UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

OFFICE OF THE SECRETARY

***

MEETING WITH KOREAN PENINSULA ENERGY DEVELOPMENT ORGANIZATION (KEDO) AND STATE DEPARTMENT

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PUBLIC MEETING

Commission Conference Room
One White Flint
Rockville, Maryland
Tuesday, June 13, 2000

The Commission met in open session, pursuant to notice, at 1:05 p.m., the Honorable RICHARD A. MESERVE, Chairman of the Commission, presiding.

COMMISSIONERS PRESENT:

RICHARD A. MESERVE, Chairman of the Commission
NILS J. DIAZ, Member of the Commission
EDWARD McGAFFIGAN, JR., Member of the Commission
JEFFREY S. MERRIFIELD, Member of the Commission

STAFF AND PRESENTERS SEATED AT THE COMMISSION TABLE:

BRUCE TURNER, State Department
JEROME BOSKEN, State Department

P R O C E E D I N G S

[1:05 p.m.]

CHAIRMAN MESERVE: Good afternoon. On behalf of my colleagues here at the Nuclear Regulatory Commission, I would like to welcome the representatives of the Department of State and the Korean Peninsula Energy Development Organization to the Nuclear Regulatory Commission.

The context for this meeting, as people at the table well know, is that there is an agreed framework that was executed by the United States and the People's Republic of Korea that among the terms of that agreement, it included some undertakings that there would be the development of 2,000 megawatt electric reactors in North Korea in exchange for some activities that the North Koreans would undertake.

We have received a letter from Ambassador Cartwin requesting that the Nuclear Regulatory Commission provide some assistance and cooperation relating to KEDO's safety efforts and particularly relating to efforts to develop and maintain a strong and competent regulatory entity in North Korea that would be responsible for these plants once they are up and running.

Our briefing today is to discuss what is going on with regard to this activity and, in particular, with regard to the request that has been made of the NRC.

We are joined this morning or this afternoon from

the State Department by Bruce Turner, who is coordinator for the agreed framework division, Office of Korean Affairs, Bureau of East Asian and Pacific Affairs, and by Jerome Bosken, who is a Senior Technical Advisor in that same group.

We have several representatives of the Korean Peninsula Energy Development Organization, or KEDO, as I'm sure we'll probably all be referring to it, and the representatives include Desaix Anderson, and I apologize if I mispronounce some names; Tae Sik Lee, who is the Deputy Executive Director; Masaaki Ono; Yoichi Togo, and Jack Mulligan. Welcome.

Why don't we proceed, and we will hear first from the State Department.

MR. TURNER: Thank you, Mr. Chairman. While we're at introductions, I would also liken to introduce two additional people who came with us today from the State Department, both from the non-proliferation bureau, Kathryn Schultz and Warren Stern, who are sitting right behind me.

CHAIRMAN MESERVE: Let me interrupt for one thing. As you've noted, I would observe there are only four of the five Commissioners that are here. Commissioner Dicus did ask me to state that something had come up that caused her to have to miss the meeting. She asked me to apologize for her failure to be able to be with us this afternoon.

She has indicated to me that we will receive a -- all of us have the opportunity to get a transcript of this meeting and she will be reviewing the transcript. Excuse me.

MR. TURNER: Thank you, again, Mr. Chairman. It is a pleasure to be here today to discuss with you and the other Commissioners the KEDO project to construct two light water reactor power plants in North Korea, as called for under the 1994 agreed framework between the United States and the DPRK.

For the most part, I will leave it to KEDO's Executive Director, Mr. Desaix Anderson, to explain in detail the status of the work and the steps that KEDO is taking to assure the safety of this endeavor.

For my part, I would like to say a few words about the political issues that underlie the project and the importance we in the United States Government attach to nuclear safety.

I appreciate the opportunity to do so.

However, just as a brief caveat at the beginning, since this is a public session, I would ask your understanding for the fact that we might not be able to discuss fully some sensitive issues and matters currently under negotiation with North Korea. We would be pleased to accommodate your questions on these issues at a later time,

if you see such a need.

Today is a momentous day. Many eyes are turned toward North Korea, where there are already some surprising developments. Earlier today, South Korean President Kim dae Jong met in Pyongyang with the President of North Korea, Kim Jo Nil. This is an historic summit meeting, the first time that two presidents have met since the division of the country 55 years ago.

