

## North Korea: the challenge of verifying a moving target

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North Korea's apparent admission in October 2002 that it had a functioning clandestine uranium enrichment programme precipitated a crisis for nuclear arms control and disarmament. Concerns regarding the country's nuclear intentions were heightened by its subsequent expulsion of International Atomic Energy Agency (IAEA) inspectors and the reactivation of mothballed nuclear facilities, combined with the 10 January 2003 announcement of its withdrawal from the 1968 Nuclear Non-Proliferation Treaty (NPT).<sup>1</sup> This crisis comes at a critical juncture for a nuclear nonproliferation regime that is already under considerable stress. Suspect nuclear activities in other states parties to the NPT, such as Iran and Iraq, and the emergence of non-traditional secondary nuclear suppliers like Pakistan threaten to undermine it. How the international community addresses the dangerous precedent set by North Korea's efforts to free itself from the constraints imposed by the NPT will have a major impact on the future integrity of the nuclear nonproliferation regime.

Effective verification of North Korea's nuclear programme will be crucial to any lasting solution to this crisis. The requirement for verification is reinforced by the lack of inherent transparency in the country, where the ruling regime exercises tight control over all sources of information. This factor, coupled with North Korea's history of non-compliance with nonproliferation agreements and its poor record of co-operation with the IAEA, which is responsible for verifying compliance with the NPT, means that any agreement that fails to provide for effective verification is unlikely to receive the backing of the international community and to defuse tensions on the Korean Peninsula. As US Ambassador to the United Nations (UN) John Negroponte noted: 'It's not just a matter of getting the North to give up its nuclear weapons ambitions. North Korea must also accept a reliable verification regime'.<sup>2</sup>

Designing a regime to verify North Korean compliance with its obligations under the NPT and any subsidiary agreement to terminate its probable nuclear weapons programme with the degree of assurance necessary to satisfy the international community presents particular difficulties. Past attempts to secure North Korean adherence to the nuclear nonproliferation regime have foundered on the rocks of verification. Its stark threat perceptions and distrust of other states render it highly reluctant to subject itself to the scrutiny of external observers. North Korea is deeply suspicious of the objectives of multilateral organisations, which it considers to be mere instruments of hostile states. It has referred to the IAEA, for example, as the 'cat's paw' of the US.<sup>3</sup> North Korea's identification with what US President George W. Bush labelled the 'axis of evil' has done nothing to improve its view of the international community.<sup>4</sup>

This chapter examines the obstacles to verifying North Korean compliance with its obligations under the NPT and any subsidiary accord negotiated to roll back its nuclear weapons programme. It considers the political and technical aspects of a potential verification regime for North Korea and recommends approaches to meet the demanding requirements that this will involve. If it is to be viable, any verification regime for North Korea will need to be sensitive to the country's security concerns, without compromising the standard of verification established by the IAEA in the context of the NPT safeguards system.

### **The roots of the present crisis**

North Korea has had a difficult relationship with the nuclear nonproliferation regime in the short time since it entered its fold. It was a relatively late recruit to the cause of nuclear arms control: it concluded a safeguards agreement for two nuclear research facilities in 1977, but only acceded to the NPT on 12 December 1985; and a comprehensive NPT safeguards agreement for North Korea only entered into force on 10 April 1992. The scope and focus of its nuclear programme soon generated concern within the international community, but North Korea's inflexibility on security-related issues, its relative isolation, and its resistance to many traditional policy instruments have limited the options for engaging it on this issue. As a result, there has been far greater toleration of violations of the spirit, if not the letter, of nuclear nonproliferation commitments made by North Korea than

by other states, and the international community has been forced to improvise in its dealings with North Korea.

Attempts to verify North Korean compliance with its nuclear nonproliferation obligations have led to confrontations with the international community. Controversy first erupted in 1993, soon after the country's comprehensive safeguards agreement entered into force, when routine IAEA inspections to verify the initial data declaration (submitted by North Korea in accordance with its safeguards agreement) revealed disturbing inconsistencies.<sup>5</sup> This developed into a crisis when North Korea proved unable or unwilling to address satisfactorily the concerns of the IAEA. Following the Agency's unprecedented invocation of the special inspection procedure in February 1993 in an effort to gain access to two sites of particular concern, and the IAEA Board of Governors' 1994 determination that North Korea was in non-compliance with its obligations under the NPT, North Korea announced its withdrawal from the treaty, although it subsequently 'suspended the effectuation' of its withdrawal.<sup>6</sup>

The manner in which the North Korean nuclear crisis of 1993–94 was defused sowed the seeds of the present crisis. The 1994 US–North Korea Agreed Framework that was negotiated to resolve the first crisis was intended to supplement the NPT and its safeguards by bringing North Korea into compliance with the obligations that it assumed when it acceded to the treaty. Under this accord, North Korea agreed to freeze its existing nuclear programme and to accept IAEA safeguards in return for assistance in meeting its energy needs, diplomatic and economic benefits, and security assurances.<sup>7</sup> Energy assistance to North Korea took the form of the provision of two light-water reactors (LWRS) and monthly supplies of fuel oil in the interim. This aid has been channelled through the Korean Peninsula Energy Development Organization (KEDO), a consortium comprising the European Union (EU), Japan, South Korea and the US.

