Step-by-Step Nuclear Confidence Building on the Korean Peninsula: Where Do We Start?

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B-K Kim: My paper, titled "Where Do We Start," marks the final presentation of this workshop. After two days of discussion, I hope we may now have some clues on where to begin.

My involvement with North Korean nuclear issues began in 1991, when the first Joint De-nuclearization Declaration was signed. Immediately afterwards, we formed a joint task force team to conduct mutual inspections, called the Joint Nuclear Control Commission (JNCC). I was drafted to be a member of that team. My involvement with the inspection team changed my life. Just as this is the tenth anniversary of ABACC, this year marks the tenth anniversary of the Joint Declaration and the JNCC. There are some similarities between the two.

I will talk about five points:

- First, we have to revisit the initial declaration of ten years ago. It was and should be the starting point for things to come.
- Second, the 1994 Agreed Framework has room for improvements, in light of having to adjust to the new Bush administration.
- My third point concerns the ongoing KEDO light-water reactor (LWR) construction project, and how all the promises are coming true.
- Fourth, the one sour point is the IAEA verification effort. How will the IAEA draw the line and make its determination?
- Finally, the main interest of this conference is how to move towards confidence building on the Korean peninsula.

Let's start at the beginning. Let me provide some context. Northeast Asia contains a dense population of nuclear power plants. Sixteen plants are in South Korea, and 52 are in Japan. Except for four nuclear power plants in Korea and three in Japan, all of these power reactors are LWRs. In South Korea, 43 percent of the electricity comes from nuclear power. In Japan, that number is around 33 percent. Our main interest, however, is not what we have in Japan or South Korea, but what is happening at Sinpo—the LWR site in North Korea. These two LWRs are the same type of reactors that South Korea developed using indigenous technology during the 1980s, after importing technology from the USA.

The best part of nuclear applications is the electricity produced. The worst part of nuclear applications is the danger from nuclear weapons.

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When North Korea agreed to sign the Joint Declaration on the Denuclearization of the Korean Peninsula at the end of 1991, it surprised everyone, except perhaps a few in government circles. The declaration had six elements:

- The first element said: No nuclear weapons on the Korean peninsula. Immediately after this declaration, the United States, led by the first President George Bush, unilaterally pulled out all tactical nuclear weapons from the region.

- The second element said that nuclear energy was to be used solely for peaceful purposes, which is very similar to ABACC's bilateral agreement.

- The third element specified that North and South Korea would not possess either nuclear reprocessing or uranium enrichment facilities. North and South Korea agreed to these terms and it was announced publicly. Yet, later on the North Koreans tried to reprocess at Yongbyon, thus violating this part of the agreement. This is how North Korea ran into trouble.

- Under the fourth element, North and South Korea agreed to conduct mutual inspections to verify that they did not have reprocessing or enrichment facilities, or nuclear weapons. The agreement specified that the two Koreas "shall conduct inspections of the object or facility selected by the other side and agreed upon between the two sides." This was the problematic part that the two sides could never resolve. South Korea wanted to go to Yongbyon but North Korea refused, saying it was a military site. That was the nature of the problem.

- The fifth element was the Joint Nuclear Control Commission, which was established to implement mutual inspections. Mutual inspections are identical in meaning as the term "bilateral inspections."

After approximately two years of meetings and 13 sessions held in Pyongyang, the JNCC was formed. It was composed of South and North Korean government officials. A technical group of experts also stood by to support the government representatives. In spring 1993, the meetings broke down after only 13 sessions. Nevertheless, the Joint Declaration officially entered into force on February 19, 1992 and still remains valid. This was confirmed and reconfirmed at the June 2001 summit in Pyongyang.

The Joint Declaration is still alive, but no action has been taken. After ten years, it is time to revisit the Joint Declaration. It is interesting and useful to evaluate what happened with the JNCC's mutual inspection efforts of ten years ago, and why these efforts failed. My assessment is that, ten years ago, we lacked an understanding on the nuclear inspection business as a whole. We knew how to build nuclear reactors and fuels, but proving transparency by inspection was virtually an unknown field. In addition, the North Koreans had their nuclear facilities intertwined with their military installations, so it was difficult to clarify which were military and which were not.

Before this declaration, there were U.S. nuclear warheads on U.S. bases in South Korea, but those were removed in late 1991. All the civilian nuclear power sectors were totally separated under civilian control.