This can, of course, be only a first step toward a process of dialogue. The South Korean goal is to end confrontation on the peninsula and to begin the process of reconciliation and cooperation and lay the groundwork for eventual unification.

The United States strongly supports this effort and has great confidence in President Kim Il Jung.

It is important also to see the summit in the context of other events. It is not an isolated incident, but part of an apparent North Korean trend toward improving relations with its neighbors and others in the international community.

We note in that regard that the Government of Japan has also entered into discussions with the DPRK on establishing bilateral relations. No one could also fail to note that North Korean President Kim Jo Nil's recent visit to China, his first foreign travel in many years.

Earlier this year, North Korea established diplomatic relations with Italy, reestablished relations with Australia, and requested membership in the Austrian regional forum. And Russia recently announced that President Putin will visit Pyongyang in July.

So as you can see, there is great activity on many fronts.

The United States, for its part, has held numerous rounds of talks with the DPRK in recent months, addressing a range of issues, from the easing of economic sanctions on North Korea to North Korea's missile activities.

We used the latest round of discussions last month in Rome to launch a new negotiation on implementation of the agreed framework. The U.S. plan is to use these new negotiations to address the full range of our nuclear related concerns.

Also in Rome, we held a preparatory session and made further progress on arrangements for the next formal round of U.S.-DPRK missile talks, which we expect will take place soon. North Korea reiterated that its moratorium on flight testing of missiles would remain in effect while these discussions continue.

As many of you know, the Republic of Korea, Japan, and the United States coordinate very closely on policy toward North Korea. This process began with the recently

concluded review of U.S.-DPRK policy conducted by former Secretary of Defense William Perry, which Congress had requested.

We are currently implementing the review's principal recommendation for a step-by-step reciprocal approach aimed at eliminating North Korea's nuclear and long-range missile threats and at improving our bilateral relations.

The Perry process also reaffirmed the centrality of the agreed framework as a foundation of our North Korea policy.

In 1992, inconsistencies in information on DPRK

nuclear material production and new processing activities, including DPRK resistance to IAEA inspections to resolve these inconsistencies led to international concern about the direction of the North Korean nuclear program.

Following the March 1993 DPRK announcement that it would withdraw from the nuclear non-proliferation treaty, the United States entered into bilateral negotiations with North Korea that resulted in the signing of the agreed framework in October 1994.

Under the framework, the DPRK agreed to freeze and eventually dismantle its graphite moderated reactors and related facilities. These included an operational five megawatt reactor that had been refueled and a 50 megawatt

and a 200 megawatt reactor that were under construction.

The five megawatt reactor is thought to have been able to produce about seven kilograms of weapons grade plutonium annually. The larger reactors under construction would have been expected to yield another 200 kilograms of weapons grade plutonium annually, enough plutonium for tens of weapons per year.

The agreed framework also called for the canning of all spent fuel from the five megawatt reactor and its eventual removal from the DPRK. I am pleased to inform you that the canning, under IAEA's seal, of all accessible spent fuel rods was completed in April of this year.

The IAEA has confirmed since then to us that the remaining fuel rod fragments that are currently inaccessible do not represent a proliferation concern.

The U.S. spent fuel team will return to the DPRK in October to continue cleanup and to begin looking at long-term maintenance.

The freeze is holding. The agreed framework stopped an ongoing nuclear program and will eventually result in dismantling fissile material production facilities and removal of spent nuclear fuel from the country, not merely placing them under safeguards.

Until this point is reached, the IAEA will continue to monitor the freeze and the spent fuel, and I'm

happy to say, is receiving the full cooperation of the North Koreans.

The LWR project also is making progress. Granted, that progress has no always been rapid or smooth, but it is also important never to forget that this is a unique and uniquely complex project. The funding for the reactor construction is being provided by loans from the export banks of South Korea and Japan. The turnkey contract

between KEDO and the South Korean utility KEPCO became effective in February of this year.

Full-scale work, including contracts for long lead time components and training for DPRK personnel has now begun. We anticipate that the construction permit will be issued by the DPRK in late summer 2001, which will mark the beginning of excavation of the nuclear bloc.

As the project is implemented, KEDO and the United States are committed to ensuring that the plant is built and operated at the highest international safety standards. The plant will be based on a South Korean reference plant, which, in turn, was based on United States technology. The South Korean Institute for Nuclear Safety, which we refer to as KINS, will have the lead role in safety reviews and in working with the DPRK regulator.