Yet, while the 1994 Agreed Framework succeeded in keeping North Korea within the NPT fold, it failed to address the underlying issues. The accord deferred their resolution by sacrificing the standard of verification on the altar of political expediency, leaving serious questions about the scope and focus of North Korea's nuclear programme unanswered.<sup>8</sup> The Agreed Framework did not result in the expected application of IAEA safeguards to important segments of North Korea's nuclear programme, including activities at sites that remained operational after 1994.<sup>9</sup>

The Agreed Framework also did not prompt North Korea to take the initiative in addressing outstanding questions regarding its nuclear programme. Consequently, it failed to return North Korea to a state of compliance with its NPT safeguards obligations and did not lay suspicions about its nuclear programme to rest. IAEA Director General Mohamed ElBaradei has noted that North Korea has been in a state of 'chronic non-compliance' since 1993.<sup>10</sup>

### The current crisis

The current crisis is more acute than that which confronted the international community a decade ago. Both North Korea and the US have abandoned the Agreed Framework, while North Korea has repudiated the bilateral Joint North–South Declaration on the Denuclearization of the Korean Peninsula, which it issued with South Korea in 1992.<sup>11</sup> North Korea has backed up claims of its 'entitlement' to develop nuclear weapons with specific measures to terminate such monitoring of its nuclear infrastructure as had survived the crisis of 1993–94. As well as expelling resident IAEA monitors, North Korea has disabled surveillance cameras and removed seals placed by the IAEA in the Yongbyon nuclear complex.

The seriousness of the crisis has been heightened by the growth of North Korean military power projection capabilities and by changes in the international environment. North Korean threats of retaliation in the event of 'aggression' are made much more credible by its development of the *Taepo-dong* series of intermediate-range ballistic missiles, as well as by the extent of progress in its efforts to develop nuclear weapons. The country now potentially possesses the capacity to strike targets throughout and well beyond Northeast Asia. An unchecked North Korean nuclear weapons programme, coupled with a viable delivery system, cannot fail to have a negative impact on regional security: it is unlikely that regional states will fail to respond to a threat of this magnitude. At the same time, the post-11 September international environment is far less tolerant of the activities of 'rogue states' than it was a decade ago, increasing the potential for a military solution to the crisis.

Resolving the present crisis is complicated by the high degree of ambiguity surrounding North Korea's clandestine nuclear programme. While there has been considerable speculation from a variety of sources regarding specific activities and the level of progress, many of these reports are second- or even third-hand and offer conflicting

information: there is little about the state of North Korea's nuclear programme that can be declared with any certainty. This uncertainty extends to the motivations driving North Korea's nuclear weapons programme. Opinions differ as to whether its primary objective is defensive, to develop a nuclear capability sufficient to deter any attempt by the US to impose its will on the country, or whether the primary value of nuclear weapons to North Korea lies in their capacity to leverage concessions from the international community, particularly the US. North Korea has contributed to this confusion by sending mixed signals regarding its conditions for renouncing the development and possession of nuclear weapons.

### **The North Korean verification challenge**

The present North Korean verification challenge is much greater than that of a decade ago. If North Korean declarations and informed analysis are correct, the international community now confronts the prospect of having to verify nuclear disarmament as well as nuclear nonproliferation. The requirement to verify the inventory and the dismantling of what could be a substantial arsenal of nuclear weapons (one source places North Korea's production capacity at up to 253 warheads by the end of the decade), in addition to an extensive nuclear infrastructure, will greatly increase the complexity and burden of verifying North Korea.<sup>12</sup>

Efforts to verify North Korea's nuclear programme must contend with a major dilemma: the mistrust of North Korea by other states makes a high standard of verification all the more necessary, while North Korea's mistrust of other nations discourages it from agreeing to what most members of the international community would consider to be an acceptable standard of verification. Developing a successful verification regime for North Korea will require balancing the measures necessary to provide a high level of assurance that its nuclear industry is not engaged in the development or production of nuclear weapons, and that any nuclear weapons and fissile material that it has produced are accounted for or disposed of, against the not inconsiderable demands of acceptability from the North Korean perspective.

Designing a verification system for North Korea assumes that, potentially, the country is prepared to abide by the norms of the global nuclear nonproliferation regime and that it is willing to accept verification of its nuclear activities and materials. Both assumptions remain problematic, but there are indications that North Korea

may be prepared to commit itself to verifiable nuclear nonproliferation. A number of North Korean statements have suggested that it would consider renouncing its nuclear weapons programme if this would help it to attain key objectives.<sup>13</sup> The regime has been somewhat less forthcoming on verification, but has left the door open to some level of monitoring and inspection. North Korea's Ambassador to Russia, Pak Ui-chun, for example, has been quoted as saying that North Korea was 'ready to prove' that the Yongbyon plant was not involved in a clandestine nuclear weapons programme.<sup>14</sup>

Although North Korea and the international community consider it essential to supplant the 1994 Agreed Framework, this accord may provide a basis for the development of a more lasting verification regime. There is some support in the us, North Korea and in other states, such as Japan, for the Agreed Framework's general formula, which provided for North Korea to renounce any nuclear weapons programme and accept verification of its compliance with its nonproliferation obligations, and for it to receive assistance from concerned members of the international community.