The only agreement the JNCC reached was what should be included in the initial reports. When it came time to discuss the inspections—which sites to inspect, and how frequently to inspect

them, what procedures to use, and how to inform and document the sites—the JNCC came into total chaos. North Korea insisted on simultaneous inspections of all U.S. military bases on the same day. This would have meant 20 or 30 places and several hundred inspectors. South Korea wanted to verify North Korea's nuclear capabilities by primarily inspecting the Yongbyon nuclear facility in order to estimate its ability to separate plutonium.

The selection of sites could not be agreed upon, and discussions broke off in April 1993.

Participant: Could you explain more about the contents of the initial report?

B-K Kim: The contents of the initial report were similar to what is normally reported to the IAEA, including nuclear facilities and nuclear materials. North Korea insisted that South Korea include the U.S. Army bases where nuclear weapons were located. South Korea was willing to accept that, but it failed because we could not agree on the sites. There were also other political complications.

Soon after, North Korea tried to open up to the IAEA and put its full-scope safeguards agreement into force. However, the inconsistencies began to mount. The Agreed Framework followed in October 1994, and then KEDO was created to help implement the agreement. Since KEDO's creation, there have been many, many delays.

In 1997, KEDO began site preparation work at Kumho, sometimes called Sinpo. It is the Kumho construction site. In October 2001, the official construction permit from the North Korean authorities is expected, after the preliminary safety analysis report (PSAR) is issued. This shows that North Korea's regulatory system is moving ahead.

What happened in South Korea afterwards? The JNCC folded, but the members and the structure still remains. There are still JNCC members in South Korea's government ministries. In 1994, the Technology Center for Nuclear Control (TCNC) was created at KAERI. Initially, the TCNC was expected to conduct mutual inspections, but that hope disappeared. Instead, in 1997, TCNC took over national inspections of all facilities in South Korea and functioned in parallel with IAEA inspections. During the 1990s, the number of South Korean nuclear facilities doubled as well as nuclear material inventories. Thus, there was good justification for national inspections.

This year, we are entering into expanded cooperation with the IAEA on remote monitoring based at LWRs. Again, the key word is "LWRs"— this is the most salient part of the South Korean nuclear program.

The Additional Protocol (INFCIRC/540) was signed in 1999, and we expect that it will be ratified and enter into force by the end of 2001 or early 2002. The point I want to make here is the LWR linkage. South Korea could create an LWR linkage for the creation of the nuclear infrastructure that is needed in the North.

The Agreed Framework is well known and very unique. The electricity, including HFO, was promised for the price of freezing North Korea's gas-graphite moderated system. The agreement was a symbol of choosing peaceful means over military alternatives, such as the surgical bombing option. It set a precedent for rewarding a rogue state.

Participant: What is HFO?

B-K Kim: This stands for "Heavy Fuel Oil," which the United States promised to provide in the increment of 500,000 tonnes per year. This was promised to provide North Korea with alternative fuel oil to run their fossil plants.

Participant: How long will the United States have to provide this fuel oil?

B-K Kim: The United States will provide and pay for the HFO until the LWRs go into operation.

Participant: The LWRs are not a free gift. They have to pay back the costs. The HFO is free.

Participant: The price of the HFO is the freeze on their graphite-moderated reactors. All five facilities at Yongbyon in North Korea are frozen.

Participant: Who is monitoring the freeze in North Korea?

B-K Kim: The IAEA is monitoring the freeze.

The North Korean's are receiving two Korean Standard Nuclear Plant (KSNP) LWRs. The KSNP type is a 1,000 megawatt pressurized-water reactor (PWR), developed originally in the United States, but was recreated in the Koreas during the 1980s. Now, South Korea is building eight units for operation. Initially, we never thought about providing that particular nuclear system to North Korea, but it was selected under the Agreed Framework. South Korea covers 70 percent of the financing, Japan covers approximately 20 percent, and the rest is provided by the European Union.

The Agreed Framework and the construction of the LWRs have been delayed, for many reasons, but both sides are responsible. There was the submarine incident in 1996 and the missile incident in 1998. Most recently, the North Korean labor strikes at the Kumho site created another delay. The North Korean workers wanted more money. In the construction contract, the manual laborers from North Korea would be paid $110 dollars per month, which is still more than a normal salary in North Korea. Yet, the workers complained and demanded five to six times more.

On the Western side, the financing arrangements took several years to complete. Then the turbine generator contract with General Electric (GE) fell through when GE pulled out over liability concerns.