The IAEA will conduct a design and safety review of the plant for KEDO and might be further involved in the

project.

We also see a role for national regulatory authorities, in particular for the Nuclear Regulatory Commission, that is complimentary to this effort. We believe it is especially important to expose North Korean regulatory personnel to the structure and standards of internationally acceptable nuclear regulation and to encourage the required safety culture.

Because U.S. technology and equipment will be used, but, even more importantly, because the NRC plays a global leadership role in nuclear safety and regulatory matters, we believe that the NRC can meet a critical need in helping KEDO to train DPRK personnel and in providing experts to the KINS and IAEA reviews and other activities.

The NRC, in our view, also has a role with respect to the provision of information and computer safety codes needed to license and assure the safe operation of the two light water reactors.

The plant will incorporate advanced design features and its safe operation will be of vital interest to all. We believe that information on its performance will be very valuable to the NRC and U.S. industry.

Mr. Chairman, thank you for this opportunity. With your indulgence, I would like now to turn the floor over to Mr. Anderson and KEDO, who I understand will speak

more about the type of cooperation that KEDO is seeking.

Once details of such cooperation are developed, the State Department would be pleased to work together with the NRC on the necessary arrangements for funding this sort of effort.

Thank you again for this opportunity to speak to you. I will be ready to answer questions that you might have either following Mr. Anderson's presentation or immediately, if that's your desire.

CHAIRMAN MESERVE: Why don't we proceed with Mr. Anderson's presentation.

MR. ANDERSON: Thank you very much, Mr. Chairman, and good afternoon, Commissioners. I'm Desaix Anderson, the Executive Director of KEDO, been there almost three years.

It's a unique organization that combines engineers, scientists, diplomats, lawyers, other professionals, in, again, a unique project, which is not only designed to strengthen the international non-proliferation, goals and regime in Northeast Asia, but also to improve the lasting prospects for peace.

This afternoon I would like to touch on how KEDO is organized, the current status of the project, and the unique system that we've developed to advance the nuclear safety of the project. I won't repeat what Mr. Turner has said about the background, but it was clear in the '80s that

the North Koreans were trying to develop nuclear weapons and in 1993 and 1994, they blocked the IAEA inspections, threatened to withdraw from the NPT and IAEA.

President Jimmy Carter visited North Korea and he and North Korean President Kim Il Sung agreed to what in effect became the negotiation for the agreed framework, signed later in October of that year, which froze the DPRK's nuclear program.

Six months later, Japan, the Republic or Korea and the United States expressed their common desire to cooperate in taking the steps necessary to implement the agreed framework and signed a charter establishing KEDO.

Three years later, the European Atomic Energy Community supported KEDO through substantial and sustained cooperation and became the fourth member of the board. Today, there are 13 country members in KEDO.

KEDO is charged with financing and constructing in the DPRK the two light water reactors, a technology of U.S. origin, and to provide the DPRK with an alternate source of energy in the form of 500 metric tons of heavy fuel oil annually, until the first reactor is completed.

Needless to say, the political environment in which we operate over the past five years has been tumultuous. It's difficult to discuss KEDO without first establishing all contexts in which we work. As Executive

Director of KEDO for the past three years and the former

State Department official with the responsibility over East Asia and the Pacific, there is no question but that the present moment is the most auspicious in the past 50 years. The source of my recent optimism is based on three actualities; first, Secretary Perry, on behalf of the President, has conveyed clearly to the leadership in Pyongyang in May of 1999 that there was an opportunity to choose between meaningful and peaceful engagement and support for the rehabilitation of North Korea's economy in the context of elimination of the nuclear missile and military threats, on the one hand, or isolation and possible confrontation, with all the economic and military implications that this posed to North Korea, and that was the message of the Perry report, the gist of it.

Second, I'm tentatively convinced that North Korea has come to realize that survival is determined on the gradual -- would be determined on the basis of gradual change through economic cooperation with neighboring countries and Mr. Turner has mentioned a number of recent activities, diplomatic activities on the part of North Korea. There are others, as well. They are trying to join the Austrian regional forum. They've talked to a number of other countries, Britain, France, Kuwait, others among the European Union.

They have strengthened their overtures to Russia. Kim Jong Il has just visited China and, of course, the U.S.-DPRK talks. But the third most important feature is the stunning event which we all saw on television this morning of President Kim dae Jong and General Secretary Kim Jung Il walking, smiling and chatting, as President Kim visited Pyongyang.