Any arrangement to resolve the present crisis will need to avoid the pitfalls associated with the Agreed Framework. The latter's ultimate collapse resulted from its failure to generate the expected results. North Korea and the international community entered into the agreement believing that it committed the other side to particular undertakings—obligations that each side believes the other failed to fulfil. There remains a wide gulf between the position of North Korea and that of the international community on the trade-off involved. While Pyongyang apparently feels that it should be compensated for agreeing to abide by nuclear disarmament and nonproliferation norms, concerned members of the international community balk at paying it to satisfy such commitments, which it assumed voluntarily. In July 2003, for instance, us Under Secretary of State for Arms Control John Bolton declared in reference to North Korea that '[t]he days of blackmail are over'.<sup>15</sup>

The key to resolving the North Korean nuclear crisis will be finding a way to provide for the denuclearisation and verification that the international community is pursuing and to offer the assistance that North Korea is seeking without forcing either side to compromise unduly or to be seen to be capitulating to the other. Negotiating such a solution will necessitate overcoming a number of major obstacles concerning the subject and modalities of verification and the returns to be made

to North Korea for adhering to the norms of the nuclear nonproliferation regime, including accepting effective verification of its nuclear programme.

### *The subject of verification*

Given the potential range and level of advancement of North Korea's nuclear industry, the possibility that it has already produced and deployed a small number of nuclear weapons, and the country's known penchant for establishing redundant capabilities and facilities wherever possible, an effective regime to verify North Korean compliance with nuclear disarmament and nonproliferation commitments will need to be comprehensive and intrusive. Verification will have to address the full scope of North Korea's nuclear infrastructure, involving an extensive array of facilities and activities spanning the entire spectrum of the nuclear fuel cycle from uranium mining and milling to fuel fabrication, enrichment and waste storage. This is not to mention the likely requirement for the verification of activities specific to the development, production and deployment of nuclear warheads.

Although our understanding of North Korea's weapons-oriented nuclear infrastructure is far from complete, the available evidence suggests that nuclear weapons-related research and development (R&D) is conducted at multiple centres situated at widely separated locations. An excellent example of North Korean efforts to maximise its chances of success is provided by its dual-track approach to acquiring the fissile material for nuclear warheads: it is known to have initiated efforts to produce high enriched uranium, as well as attempting to extract plutonium.

In order to ensure that the entire range of North Korea's nuclear-related R&D and production activities and facilities and any sites that may house completed weapons are subject to verification, it will be necessary to establish an accurate baseline of its existing nuclear programme. The effectiveness of disarmament and post-baseline verification will depend on the success of this stage. The baseline will provide the foundation for terminating any proliferation-related activities and for verifying subsequent North Korean compliance with its disarmament and nonproliferation commitments. This will offer the necessary assurance of its commitment to nuclear nonproliferation and of the irreversibility of any disarmament measures that are deemed necessary. Establishing an accurate baseline will have the added benefit of helping to resolve the inconsistencies revealed by the IAEA's 1993 inspections, which remain outstanding.

Mapping North Korea's nuclear history will be a formidable task: its nuclear programme has been underway for decades and many details of its evolution, successes and failures remain shrouded in secrecy. The contributions of foreign sources of expertise, technology and materials will be particularly difficult to chart, due to the sensitivity of the subject in the countries concerned. The precedent set by the IAEA's effort to baseline South Africa's nuclear weapons programme is instructive in this regard. Even with the co-operation of the South African authorities, determining the outlines of its apartheid-era nuclear programme proved to be a very difficult exercise.<sup>16</sup>

The effectiveness of efforts to establish an accurate baseline of North Korea's nuclear programme will depend to a large extent on the degree of support provided by North Korea. Proactive North Korean co-operation will be essential due to the relative dearth of knowledge on its nuclear programme, the extremely limited level of transparency in the country, and the probability that corroboration of information from external sources will not be forthcoming. Any relevant information obtained from external sources would help to confirm that provided by North Korea, as well as helping to develop a baseline of its nuclear programme.

Measures to verify ongoing North Korean compliance with the NPT and any agreement required to address a nuclear weapons programme similarly will need to include the full range of nuclear facilities and activities and any military facilities and activities associated with operational nuclear weapons. Given the apparent scope of North Korea's nuclear programme, this will constitute a considerable burden for whichever body assumes responsibility for verification. Hence, it may be necessary to prioritise facilities and activities for the purpose of verification. Providing for differing levels of intensiveness of verification would help to counter-balance the costs involved and to allow for the most efficient use of resources. Verification of North Korea's nuclear programme could be structured on two distinct levels: more intensive measures for higher-priority targets, and less intensive measures for those of secondary importance.

More intensive verification measures could be applied to facilities and activities that are legitimate from the perspective of the NPT, but which could potentially make a major contribution to a nuclear weapons programme. Such a focus is in keeping with the traditional objective of comprehensive NPT safeguards agreements,



which is to deter and, if necessary, detect the diversion of civilian nuclear resources to military projects. Given North Korean claims to have reprocessed spent nuclear fuel, it will be critical, for example, to ensure that spent fuel storage facilities, such as those at Yongbyon, are subject to particularly close scrutiny.

Less intensive measures could target decommissioned facilities or facilities and activities of secondary importance. These could include any facilities associated with operationally-deployed nuclear weapons, such as storage depots or missile sites, and facilities that were formerly engaged exclusively in nuclear weapons R&D, but which are required to be closed under a future North Korean disarmament agreement. The plutonium reprocessing facility at Yongbyon, which was shut down under the Agreed Framework, but which now appears to have been returned to operational status, would be a prime candidate. This level of verification would need only to confirm the non-active status of establishments formerly associated with a nuclear weapons programme or the non-nuclear nature of military facilities that once housed nuclear weapons.