There are many unresolved issues in the Agreed Framework. I list only three. The first one concerns the transmission line from the Kumho site. The transmission grid to bring electricity from the LWR site at Kumho to consumers needs a total overhaul. The Agreed Framework does not mention this, but the existing line must be reconstructed before the LWR goes into operation in order to deliver the power. But KEDO, at present, has no obligation to deal with this matter, so the solution may have to come through other linkages, perhaps a missile deal.

The second unresolved issue is the destination of the spent fuel from the North Korean 5 megawatts-electric (MWe) reactor. This spent fuel now sits underwater in 220 stainless steel canisters at Yongbyon. But this is only a temporary solution. Since this is Magnox fuel, it cannot be kept

under water indefinitely without being reprocessed, because it tends to disintegrate. It will have to be treated and placed in a more permanent situation soon. An even more immediate problem is that the cans are showing signs of leaks, so something must be done now to look after the integrity of this fuel.

The Agreed Framework states specifically that the disposal of this spent fuel, which could contain weapons-grade plutonium, should not involve reprocessing in North Korea. That means the only place that it can be reprocessed is in the UK or France, since only these countries have experience with Magnox fuel.

Realistically, someone must ship the fuel to the United States or the UK, reprocess it, and dispose of the plutonium and high-level waste. This is a huge, $100 million project. Who will pay? When will it get done? This has not been decided.

Participant: Is there any IAEA verification on this spent fuel?

B-K Kim: Yes, the IAEA verifies this fuel.

Participant: The IAEA has not verified the irradiation history of the fuel.

Participant: Is the material controlled?

Participant: Yes.

B-K Kim: Another unresolved point in the Agreed Framework is the dismantlement of the graphite-moderated facilities at Yongbyon. The agreement specifies that it must be finished by LWR completion, which means a 2008 or 2009 timeframe. This involves the dismantlement of the 5 MWe reactor, the Radiochemical Laboratory, and the fuel fabrication plant. Those are the three facilities that are radioactively contaminated, which will involve some degree of decontamination. This is a distant possibility, but one joint North-South project could be to help in the dismantlement of these facilities.

Let me address some of the arguments raised from some U.S. conservatives that the KEDO-LWR project could be replaced with fossil fuel plants. The arguments are three-fold. The first argument is that substituting fossil plants could produce electricity faster. That is true — a fossil plant takes three or four years to complete. However, we would have to start from scratch. Conservatives also argue that a fossil plant costs 50 percent less than a nuclear plant. This may be true, but it is the fuel costs that will hurt North Korea later on.

Another argument is that the LWR spent fuel will be a proliferation concern. This is perhaps a theoretical or academic concern, but in reality, any anomalies coming from the spent fuel will be detected in a limited amount of time by the IAEA with the remote monitoring available.

Moreover, the North Koreans have only the first core load of fuel secured; any reloaded fuel supply will be in jeopardy. The North Koreans also lack LWR-type reprocessing capabilities. This is a considerably different technology, although it is similar to the PUREX facility that they have. The LWR proliferation concern is really a non-issue, and I think it is fizzling away, but perhaps not.

The third topic is the LWR construction issue. Where do we stand now? The construction permit is the major milestone. The North Korean State Nuclear Safety Regulatory Commission (SNSRC) will issue a construction permit in the later part of 2001, hopefully before October. But since the North Koreans do not have experience in licensing LWRs, the safety reviews are actually being performed by three layers of experts at the Korea Institute of Nuclear Safety (KINS), the South Korean regulatory body, the IAEA, and the Nuclear Safety Review Group. All of these groups are conducting separate layers of safety review, but we don't expect major issues here because it is a copied plant. It is an identical plant that we have built and operated in South Korea many times over.

Thus, the reactor building-site excavation begins immediately following the construction permit issuance, which will be sometime this year. That will be a major, major milestone, which will move this construction project into reality.

We have more reasons to believe it will be successful. KSNP is a proven contractor in South Korea. KEPCO is our electric utility company and is the overall project manager. Dujung is our hardware manufacturer of nuclear steel supply systems and turbine generators. KOPEC is our architect, engineering and interface system designer. KNFC is the nuclear fuel supply company. All are on schedule and on budget to deliver all the needed hardware and software to North Korea.