Now, KEDO is not involved directly in any of these discussions, but I like to think that our organization has helped create the overall positive atmosphere surrounding relations between the DPRK and the outside world. In turn, improved relations on the Korean peninsula and beyond creates a better working environment with the DPRK and will certainly aid in achieving our objectives, and we have already noticed change.

With this backdrop, I would like to provide a brief description of KEDO's organization. We have approximately 40 people in New York, with a consul office at the future power site in DPRK, which is comprised of nationals from Japan, Republic of Korea, the U.S. and the European Atomic Energy community.

An American has traditionally served as the organization's executive director. I am ably assisted by two Deputy Executive Directors, Mr. Ono and Mr. Lee, who

flank me, who oversee seven divisions in KEDO. The two

pertinent divisions for this conversation are the nuclear safety and quality assurance division, which is headed by Mr. Yoichi Togo, and the project operations division, headed by Jack Mulligan, who are with us here today.

To obtain the technical support and supervising overall implementation of the light water reactor project and in providing regulatory compliance, expertise, KEDO hired the U.S. architecture engineering firm Duke Engineering and Services as our technical support consultant.

The executive board members, with whom we work very closely, are the European Union, Japan, South Korea and the United States.

In December of 1995, KEDO concluded the supply agreement with the DPRK. This serves as the governing document between KEDO and the DPRK for the light water reactor project. The most pertinent to today's meeting, the supply agreement stipulates the division of responsibility between KEDO and the DPRK, including nuclear safety related areas of the light water reactor project.

In particular, it was agreed that KEDO would provide the DPRK with two pressurized light water reactor units, with two coolant loops and a generating capacity of approximately 1,000 megawatts of electricity, each from a turnkey basis.

The reactor model selected by KEDO will be the advanced version of U.S. origin, design and technology currently in production on the Korean standard nuclear power plant.

Most important to our discussions is the supply agreement stipulation that designates KEDO as the party responsible for assuring the design, manufacture, construction, testing and commissioning of the light water reactor plants are in compliance with nuclear safety and regulatory codes and standards, those ordered by the U.S. NRC and IAEA.

The DPRK regulatory authority, on the other hand, has responsibility for issuing the construction, commissioning and operating permits to KEDO and KEDO should provide the DPRK with all the results of its review for examination of the DPRK before the issuance of the permits.

After completion of the light water reactor plants, KEDO and the DPRK will conduct safety reviews to ensure the safe operation and maintenance of the light water reactor plants. But the DPRK owner/operator will be

responsible for the safe operation and maintenance of the light water reactor plants, for appropriate physical protection, for environmental protection, safe storage and disposal of radioactive waste, including fuel spent once KEDO turns the plant over to them.

Where we have come since the conclusion of the supply agreement in 1995, we have codified the requirements and responsibilities stipulated in the supply agreement in a number of areas and we have completed six protocols to accomplish this.

These include KEDO's status in the DPRK, transportation, communications, takeover of the site, DPRK provision of labor and services, penalties for non-payment of financial obligations by the DPRK and KEDO, and we have recently concluded the negotiations on the protocol covering training for DPRK management, operators and maintenance personnel.

We will next shortly begin to try to conclude the negotiation of a protocol on quality assurance and warranties of the LWR plant.

Implementation of the agreed framework has been extremely challenging, an intense process. Everything we do must be laid out explicitly in these detailed protocols to ensure proper procedures are followed and commitments met.

In parallel to our discussions with the DPRK, we're working diligently on activities to fulfill our obligation to build the two light water reactors. In March 1996, four months after concluding the supply agreement with the DPRK, KEDO officially designated the Korea Electric Power Corporation, KEPCO, as the prime contractor for the

light water reactor project.

KEPCO is a partially privatized ROK government-owned utility that is the sole supplier and distributor of electricity in the ROK. Presently KEPCO operates 15 nuclear power plants, 11 pressurized water reactors, and four pressurized heavy water reactors.

The reference plant of the LWR project are Ochen Units 3 and 4, operating in the ROK, which are based on the Korean standard nuclear power plant model. In August of '97, we signed the preliminary works contract with KEPCO to initiate site activities for grading infrastructure development prior to implementation of the turnkey contract.

Breaking ground the same month, we have undertaken considerable site preparation at a cost of $94 million.