It will be important to resist the temptation to attempt to develop a single verification regime to cover potential nuclear delivery systems as well as nuclear weapons and related activities and materials. While the country's ambitious ballistic missile R&D and production programme is the cause of considerable concern for neighbouring states and others, and its verifiable termination would enhance regional security, this is best undertaken independent of efforts to address North Korea's nuclear industry. North Korea's ballistic missile-related industrial infrastructure is distinct from that of its nuclear weapons programme. Tackling the problem of North Korea's missile industry will require particular solutions with discrete verification requirements.<sup>17</sup> Existing multilateral missile- and technology-control mechanisms, such as the 1987 Missile Technology Control Regime (MTCR), provide a sound framework for the effective verification of an end to North Korea's efforts to develop and produce ballistic missiles.

### *How North Korea is to be verified*

The actual verification of North Korean compliance with its NPT and any other nuclear-related disarmament and nonproliferation commitments can be accomplished through the use of established measures. The IAEA has an extensive repertoire of approaches to verifying compliance through nuclear safeguards, many of which

are applicable to the North Korean case. These include accountancy measures designed to ensure the accuracy of declared holdings of fissile materials. There are also passive measures like installing surveillance cameras in sensitive locations in nuclear facilities and placing seals on containers of nuclear materials. Active verification measures include on-site inspections (osis) and environmental sampling.

The choice of specific verification instruments for North Korea will depend on a number of factors, such as the facilities and activities that are to be subject to verification, what verification North Korea is willing or can be convinced to accept, and the resources available for verification. It is worth noting that the employment of many of the potential measures outlined above in the context of a verification regime established to support a resolution of the current North Korean nuclear crisis would not represent a radical departure from the past. The IAEA applied a wide range of verification measures to the North Korean nuclear programme following entry into force of its comprehensive safeguards agreement in 1992. Some of these survived the first nuclear crisis and continued to function until their unilateral termination by North Korea at the end of 2002.<sup>18</sup>

The major difference between past efforts to design a verification system to address the North Korean nuclear programme and the development of a verification regime to support a new agreement to rein in or roll back North Korea's nuclear programme lies in the changed political context. North Korea is now far more wary of verification than it was before the nuclear crisis of 1993–94—it is possible that it did not realise at that time just how effective it could be. Any North Korean apprehensions on this point have been reinforced by the regime's questioning of the impartiality of verification and the objectives of those who are attempting to impose it on the country. North Korean sensitivity to verification is particularly evident with regard to intrusive measures like OSIS. The IAEA's request for special inspections in 1993–94, which, on the basis of available evidence, it was entitled to make, may have contributed to this. As noted above, this request contributed to Pyongyang's decision to withdraw from the NPT.

There are a number of possible approaches to minimising the negative aspects of verification from North Korea's perspective without compromising its potential effectiveness. The most basic of these involves making extensive use of non-intrusive verification measures, which avoid the need for inspectors to enter sensitive locations.

Environmental sampling, which does not necessarily require admission to target facilities, could play a particularly valuable role. The utilisation of satellite-based sensors could also contribute to non-intrusive verification. Infrared sensors based on board satellites can offer an indication of the level of activity in nuclear establishments, thereby providing a basis for directing the application of other verification measures, such as OSIS.

The employment of non-intrusive verification measures in the context of new arrangements for North Korean nuclear disarmament and nonproliferation could build on current efforts by North Korea's neighbours and other interested parties, like the US, to monitor nuclear developments there in the absence of North Korean co-operation. Environmental sampling of North Korea is currently undertaken from South Korea and by US measurements and signatures intelligence (MASINT)-gathering aircraft flying in international airspace to the east of the country. Satellites similarly are making a valuable contribution to the international community's efforts to track North Korea's nuclear programme.

As it will not be possible to dispense entirely with intrusive measures if the verification of North Korea is to be credible, it will be important to structure them in such a way as to minimise North Korean concerns. It will be particularly important to address Pyongyang's apprehensions regarding OSIS. While there is little that can be done about the level of intrusiveness involved in OSIS if they are to provide the assurance necessary to allay the fears of the international community, there are approaches that can minimise their negative impact from North Korea's standpoint. Pyongyang's concerns about OSIS might be assuaged by 'managed access' provisions, such as those that have been successfully employed in the context of verifying the 1993 Chemical Weapons Convention. Under managed access, the inspection of discrete facilities sharing common infrastructure is governed by separate agreements, which limit unannounced admission to facilities in the course of inspections of co-located facilities. Managed access also involves measures like the turning off of computers and the shrouding of equipment, and the random selection of rooms for inspection.

Another potentially useful approach to addressing North Korean concerns over OSIS centres on the composition of the inspection teams. Ensuring that they include personnel from states that are considered less of a threat by North Korea should

help to offset the participation of staff from states whose motives it particularly suspects. The inclusion of US personnel in inspection teams will be especially worrisome for North Korea. Other states that may be of particular concern to North Korea in this regard include Japan and at least some EU members. Inspectors from China and possibly Russia should prove much more acceptable to North Korea.

### *Who is to verify North Korea*

The body or group of states to be given responsibility for verifying North Korean compliance with its nuclear nonproliferation obligations is a particularly sensitive matter. As noted above, North Korea is deeply suspicious of the motives of other states and does not trust even independent multilateral organisations like the IAEA, which it sees as an instrument of the US and other hostile states.