The interesting issue that came up recently deals with safeguards and export control. In supplying the light-water reactors, there are seven trigger list items under the Nuclear Supplier's Group (NSG) guidelines. This list includes: the reactor vessel, steam generator, reactor internals, control-rod drive mechanism, neutron source, reactor coolant pump, and nuclear fuel. Those are the seven items that have already been contracted to suppliers — mainly in South Korea, but also to ABB-CE, which is officially called Westinghouse because of a merger, and the Mitsubishi Heavy Industry of Japan. These are currently being produced in these heavy industry plants. They will be ready for shipment in a four or five year timeframe.

However, the technical documents stemming from these components need to be transferred sooner. This creates the need for a bilateral agreement, based on the industry guideline, because South Korea, the United States, and Japan are members of the NSG. The first key component to go to North Korea is the reactor vessel. It is being produced by the South Korean company—Dujung. We need some kind of official North-South agreement on a peaceful-use warranty, which is the main NSG requirement. In early July 2001, the first meeting on this export control issue took place between North and South Korean in Hyangsang, North Korea.

Likewise, the United States will also need a nuclear cooperation agreement with North Korea when its first hardware is ready for shipment. That is going to come around the year 2004. The United States is thinking about this, but it is not an urgent issue. On the other hand, the matter is urgent for South Korea because the documents need to go sooner.

Participant: Doesn't South Korea need more than just an export control agreement? Doesn't it actually need a North-South MOU?

B-K Kim: It would be better if we had the full, bilateral, nuclear cooperation agreement. The problem is that North and South Korea, on the government-to-government level, do not recognize

each other as a separate state. Thus, such a government-to-government bilateral agreement cannot exist. That is why this MOU is a more practical alternative, but the content is the same.

Participant: I should comment on that. An MOU, or "memorandum of understanding," may be one option, but there are two other options. We are discussing this issue with North Korea through KEDO. It is hard to say what type of agreement or warranty will be issued by North Korea. They understand that they need a peaceful warranty document for the trigger list items at this time.

B-K Kim: The important thing to emphasize is that the bilateral discussion has taken place and things are moving. This is a beginning.

Another area for cooperation is training. North Korea is about to construct and operate two massive LWRs and it needs pressurized-water technologies for its infrastructure. Training is the first way to start this safety analysis and overview. KEPCO, our electric utility and the prime contractor to KEDO, is preparing a special course for high-level North Korean officials in August or September of this year. In 2001, we will see some bilateral contact in this training aspect.

Participant: It was delayed until the end of this year.

B-K Kim: Another interesting change is nuclear material control, physical protection, and the safeguards area. The Australians have initiated a support program to the IAEA and will conduct a safeguards training course for the North Koreans. A similar thing happened under the regional safeguards training course last year where two of the North Korean safeguards experts, or inspectors, came down to Australia. Mr. An and myself were there to meet them and we had nice discussions. Now, they are one step further. They want to get serious training on nuclear safeguards. The IAEA is able to get help from the Australians and they are going to provide a two-week course. This is scheduled for August 2001.

This is a process of "nuclear glasnost," in my estimation. I am borrowing this Russian term because I think the LWR project is bound to bring transparency to North Korea. Many infrastructure linkages to the outside world are inevitable. One example is the remote monitoring of the LWR spent fuel for any anomalies. That is what the IAEA will do and that is what the IAEA currently does in South Korea. Interdependency from outside will bring them to break away from the total isolation that they have now in terms of fuel supply, spare parts supply, training supply, everything. International cooperation, in terms of safety, operation maintenance, and safeguards is inevitable. A so-called "glasnost" has to happen.

The fourth subject I will address is the difficult task of IAEA verification. Article IV.3 of the Agreed Framework states: "When a significant portion of the LWR project is completed, but before the delivery of key nuclear components, the DPRK will come into full compliance with its safeguards agreement with the IAEA."

The first key nuclear component that will go to the Kumho site is the first one I addressed on the seven trigger list items — the unit 1 reactor vessel — which is now being manufactured at Dujung Changwon plant. My colleagues and I visited the plant a few months ago. We saw the huge piece of metal that is being prepared for machining. The language in the agreement states "before delivery" of this particular key component. What do we mean by before delivery?

It means the shipment date for the reactor vessel at the Kumho site. I think this will happen in October 2004. The year 2004 will be a key, milestone year in regards to the Kumho project. Likewise, what does completing a "significant portion" really mean? This has been agreed between the two Koreas and between North Korea and KEDO. I understand it to mean that the civil structure of the main buildings will be completed and ready by 2004. This will begin once the construction permit and excavation of the reactor building starts this year.