Site grading work is leveling the mountain where the two reactors will be constructed and back-filling surrounding areas where the construction facility will be

located. Seventy percent of the total volume of 4.4 million cubic meters needed to be removed has been removed, to get the final -- reach the final grade level of ten meters above sea level.

We have installed an independent supply of reliable electricity, a potable water plant, for the needs of construction personnel and to meet the construction requirements.

Construction of facilities for warehousing materials, offices, heavy equipment repair, electrical generators, water supply and treatment and concrete batching have also been erected.

At the construction site in Kumo, which is on the eastern coast of the DPRK, we have also built a small village from nothing, housing medical facilities, roads, water and electricity services, three houses of religious worship. The village also has a restaurant where South and North Korean workers serve the same food from the same kitchen.

December 15, '99, KEDO concluded the $4.6 billion turnkey contract with KEPCO for supply of the two light water reactor plants. Soon after that, KEDO finalized loan agreements with the Japan Bank for international corporation, JBIC, and the Korean Export/Import Bank to finance the project, and South Korea will provide 70 percent of the financing and Japan will provide $116.5 billion yen.

The DPRK will repay KEDO for each light water reactor plant, free of interest, over a 20-year term after completion of each light water reactor plant.

Work has begun on the preparation of the preliminary safety analysis report and environmental report this past February and the PSAR will be prepared, based on the format and the contents of Regulatory Guide 1.7, Revision 3, and the

environmental report on Regulatory Guide 4.2. It is anticipated that KEDO will provide the PSAR and the environmental report to the DPRK regulatory authority sometime early next year for their review.

Within the DPRK, the nuclear energy matters are the responsibility of the General Department of Atomic Energy. The DPRK also relies on an ad hoc committee of the Atomic Energy Commission for advice on nuclear energy issues.

Regulatory responsibilities are carried out by the State Nuclear Safety Regulatory Commission, or the SNSRC. The chairman, vice chairman, three department directors oversee management of SNSRC, which is comprised of three

divisions, departments of nuclear safety inspection, radiation control, and standards establishment.

The department of nuclear safety inspection is responsible for licensing the nuclear facilities, while the department of standards establishment develops regulations, bylaws and technical standards on nuclear safety.

The hierarchy of laws, regulations and standards are as follows. Acts, including the Atomic Energy Act, are adopted by the standing committee of the Supreme People's Assembly. Regulations are adopted by the cabinet, guides and technical standards by the State Nuclear Safety Regulatory Commission.

Our understanding is that the SNSRC reports to the cabinet and is not part of the General Department of Atomic Energy, which we believe will operate the plant.

And while the SNSRC has informed us about their structure, our knowledge about the capabilities and experience of North Korean regulatory bodies remains limited. We know for certain, however, that the SNSRC has no practical experience in the design, construction, operation or regulation of pressurized light water reactors of the type KEDO is supplying.

At the same time, they are making every effort to strengthen their regulatory infrastructure, and this has been made abundantly clear in the most recent meetings that we have had with them, the nuclear safety experts meeting.

For these reasons, KEDO is taking a conservative approach toward nuclear safety to assure well designed, well constructed and safe plants, that meet all the necessary internationally accepted standards.

KEDO itself cannot regulate or license the plant. Ultimately, it is the DPRK which is the regulatory body and issues the construction, commissioning and operating permits.

To address the concerns raised over the credibility and independence of the DPRK nuclear regulatory body, expressed internally from KEDO member countries and

internationally, KEDO established a unique system to monitor the safety of the light water reactor project and we called the system the nuclear safety confirmation system.

Before I explain the details of the system, let me first outline KEDO's nuclear safety policy, which serves as the foundation from which all the light water reactor related activities are built.

In short, the fundamental precepts of our nuclear safety policy state that KEDO will conduct all light water reactor project activities in such a manner that nuclear

safety is accorded the highest priority. We will adopt fundamental nuclear safety principles and licensing practices and utilize internationally formulated guidelines and recognize the importance of openness and transparency in the conduct of nuclear safety endeavors and that the prime responsibility for the safety of a nuclear installation rests with the holder of the operating license.

In recognition of the challenges posed by this policy, KEDO established the Nuclear Safety and Quality Assurance Division to oversee nuclear safety aspects of the project and they act independently of the entity's responsibility within KEDO for the design, construction and commissioning of the light water reactor plants.

The safety division has established a nuclear safety confirmation system to ensure these goals are met.