This issue is complicated by the wide gap between North Korea and the international community on the question of how to handle the crisis. North Korea's preference is to address nuclear issues bilaterally with the US—what it refers to as 'direct negotiations'—while the US and other concerned states support a multilateral solution. It is not clear if North Korea's preference for dealing with the US extends to verification itself, but it has been suggested that it is seeking to limit this to the US alone.<sup>19</sup> If this is the case, it intimates that North Korea envisages restricting the verification to accountancy and passive and non-intrusive active measures, as inspectors from the US would be particularly difficult for North Korea to accept. The US, for its part, has steadfastly maintained that the crisis must be addressed within a multilateral framework. This apparently extends to verification as well as to the negotiation of a mutually acceptable solution to the crisis.

If North Korea is prepared or can be convinced to accept a significant role for multilateral organisations, then the IAEA is the natural choice for verifying its compliance with nuclear nonproliferation and disarmament commitments, given its mandate and expertise. The IAEA has sought, since the onset of the crisis, to engage North Korea on the nuclear issue and to re-establish a basis for its compliance with its nonproliferation obligations and for verification. It has also been relatively lenient towards North Korea.

Unfortunately, the Agency may now be too tarnished in North Korea's eyes to be acceptable for the verification role. In North Korea's view, the independence and objectivity of the IAEA has been compromised by its perceived support for the US

position. Nonetheless, North Korea has displayed some willingness to discuss safeguards issues pertinent to the crisis with IAEA officials, although it does not seem to regard the IAEA as the key to a lasting solution.

It may be necessary to create a dedicated body to verify North Korea's nuclear programme, as with KEDO, which was founded to implement the assistance provisions of the 1994 Agreed Framework. While this may help to satisfy North Korean concerns regarding the objectivity of verification, developing a specific instrument for North Korea will require more resources than if an established IAEA mechanism were used. There is also the problem of how a new body will develop the necessary expertise. Developing a unique verification mechanism should make it more acceptable to North Korea, but it would likely be less efficient and more costly. In fact, Japan and the US apparently are considering establishing such an independent verification mechanism, involving inspectors from China, Russia and South Korea, in addition to themselves. They envisage, however, that the inspection teams will co-operate with the IAEA.<sup>20</sup>

There is also considerable scope for developing a bilateral North Korea–South Korea verification mechanism along the lines of that created for Argentina and Brazil. The Brazilian–Argentine Agency for Accounting and Control of Nuclear Materials (ABACC) provides for each state to inspect the other's nuclear facilities and activities. The nuclear industries of South Korea and North Korea provide a basis for reciprocal monitoring and inspections in an environment that would likely be much less threatening from the perspective of the latter. The international community's concerns could be met by having the parties conclude a joint safeguards agreement, and by having this bilateral body report to the IAEA, as is the case with ABACC.

China could be crucial to resolving the dilemma concerning North Korean suspicions of the international community and multilateral organisations like the IAEA. China is in the best position to push North Korea towards compromise due to the fact that it is its only significant long-term ally and is its most important trading partner. China could also potentially play a valuable role in helping to verify North Korean compliance with nuclear nonproliferation agreements, as noted above in the context of the composition of inspection teams. It is in China's interest to prevent regional nuclear proliferation, and Beijing is clearly quite concerned about

the North Korean nuclear crisis. It has supported both a peaceful resolution of the dispute and the return of North Korea to the realm of the nuclear nonproliferation regime. China brokered talks on the subject between North Korea and the US in April 2003, and has taken the initiative in attempting to foster further dialogue between North Korea and the international community.

North Korea seems prepared to accept China as an intermediary, and has not rejected China's attempts to bridge the gap between it and the international community. Such progress as has been made to date—particularly the 'trilateral' talks of April 2003—has been achieved with China's assistance. Its influence seems to be responsible for North Korea's gradual shift towards a position of willingness to consider multilateral talks on its nuclear programme. Over the space of a few months, North Korea's stance evolved from refusal to consider anything other than direct discussions with the US to multilateral talks, albeit restricted to China and the US, to multilateral talks involving Japan, Russia and South Korea, as well as China and the US.<sup>21</sup>

China may similarly be in a position to play a pivotal role in any verification regime that is developed for North Korea's nuclear programme. Its willingness to assume a prominent role might go far in reassuring North Korea and encouraging it to agree to verification. The inclusion of Chinese personnel in inspections of North Korea should not create particular difficulties for the broader international community, as long as they were part of a sufficiently diverse mixture of staff. China's experience as the recipient of OSIs under agreements like the CWC and its experience in providing personnel to multilateral verification organisations, such as the Provisional Technical Secretariat of the 1996 Comprehensive Nuclear Test Ban Treaty, should enable it to fulfil such a role effectively.

The only question regarding China's potential role as an intermediary between North Korea and the international community concerns its continued acceptability to North Korea. There is a danger that China's credibility with, and its influence over, North Korea will decline as a result of its attempts to push the country in the direction of accepting a multilateral solution and verification. North Korea may suspect the objectivity of China given its perceived support for the general position of the US and other members of the international community. North Korean perceptions of China's role may be coloured by the fact that China has traditionally either

supported North Korea's stance on security-related matters, or has at least remained aloof from them.