The year 2004 will be a crucial turning point for testing North Korea's full compliance with its initial safeguards report. The IAEA will verify North Korea's full compliance by judging the correctness and completeness of this initial report. The IAEA has said it will take at least three years to complete this task. I believe that estimate is a bit conservative, but still, it will take a long time.

It should be an incentive for North Korea to begin early. If the IAEA began early, and the task took three years, then it would theoretically finish around 2004. Then the reactor vessel would be shipped to the Kumho site, and the construction project would continue without interruption. That would also allow LWR viability to be maintained. However, that is the big question.

In terms of the IAEA and verification, David's paper addressed plutonium and how much plutonium North Korea possessed. This would be the central issue to the IAEA and the judgment basis would be the operational history of the 5MWe reactor and the reprocessing throughput. The IAEA is hoping to retrieve the spent fuel canisters, obtain gross gamma non-destructive assay measurements, and take process and swipe samples from strategic points. David mentioned two of these strategic points when he showed us those two waste sites. The essential question is: How much plutonium was separated, and is it well over one significant quantity (SQ)? I intentionally use the phrase "well-over," which is neither too specific nor too microscopic.

The IAEA might also investigate the highly enriched uranium (HEU) enrichment probability, or the possibility of North Korean enrichment capabilities. This is a future possibility.

Another measure for future consideration is to bring the Additional Protocol into force in North Korea beyond the year 2004. It would be highly desirable to bring North Korea into the Additional Protocol.

Consider what happens in case there is an inconsistency or an inconclusive plutonium amount, despite positive cooperation from North Korea. Under these circumstances, the IAEA would be in a very difficult position to draw the line, whether or not full compliance is met. One possibility is that the IAEA Board would make a conditional approval of the verification issue to allow the LWR construction to continue beyond the reactor vessel installation in 2004. The condition could be that North Korea bring the Additional Protocol into force before the initial core fuel loading at the LWRs, which would be sometime in 2007. This is another possibility, which is not clear in the Agreed Framework at the moment.

My final point is: how do we go from here to confidence building? I believe the prerequisites—that is, what must happen before real change can occur—are positive results between U.S.-North Korean and North-South Korean consultation meetings, which are still ongoing, but seem to

be stalled. Nevertheless, dialogue between the United States and North Korea must reach a comprehensive reciprocity package, addressing missile threat reduction and early nuclear verification issues for electricity and energy infrastructure.

The KEDO LWR construction progress must reach a higher level of visibility in North Korea as a viable project that will improve their electricity future. The project will reach this level of higher visibility when the construction permit is granted and the reactor building excavation starts sometime this year.

Participant: Is there any link between these nuclear reactors and North Korea's missile development?

B-K Kim: That is a big issue, and the answer is yes and no. In 1999, former U.S. Secretary of Defense William Perry issued a report linking nuclear and missile issues. Now, the United States is simply more preoccupied with missiles because of its national missile defense program.

However, when discussing confidence building and the North Korean nuclear issue, it is perhaps better to separate the nuclear and missile issues. In order to look at the step-by-step approach to confidence-building measures, look at what is already taking place on the Korean peninsula and what can take place in the future.

A peaceful-use warranty between the two Koreas is already being considered. This could be a bilateral MOU or another kind of agreement. Training on PWR infrastructure technologies is starting to take place. Training in safeguards technologies is already taking place with the help of Australia. So, in a limited way we have started moving towards confidence-building measures.

What can happen in the future? The exchange of visits among North-South nuclear specialists is one possibility. Of course, it would help if the presidents of both countries could exchange visits first and set the right atmosphere. In this regard, the ABACC experience can be very helpful. We do not have to start from the very sensitive nuclear material accountancy for the exchange of visits. We could start from the very basic, more benign subjects, such as the research of isotopes, radiation monitoring, quality assurance, isotope utilization, and so on.

Another step we could consider is increased cooperation between North Korea and the IAEA. Even though North Korea pulled out of its membership, it could be reinstated. Then the North Koreans will be in a more receptive mode for technical cooperation. They could also move towards the Additional Protocol. After all, this kind of Additional Protocol was caused by states like Iraq and North Korea. If we can bring them into the Additional Protocol infrastructure, it will be a big change and make a big impact.

Finally, mutual inspections, or bilateral inspections, between the two Koreas should be complimentary to the IAEA. We learned our lessons from ten years ago and we should not repeat the same mistakes. This means that both sides need to be trained. We must talk at the same technical level, like our ABACC colleagues. We should stay away from politics and stick to a strictly technical basis to bring credibility.