Under the nuclear safety confirmation system, KEDO sets its nuclear safety policies and practice, undertakes safety reviews and manages associated issues, and oversees all safety-related activities.

The end result of these activities is the ability to confirm that the light water reactor plants achieve an internationally acceptable standard of nuclear safety.

In the interest of openness and transparency, the safety confirmation system relies on technical support from many outside experts and organizations. At present, KEDO has established a three-pronged approach with the nuclear safety confirmation system.

Because of uncertainty in North Korea's nuclear regulator, KEDO has decided to undertake its own safety review of the light water reactor plants. To carry out this significant undertaking, KEDO concluded a cooperation agreement with the Korea Institute for Nuclear Safety, or KINS, of the ROK. KEDO considers itself fortunate to have the expertise of KINS, which is responsible for conducting safety reviews of the ROK plants for the Ministry of Science and Technology and, therefore, is intimately knowledgeable of the Korean standard nuclear power plant.

KINS has already started its preliminary review of the light water reactor plant documentation, including the site survey report and the plant description. Discussions

are being finalized concerning the final scope of KINS' review, which is expected to start formally early next year, when the PSAR and ER are issued, and should be completed in mid 2001.

We are also making plans to supplement KINS' reviewers with experts from KEDO member countries who would

participate with KINS in its review of the licensing documents.

KINS will document its safety review and safety evaluation reports, just as is the practice here in the U.S. KEDO will provide the SNSRC with the safety evaluation reports for their information.

Another important entity sin the nuclear safety confirmation system serves as a final check on all of our nuclear safety related activities. This is the nuclear safety advisory group, the NSAG, which is composed of very distinguished senior level nuclear experts from member countries of KEDO.

The NSAG advises me on all nuclear safety related matters. NSAG was established to provide the executive director of KEDO with an independent assessment of the adequacy and implementation of KEDO's safety confirmation policies and practice.

The NSAG is currently comprised of experts from nine countries, including the United States. With nearly

300 years of combined experience in diverse nuclear related fields, including the current and past chair of the IAEA's international nuclear safety advisory group, we have and will continue to rely on this group to provide guidance and advice on all nuclear safety aspects of the light water reactor project.

The primary tasks of the NSAG are to perform oversight of the safety reviews carried out by KINS and to make recommendations to the KEDO executive director on nuclear safety.

In addition, the NSAG also has taken a strong interest in the capabilities of both the DPRK operator and regulator, an interest that we warmly welcome. In fact, the group invited the State Nuclear Safety Regulatory Commission of the DPRK to its most recent meeting held last week in KEDO's headquarters in New York, to cultivate the safety culture of the DPRK and to have transparency in the safety review process and the nuclear safety confirmation system.

NSAG hopes to get a firsthand sense of level of competence and readiness of the DPRK regulatory authority to perform its regulatory role with the light water reactor. Unfortunately, DPRK was unable to attend because of the timing, but we intend to press for DPRK participation in the future meetings and the DPRK appeared to be quite eager to do so.

To support the further objective of ensuring the safety of the light water reactor project in a transparent and internationally recognized way, KEDO has requested the

design safety review services of the International Atomic Energy Agency. We met with the IAEA earlier this year to discuss their support and we expect they will provide these services and visits KINS' office in mid-2001 to conduct their two-week safety review.

Considering the breadth of knowledge and expertise at the IAEA, KEDO is also interested in seeking support to help strengthen the DRPK regulatory body. Because the DPRK is not a member of the IAEA at this point, the agency is unable to provide direct support currently to North Korea.

The IAEA did, however, express interest in the idea and said they could make available other technical services to KEDO, if requested.

According to the supply agreement, the DPRK will come to full compliance with its IAEA safeguards agreement before delivery of the key nuclear components. IAEA involvement will be far easier at that time, including in the area of nuclear safety.

KEDO faces other significant challenges, however, that affect nuclear safety. In particular, then safe operation, maintenance and regulation of the plants after plant takeover. Aside from any requirement in the supply

agreement, KEDO understands and recognizes its obligations to support the development of a strong independent DPRK regulatory body. Therefore, KEDO is working and will continue to work with both the DPRK regulator and operator to ensure that these organizations are prepared to assume the responsibility to operate safely and regulate the light water reactor plant.

Based on the cooperation agreement between KEDO and KINS, KINS has also been instrumental in formulating an orientation or training program for the DPRK nuclear regulatory staff, which provides information on establishments and management of a regulatory organization, and in-depth training on the light water reactor plant, safety reviews and inspections.