*What North Korea is to receive in return for accepting verification*

The question of what, if anything, North Korea should receive in return for reining in its nuclear programme and accepting a standard of verification sufficient to satisfy the international community, and even how to characterise what in the view of many is an inherently distasteful exercise, represents another obstacle to resolving the dispute. There is a very wide gap between North Korea and the international community on this point.

Offering North Korea material or other incentives in exchange for adhering to nuclear nonproliferation norms and accepting effective verification of its nuclear programme has been attempted before. It is noteworthy that even the former Soviet Union was forced to employ this approach with North Korea. In 1985, for example, it secured North Korea's commitment to the NPT and to international safeguards in exchange for agreeing to construct three LWRs.<sup>22</sup> North Korea has, in the past, responded positively to the offer of incentives, but its perceived failure to live up to its side of the bargain under the Agreed Framework has discouraged the international community from continuing with this strategy.

North Korea clearly expects a *quid pro quo* in return for scaling back its nuclear programme and accepting a comprehensive verification regime. In fact, there is a substantial body of opinion that its nuclear weapons programme is intended primarily to generate political leverage and concessions from concerned states, such as Japan, the US and EU members. One North Korean diplomat apparently indicated that it was prepared to 'reconsider' its withdrawal from the NPT in exchange, for instance, for the resumption of fuel oil deliveries, which are currently suspended.<sup>23</sup> North Korea's expectations of appropriate compensation apparently include economic incentives, particularly in the form of food and energy assistance, an end to 'hostile' measures by the US, including those that restrict trade, investment and development co-operation, diplomatic rewards in the shape of enhanced ties with the US, and security assurances.<sup>24</sup> In terms of the latter, North Korea has consistently demanded the conclusion of a formal non-aggression treaty with the US.

The international community is understandably quite reluctant to engage North Korea at this level. The US, for example, has indicated that it is not prepared to

return to the negotiating table and to compensate North Korea for fulfilling undertakings that it believes have already been compensated for under the Agreed Framework, although it has suggested that it is prepared to respond favourably to North Korean moves to terminate and accept verification of its nuclear weapons programme. White House Press Secretary Ari Fleischer stated in January 2003 that: 'there'll be no pot of gold at the end of the rainbow until there is verifiable dismantling of their nuclear weapons'.<sup>25</sup> Reports have suggested that US support to North Korea following its return to the nuclear nonproliferation fold could take the form—as was the case under the Agreed Framework—of helping the country to meet its energy needs.<sup>26</sup>

The promise of incentives, material and otherwise, will be crucial to securing North Korean agreement to curb its nuclear programme and to subject it to a standard of verification acceptable to the international community. It will be important to ensure that North Korea is not encouraged to continue attempting to use its nuclear programme to leverage concessions from the international community.

### *Additional Protocol plus for North Korea?*

The Additional Protocol safeguards standard established by the IAEA following the post-Gulf War inspections of Iraq in the early 1990s provides a logical basis for a North Korean verification regime. The requirement to establish a baseline for North Korea's nuclear industry is consistent with the 'cradle-to-grave' data reporting obligations assumed by states that have signed Additional Protocols to their NPT safeguards agreements with the IAEA, and would provide a strengthened basis for the employment of verification measures, including greater access for inspectors. Given the nature of concerns over North Korea's nuclear programme, its history of non-compliance with its nuclear nonproliferation obligations, and the increasing acceptance of the Additional Protocol as constituting the gold standard of nuclear verification, it will be difficult for the international community to accept anything less than this.

The Additional Protocol alone may not provide an acceptable solution to the demanding verification requirements of this case, however. It was not designed with the verification of nuclear disarmament in mind. As a result, it does not provide a basis for the breadth of verification required in this respect, including inspections, which will be necessary if the international community is to be satisfied about the



sincerity of North Korea's commitment to the nuclear nonproliferation regime. If the Additional Protocol is used, it will be necessary to augment it with measures tailored to the particular circumstances of verifying North Korea.

The international community should still strive to secure North Korea's agreement to sign an Additional Protocol. This would help to shift North Korea's point of contact with the international community on this subject from a small group of states centred around the US to the wider international community represented as members of the NPT and the IAEA.

### **Conclusion: getting from here to there**

Arriving at an arrangement to bring North Korea's nuclear programme into the nuclear nonproliferation regime, with weapons-related aspects eliminated and provision for an internationally acceptable standard of verification, will be difficult, but not impossible. There exists sufficient common ground between North Korea and the international community to suggest that it may be possible to resolve the present standoff without heightening tensions. But neither the US nor North Korea wishes to appear to be conceding to the other by taking the first step: the US wants to see North Korea take the initiative in resolving concerns about its nuclear programme, after which it appears willing to offer aid. North Korea, though, seems determined not to move until assistance is provided.

The fact that the obstacles to a resolution of the North Korean nuclear crisis are more political than technical or technological offers hope. This suggests that the proper political environment could enable the parties to overcome their differences, given political will. A number of measures would help. The situation would benefit considerably from both North Korea and the US being publicly less confrontational. The broader international community could facilitate North Korea's acceptance of nuclear nonproliferation, disarmament and verification through a low-key approach. In addition, it would help considerably if North Korea were to state its support for global nuclear nonproliferation norms in an unambiguous manner.