That is where training comes into play. We need to train our inspectors and their inspectors. Perhaps we can start with similar facilities, like a research reactor. North Korea has an IRT reactor.

We can start with something like what Dr. Song suggested yesterday—radiation monitoring, perhaps offsite, or maybe near a facility, but gradually start building this mutual inspection as a confidence-building measure. It has to be reciprocal. It has to be symmetric. Similar facilities with similar types of technology used—which means that we will need similar training experience.

In a way this looks like a long shot, but who knows? This is essential to most of the other papers discussed during this workshop. How do we get there?

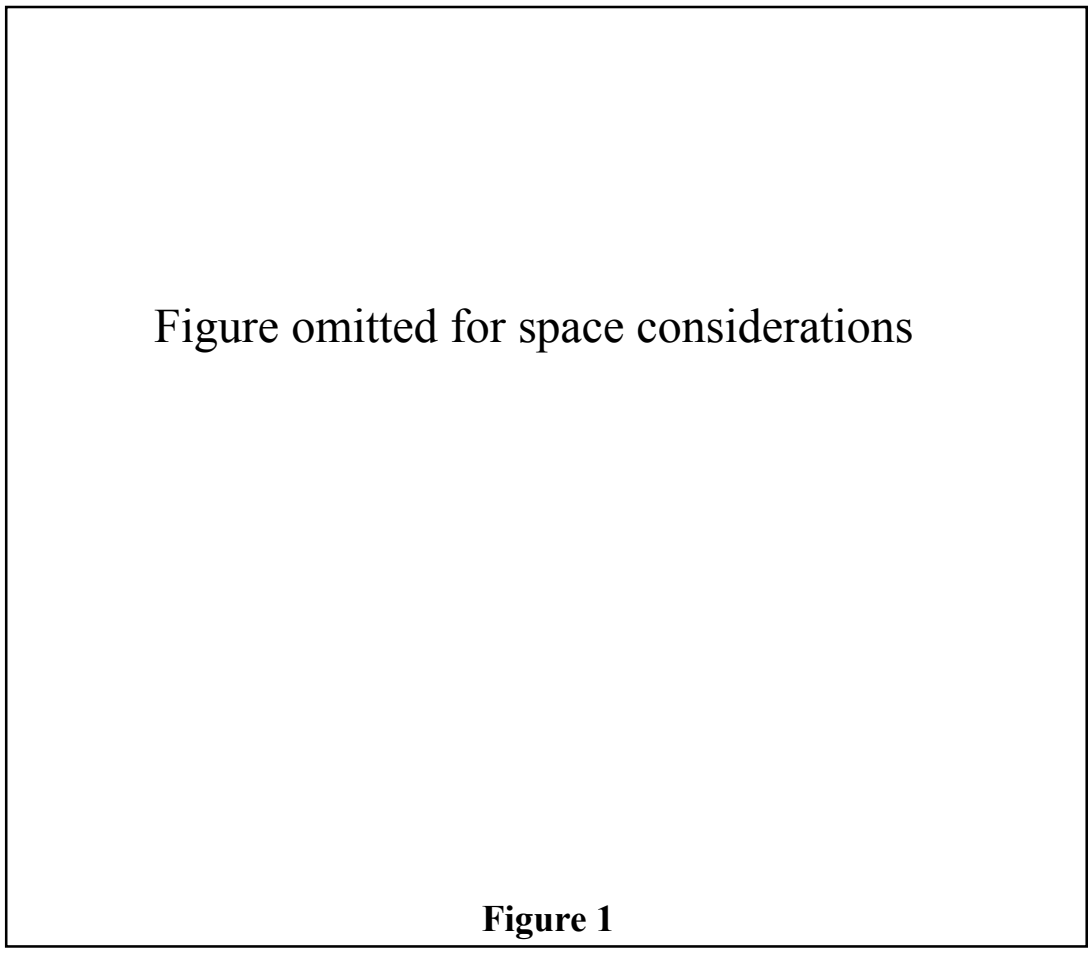

Figure 1

My final conclusion is illustrated by my most favorite satellite photo, which was taken during December 2000 over the Korean peninsula (figure 1). This picture was taken at night with long-time exposure of the cameras. You can see China, Korea, Japan, and Taiwan. The most striking feature of this is, of course, what you are visually seeing is electricity. The glow of electricity is coming from the big cities and highways, and so on. Electricity is key to this problem and the solution we are seeking.

