with the Enemy Act

**Late March 2000** us gives North Korea date for ending Trading with the Enemy Act sanctions and draft of joint communiqué pledging ‘no hostile intent’; North Korea then agrees to summit meeting with South Korea

**13–15 June 2000** North–South Korean summit in Pyongyang

**6 October 2000** us–North Korea Joint Statement on Terrorism

**9–12 October 2000** Vice Marshal Cho Myong Rok in Washington; joint communiqué declares ‘no hostile intent’

**23–25 October 2000** us Secretary of State Madeleine Albright and North Korean President Kim Jong Il sketch out elements of missile deal

**6 June 2001** White House announces comprehensive approach to North Korea, with broadened agenda to include improved implementation of Agreed Framework

and less threatening military posture, not just verifiable constraints on missile programmes and a ban on missile exports

**18 June 2001** North Korean Foreign Ministry spokesman responds that us should first discuss implementation of Agreed Framework and the 12 October 2000 joint communiqué

**28 June 2001** North Korean Foreign Ministry spokesman links nuclear inspections to compensation for loss of electricity because of delay in delivery of first nuclear reactor, suggesting a deal, but warning that North Korea will end nuclear freeze if it does not receive compensation

**October 2002** When confronted by the us with evidence that it was attempting to commence a uranium enrichment programme, North Korea admits it.

## Endnotes

- <sup>1</sup> The White House, Office of the Press Secretary, 'Statement by the President', 6 June 2001.
- <sup>2</sup> The concept of 'tit for tat' was first developed in Robert Axelrod, *The Evolution of Cooperation*, Basic Books, New York, 1985. For a detailed discussion of North Korea's nuclear bargaining behaviour, see Leon V. Sigal, *Disarming Strangers: Nuclear Diplomacy with North Korea*, Princeton University Press, Princeton, NJ, 1998. For a more technical discussion of North Korea's nuclear past, see David Albright and Kevin O'Neill (eds), *Solving the North Korean Nuclear Puzzle*, Institute for Science and International Security, Washington, DC, 2000, chapters 4–8.
- <sup>3</sup> For the nuclear crisis and Carter's role, see Sigal, *Disarming Strangers*, chapter 6; Don Oberdorfer, *The Two Koreas: A Contemporary History*, Addison-Wesley, New York, 1998, chapter 13; and Selig Harrison, *Korean Endgame: A Strategy for Reunification and US Disengagement*, Princeton University Press, Princeton, NJ, 2001.
- <sup>4</sup> Interviews with us officials.
- <sup>5</sup> American and other official sources. Cf. Michael Parks, 'Fearing its foes may buy N. Korean missiles, Israel gets down to business', *Los Angeles Times*, 23 June 1993, p. A-3; Clyde Haberman, 'Israel seeks to keep North Korea from aiding Iran' *New York Times*, 20 June 1993, p. 6; Reuters, 'S. Korea asks Peres not to visit N. Korea', 21 June 1993; David Hoffman, 'Israel Agrees to Suspend Contracts with North Korea', *Washington Post*, 17 August 1993, p. A-17; Robert S. Greenburger, 'North Korean missile males in Mideast, along with nuclear issue, raise concern', *Wall Street Journal*, 19 July 1993, p. A-6.
- <sup>6</sup> For a more detailed chronology, see Leon V. Sigal, 'Negotiating an end to North Korea's missile-making', *Arms Control Today*, vol. 30, no. 5, June 2000, pp. 3–7.
- <sup>7</sup> Korean Central News Agency (Pyongyang), 0416 GMT, in English, 16 June 1998.
- <sup>8</sup> 'Joint US–DPRK statement on terrorism', 6 October 2000.
- <sup>9</sup> US–DPRK Joint Communiqué, 12 October 2000, Washington, DC.
- <sup>10</sup> Michael Gordon, 'How politics sank accord on missiles with North Korea', *New York Times*, 6 March 2001, p. A-1.
- <sup>11</sup> Interviews with us officials.
- <sup>12</sup> Center for Strategic and International Studies (CSIS), *Conventional Arms Control on the Korean Peninsula*, Working Group Report, CSIS, Washington, DC, August 2002; and Michael O'Hanlon, 'Stopping a North Korean invasion: why defending South Korea is easier than the Pentagon thinks', *International Security*, vol. 22, no. 4, spring 1998, pp. 135–70.
- <sup>13</sup> President George W. Bush, Text of the State of the Union address to the US Congress, Washington, DC, 29 January 2002.
- <sup>14</sup> The White House, Office of the Press Secretary, 'Remarks by the President at 2002 Graduation Exercise of the United States Military Academy West Point', Washington, DC, 1 June 2002.
- <sup>15</sup> That standard was drawn from the Missile Technology Control Regime, which functions as an international cartel to regulate the export of missiles and missile technology.
- <sup>16</sup> Interviews with North Korean and American officials.
- <sup>17</sup> Interviews with us officials.
- <sup>18</sup> Joint Declaration on the Denuclearisation of the Korean Peninsula, 31 December 1992.
- <sup>19</sup> Interview with senior us Administration official, 27 February 1992.
- <sup>20</sup> Interview with us State Department official, 6 April 1996.
- <sup>21</sup> Interview with us State Department official, 27 February 1996.