While the international community is understandably hesitant to provide assistance to North Korea in advance of a successful resolution of the crisis, there are measures that it could take that would reassure North Korea of its good intentions. A US offer to provide security assurances to North Korea in the form of a non-aggression

treaty would go far towards addressing the latter's security concerns. There are indications that Washington is considering making such an offer, which would involve no economic and few political costs.<sup>27</sup> The US and other members of the international community could also work to engage North Korea more in economic and political fora, which would have the added benefit of eroding negative North Korean stereotypes of the West.

A third measure involves members of the international community offering to accept greater, even if symbolic, verification of their nuclear facilities and activities. This would help to assuage North Korean concerns about the independence and objectivity of verification. The greatest impact would derive from offers from states that have been at the forefront of the international community's attempts to encourage North Korea to accept comprehensive verification of its nuclear programme. Scope for this is provided by membership of the IAEA. As a member state, North Korea could contribute inspectors to the IAEA's routine verification of compliance by other member states, such as the US. The IAEA could encourage North Korea to supply inspectors as part of efforts to return it to the NPT fold.

Any attempt by the international community to employ negative incentives will almost certainly prove counterproductive. North Korea traditionally has resisted efforts to force it to follow undesired courses of action. North Korea recently indicated, for instance, that it would consider the imposition of economic or political sanctions as tantamount to an act of war.<sup>28</sup>

There is a major challenge involved in developing a verification regime for North Korea that is sufficiently robust to deal with the concerns of the international community and is acceptable to North Korea. It is critical, though, that the process is successful. Not only does the dispute have the potential to destabilise Northeast Asia, but the international community's success or failure in addressing it will set an important precedent for future cases of nuclear proliferation.

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## Endnotes

- <sup>1</sup> North Korea announced that its withdrawal from the NPT was immediate. The IAEA, however, only recognised it as taking effect from 10 April—after the 90-day notification period required by the treaty. ‘North Korea: IAEA recognizes North Korean NPT withdrawal today’, Global Security Newswire, 10 April 2003, [www.nti.org](http://www.nti.org).
- <sup>2</sup> Judy Aita, ‘US wants peaceful solution for North Korean nuclear issue’, US Department of State Washington File, 10 April 2003. Calls for effective verification have come from throughout the international community, including the US. See Mike Nartker, ‘International response: G-8 urges North Korean, Iranian nuclear transparency’, Global Security Newswire, 3 June 2003, [www.nti.org/d\\_newswire/issues/2003/6/3/5p.html](http://www.nti.org/d_newswire/issues/2003/6/3/5p.html), and Judy Aita.
- <sup>3</sup> ‘Korean nuclear talks “went well”’, BBC News, 27 January 2003, <http://news.bbc.co.uk/2/hi/asia-pacific/2700503.stm>.
- <sup>4</sup> See Peter Slevin, ‘N. Korea rejects call for inspections’, *The Washington Post*, 5 December 2002, [www.washingtonpost.com/wp-dyn/articles/A10673-2002Dec4.html](http://www.washingtonpost.com/wp-dyn/articles/A10673-2002Dec4.html).
- <sup>5</sup> See David Albright, ‘Inconsistencies in North Korea’s declaration to the IAEA’, in David Albright and Kevin O’Neill (eds), *Solving the North Korean Nuclear Puzzle*, Institute for Science and International Security, Washington, DC, 2000, pp. 83–98.
- <sup>6</sup> IAEA, ‘Fact sheet on DPRK nuclear safeguards, 8 January 2003, [www.iaea.org/worldatom/Press/Focus/IaeaDprk/fact\\_sheet\\_8jan2003.html](http://www.iaea.org/worldatom/Press/Focus/IaeaDprk/fact_sheet_8jan2003.html).
- <sup>7</sup> Agreed Framework between the United States of America and the Democratic People’s Republic of Korea, Geneva, Switzerland, 21 October 1994, [www.kedo.org/pdfs/AgreedFramework.pdf](http://www.kedo.org/pdfs/AgreedFramework.pdf).
- <sup>8</sup> See ‘IAEA concerned about possible DPRK uranium enrichment programme: seeking clarification from DPRK and USA’, IAEA Press Release, PR 2002/16, 17 October 2002.
- <sup>9</sup> David Albright and Molly Higgins, ‘The Agreed Framework: status report’, in David Albright and Kevin O’Neill (eds), pp. 39–42.
- <sup>10</sup> Quoted in ‘North Korea: IAEA finds North Korea in “noncompliance”’, Global Security Newswire, 12 February 2003, [www.nti.org/d\\_newswire/issues/2003/2/12/6p.html](http://www.nti.org/d_newswire/issues/2003/2/12/6p.html). For a thorough discussion of the verification requirements of, and the difficulties associated with, the 1994 Agreed Framework, see Michael May et al, *Verifying the Agreed Framework*, Center for Global Security Research, Lawrence Livermore National Laboratory, Livermore, CA, 2001.
- <sup>11</sup> ‘North Korea: United States to scrap 1994 Agreed Framework’, Global Security Newswire, 21 October 2002, [www.nti.org/d\\_newswire/issues/2002/10/21/4p.html](http://www.nti.org/d_newswire/issues/2002/10/21/4p.html); ‘North Korea: US will demand expanded new agreement’, Global Security Newswire, 14 January 2003, [www.nti.org/d\\_newswire/issues/2003/1/14/4p.html](http://www.nti.org/d_newswire/issues/2003/1/14/4p.html); and ‘N. Korea defiant at nuclear impasse’, BBC News, 13 May 2003, <http://newsvote.bbc.co.uk>.
- <sup>12</sup> For a range of high- and low-end estimates of potential North Korean production of fissile material and nuclear warheads, see Jon B. Wolfsthal, ‘Estimates of North Korea’s unchecked nuclear weapons production potential’, Carnegie Endowment for International Peace, Washington, DC, 2003, [www.ceip.org/files/projects/npp/pdf/jbw/nknuclearweaponproductionpotential.pdf](http://www.ceip.org/files/projects/npp/pdf/jbw/nknuclearweaponproductionpotential.pdf).
- <sup>13</sup> See ‘North Korea: details emerge of North Korean proposal’, Global Security Newswire, 29 April 2003, [www.nti.org/d\\_newswire/issues/2003/4/29/2p.html](http://www.nti.org/d_newswire/issues/2003/4/29/2p.html).
- <sup>14</sup> ‘Australians visit North Korea’, BBC News, 14 January 2003, <http://news.bbc.co.uk/2/hi/asia-pacific/2655947.stm>.
- <sup>15</sup> Quoted in ‘North Korea: Pyongyang agrees to multilateral talks’, Global Security Newswire, 31 July 2003, [www.nti.org/d\\_newswire/issues/2003/7/31/3p.html](http://www.nti.org/d_newswire/issues/2003/7/31/3p.html).
- <sup>16</sup> See Adolf von Baeckmann, Gary Dillon and Demetrius Perricos, ‘Nuclear verification in South Africa’, [www.iaea.org/worldatom/Periodicals/Bulletin/Bull371/baeckmann.html](http://www.iaea.org/worldatom/Periodicals/Bulletin/Bull371/baeckmann.html).