If you see the Korean peninsula, it is apparent that North Korea is completely in darkness. That is why they are so desperate for electricity and for compensation because of the LWR delays. They are desperate. They need electricity. South Korea can provide electricity. During the winter-time, the South Korean grid has excess capacity. In the summertime, however, we have too much air-conditioning, and there is no excess capacity.

In North Korea, there is only one light shining from Pyongyang. That is all that can be seen at night. In other words, the whole country has virtually no electricity at night. This is solid proof of their need for electricity.

I will reiterate my first statement: The best use of nuclear energy is to produce electricity. The worst use of nuclear energy is to use it for an explosive device. Because of the proliferation concerns in North Korea, we have created KEDO and the Agreed Framework. We have to have mutual confidence building between the two Koreas, and the best way to do that is to bring some light to North Korea.

I am a little over my time, but I'll be happy to answer any comments or questions.

Participant: Did you receive a list or initial report from the North Koreans in 1991 of facilities and inventories? Did you receive a list in 1992? Did South Korea or another party compare the lists?

B-K Kim: After the JNCC initial declaration, we agreed to a list of items to be included in the initial report. We agreed up to a point that certain facilities and nuclear material should be included, but we never actually submitted or exchanged the report. We did not get that far. The JNCC meetings broke down before that.

Participant: Is the turbine generator considered a key component?

B-K Kim : No. The turbine generator is not a nuclear component. It is a conventional or civil part.

Participant: Then what is the interval between the completion of the main building structure and the beginning of the delivery of the key component?

B-K Kim : The main civil structure consists of the concrete buildings—the reactor building, the fuel building, the auxiliary building, and the turbine generator buildings. Those are the main four buildings onsite. Immediately after October 2001, when the construction permit is issued, KEDO starts major construction of this civil structure. It will take them around three or four years to complete all these buildings. The completion of the main buildings and the delivery time of the first key component will be around the same time, the end of 2004.

Participant: On that point I would like to raise some questions that could be critical. How do we know that North Korea agrees that a "significant portion" written in the Agreed Framework means the civil structures of the main building? How do we know that North Korea agrees that the key components in this sense means trigger list items? That is my first question.

B-K Kim: That part has already been agreed. In fact, right after the Agreed Framework was finalized, there was a famous signed letter, which has not been made public. The letter addresses this exact topic of what a "significant portion" means and what a "key component" is.

Participant: What letter is that?

Participant: It's a confidential signed minute between the United States and North Korea that expands upon the supply contract.

Participant: How do you know North Korea's interpretation of when it will come into full compliance with its safeguard agreement with the IAEA? This is critical. North Korea could interpret that phrase: "before delivery of key nuclear components, North Korea will come into full compliance with its safeguards obligations" as the time it begins to cooperate with the IAEA rather than the time when the IAEA's verification work has been completed. North Korea will probably try to interpret this with "start" rather than "complete." How can we be sure about that?

B-K Kim: North Korea intends to push the date as far back as they can push it, so that this 2004 delivery time is the beginning of the verification process. However, the IAEA, who will do the verification process, has laid out its schedule. The IAEA has a three-year time frame. They presented this package to North Korea in December 2000 in Pyongyang. They presented it to the North Koreans by stating that: "If you do not want the LWR construction schedule to be interrupted around 2004, you must finish this verification work by 2004." The North Koreans said they understood.

Participant: But this is not written in the Agreed Framework.

B-K Kim: No, it is not written in the Agreed Framework, but it is understood. The interpretation of this phrase was a big argument. The North Koreans are willing to accept this verification early, because they want to continue the LWR construction project without interruption.

Participant: My worry is that North Korea has been violating what has been agreed upon. I have another question.

Participant: May I first pose a follow up? In the United States, we are hearing that North Korea is not willing to begin verification early and won't until the major buildings are completed. The whole purpose of our book is that we want the process sped up, so anything that can make that happen would be beneficial.

Participant: Here is another thought: Imagine that the civil structure of the main building is finished this month, and then, next month, the delivery of key components begins. Now, what would happen if North Korea argued that its facilities were only open to inspection for just those three months in between?

Participant: No, they can't do that. That's not possible.