<sup>17</sup> See Leon V. Sigal, 'Verifying a missile accord with North Korea', in Trevor Findlay and Oliver Meier (eds), *Verification Yearbook 2002*, The Verification Research, Training and Information Centre (VERTIC), London, 2002, pp. 118–122.

<sup>18</sup> For a useful examination of the potential of specific verification measures in the context of North Korea, see Jon B. Wolfsthal, 'Freezing and reversing North Korea's plutonium program', in Jon B. Wolfsthal, Fred McGoldrick and Seongwhun Cheon, *Verifying North Korean Nuclear Disarmament: A Technical Analysis*, Working Paper no. 38, Carnegie Endowment for International Peace, Washington, DC and Nautilus Institute for Security and Sustainability, Berkeley, CA, June 2003, pp. 10–14.

<sup>19</sup> See 'North Korea: uranium effort moving quickly, official says', Global Security Newswire, 13 March 2003, [www.nti.org/d\\_newswire/issues/2003/3/13/4p.html](http://www.nti.org/d_newswire/issues/2003/3/13/4p.html).

<sup>20</sup> 'North Korea: Pyongyang says talks will begin soon', Global Security Newswire, 4 August 2003, [www.nti.org/d\\_newswire/issues/2003/8/4/4p.html](http://www.nti.org/d_newswire/issues/2003/8/4/4p.html).

<sup>21</sup> See 'North Korea: China says North Korea open to multilateral talks', Global Security Newswire, 17 July 2003, [www.nti.org/d\\_newswire/issues/2003/7/17/5p.html](http://www.nti.org/d_newswire/issues/2003/7/17/5p.html) and 'North Korea: Pyongyang agrees to multilateral talks'.

<sup>22</sup> Su-Hoon Lee and Dean Ouellette, 'North Korea and energy assistance: promoting a Northeast Asian cooperative regime', Institute for Far Eastern Studies (IFES) Forum, 24 April 2003, [http://ifes.kyungnam.ac.kr/ifes/ifes/eng/activity/05\\_ifes\\_forum.asp](http://ifes.kyungnam.ac.kr/ifes/ifes/eng/activity/05_ifes_forum.asp).

<sup>23</sup> 'North Korea nuclear crisis escalates', BBC News, 10 January 2003, <http://news.bbc.co.uk/2/hi/asia-pacific/2644593.stm>.

<sup>24</sup> Steven R. Weisman, 'North Korea said to offer small nuclear steps, at a price', *New York Times*, 29 April 2003, [www.nytimes.com/2003/04/29/international/worldspecial/29KORE.html](http://www.nytimes.com/2003/04/29/international/worldspecial/29KORE.html).

<sup>25</sup> Quoted in 'Pyongyang must move first: US', CNN, 14 January 2003, [www.cnn.com/2003/WORLD/asiapcf/east/01/13/nkorea.nuclear/index.html](http://www.cnn.com/2003/WORLD/asiapcf/east/01/13/nkorea.nuclear/index.html)

<sup>26</sup> 'North Korea: Bush might push "bold initiative" if Pyongyang disarms', Global Security Newswire, 15 January 2003, [www.nti.org/d\\_newswire/issues/2003/1/15/4p.html](http://www.nti.org/d_newswire/issues/2003/1/15/4p.html).

<sup>27</sup> 'North Korea: Washington considering nonaggression treaty', Global Security Newswire, 22 July 2003, [www.nti.org/d\\_newswire/issues/2003/7/22/3p.html](http://www.nti.org/d_newswire/issues/2003/7/22/3p.html).

<sup>28</sup> See 'Pyongyang threatens to use new "options"', *The Guardian*, 15 January 2003, [www.guardian.co.uk](http://www.guardian.co.uk).