Participant: The people who were involved in drafting the Agreed Framework looked through these documents very carefully and systematically. Since the signing of the Agreed Framework in 1994, there have been many meetings between KEDO and North Korea. The supply agreement contains 13 additional protocols. Each one of them has been verified and ratified by the government in North Korea and also the KEDO Executive Board. Some of the issues and concerns that have been raised are related to those protocols. I can assure you, according to past experience, those issues have been beaten to death during many different meetings both inside and outside KEDO and North Korea. One thing I can tell you is that some of the worries that you have raised have already been reviewed and discussed and will not happen.

One can ask many different questions, such as, how do we know North Korea won't cheat, or how can we be sure that they will abide by their original intention and their agreement? If we started from those questions, I don't think we could have the Agreed Framework.

B-K Kim: Thank you. Any further comments or questions on my presentation?

Participant: What would happen if North Korea satisfied its verification requirements with mutual inspections now, but down the road the KEDO construction project suffered unforeseen delays?

B-K Kim: Let me be sure that I understand your question. Your concern is that, even if North Korea fully complied early with the IAEA or through a bilateral process, would KEDO or the international community just delay construction after having got what it wanted? Well, one issue I see is that the HFO is costing the United States approximately $40 million each year. Until the LWRs become fully operational, the United States has agreed to provide 500,000 tonnes of HFO to North Korea. Each year of delay means the United States will be responsible for paying this high price.

Participant: Another option for North Korea is to restart its "frozen" reactors.

B-K Kim: North Korea often threatens to do this at Yongbyon. North Korea has said that if the KEDO LWR project falls behind schedule, then it will reopen the 50 MWe graphite reactor at Yongbyon.

Participant: They were supposed to turn over the graphite, or let the Agency see the core, but they never did. The exact status of the reactor is unclear, but they could start it within two or three years.

Participant: We have made a final goal. North Korea must completely dismantle — not just freeze, but dismantle — all its nuclear activities that existed prior to 1994. Through KEDO, North Korea receives two LWRs, assistance in canning and removing the spent fuel from the 5 MWe reactor, and annual deliveries of HFO. In return, North Korea not only freezes but also turns over and dismantles its facilities. It reopens North-South dialogue and establishes diplomatic offices in Pyongyang and in Washington.

This can be done step-by-step. If North Korea violated any aspect of the Agreed Framework, then that has to be reported. The United States president has to report to the Congress. In North Korea, of course, they have to report to whoever the authority is.

If you look at how the Agreed Framework is written, then it is possible to reach our goal. Perhaps one side is paying too much money, but by violating the agreement, who is going to lose more? The obvious answer is North Korea. It would be very difficult for North Korea to pull out of the Agreed Framework. If North Korea violated the Agreed Framework, then the United States would pull out. The United States can pull out at any time, and leave empty holes at Kumho. In return, North Korea can do whatever it started doing prior to 1994, such as reopening the spent fuel cans, reprocessing the fuel, and restarting the 5 MWe reactor. But in practice, from a technical point of view, restarting the nuclear reactor is really risky. I don't think it is possible.

What would be the consequence? They could do this, but if you look from a technical point of view and then make an assessment, then it is a different story. In this sense, I am very optimistic.

Participant: Do you think that bluffing is going on?

Participant: No, you cannot bluff under the framework.

Participant: Isn't it possible that North Korea could lie about its amount of plutonium?

Participant: Bluffing happens in two ways. One, you bluff and the other side has to believe it. And as a consequence you have to offer inspections. But right now, after almost six years of the Agreed Framework, I do not think North Korea has enough to bluff.

Participant: Could you respond to my third question regarding the three-month interval and whether North Korea would try to take advantage of this?

B-K Kim: The period between the completion of a significant portion and the delivery of the key component is three months. The scenario of allowing the IAEA only three months to complete its task is physically impossible, because the IAEA has already laid down their verification plan, which says it will take three years, not three months.

Participant: I would agree. North Korea cannot interpret the agreement this way because in another clause, there is that phrase that says, "to the satisfaction of the IAEA." The original language was not satisfactory. Robert Gallucci and the North Koreans came up with some language. Ambassador John Rich, who was coordinating with the Agency, said, "this is no good." So they had to go back and renegotiate.

B-K Kim: We'll take a ten-minute break and come back for a wrap-up. We will try to wrap it up this way: David Albright and myself will summarize what has been said yesterday and today among the eight speakers. We will try to bring up the most salient points and the most common points that were raised by all of you. And then maybe each of us will start commenting on the future, we'll focus on the future course of action of what can be done and what is possible.