We have just recently presented this program to the DPRK for their consideration and we're waiting on their feedback. It is also worth noting that the DPRK has expressed a strong desire to visit regulatory bodies of other countries, including the United States, for training and to undertake other cooperative activities.

We are working to arrange appropriate visits to the KEDO member regulatory bodies.

Our working plan, which encompasses the orientation and the visits of DPRK personnel, is the one I just mentioned. KEDO has suggested to the DPRK that we work

together to develop a mutually agreed working plan and the DPRK fully agreed.

The purpose of the working plan is to define a collaboration scheme between KEDO and the DRPK regulatory body. The working plan outlines activities in which KEDO and the DRPK need to be involved and how the two organizations work together to accomplish these activities. The working plan also includes interaction between the DPRK and the nuclear safety confirmation system.

KEDO has implemented a unique, but a comprehensive approach to ensure the safety of the light water reactor plants, in addition to supporting the establishment of a strong independent nuclear regulatory authority in the DPRK. However, as I have noted, this is an extremely challenging undertaking and one which requires varied knowledge and experiences.

For this reason, KEDO is continually seeking ways in which we will be able to demonstrate to the international nuclear community that we have succeeded. Often this involves enlisting the support of individuals or organizations from member countries.

It is our sincere hope that such a relationship can be established between KEDO and the U.S. NRC.

Lastly, I would like to suggest the cooperation that we have in mind with the U.S. NRC, if, of course, you

are willing. First, the DPRK suggests a strong desire to visit the regulatory bodies of other countries. KEDO also understands it is worthwhile for them to visit nuclear developed countries from the viewpoints that we have to cultivate the safety culture in the DPRK and accept them as a reliable member country to operate the nuclear power plants in the future.

The U.S. NRC has experience in regulation itself and transfers its experience and knowledge to Japan and the Republic of Korea, which are, of course, core members of the light water reactor project. It would be a significant contribution to the light water reactor project if the U.S. NRC hosted the personnel visits or the DPRK regulatory body to transfer regulatory information and to help build the safety culture.

Second, during the audit calculations of the nuclear safety body by the regulatory body, several computer codes are used in every country. Most of these codes originate in the NRC. KINS also uses them, which they have obtained through bilateral cooperation. KEDO will make the necessary arrangements, but only the U.S. NRC, as the owner of the codes, can provide them to the DPRK and we hope for

the cooperation of NRC on this issue.

Third, during KINS' review and the nuclear safety confirmation system, KEDO wants to invite experts from

member countries to observe that review, to increase the transparency and prove that it can hold to a set of codes and standards equivalent to those of the IAEA and the U.S. and apply it to the reference plant as stipulated in the supply agreement.

Participation of experts from the U.S. NRC can increase the quality and credibility of the review.

Thank you very much for your attention. I'd be happy to answer any questions.

CHAIRMAN MESERVE: Thank you very much. I'd like to thank you both for very helpful presentations and description of the project.

Let me start off with a few questions. You have indicated, Mr. Anderson, that there are three areas in which you would think it would be particularly helpful for the NRC to lend assistance.

First was that we host visits of DPRK individuals who are from their safety agency, the SNSRC. Could you give us a little more information about what you envision? Are these that we would host a delegation for a brief meeting or is this the notion that there might be some extended involvement with us? What exactly do you envision within the visits element?

MR. ANDERSON: I think it would be extremely desirable if you were able to invite a few people, key

people to come for a fairly long period of time, say nine months, six to nine months, so they could really begin to absorb the culture, safety culture. So that's what I think would be ideal, something along those lines.

CHAIRMAN MESERVE: And you say a few people.

MR. ANDERSON: A few people.

CHAIRMAN MESERVE: Do you know whether the -- I suppose it may be premature to know whether, in fact, there are indications from the DPRK that they would be willing to allow people to be with us for that extended period.

MR. ANDERSON: I think so, and it's probably premature to say that, but our experience has been that they very much -- they are very interested in and press for nuclear regulatory training outside the DPRK and they regard this as a very serious matter. They've spoken favorably and very informally when we talked with them about the NRC, and they certainly are committed to training outside the DPRK.

So my guess is it may take a little while to work

out agreements, but, yes, that they would be willing to participate.

CHAIRMAN MESERVE: And the second area that you indicated was that access to computer codes, information of that kind. Do you have an indication from DPRK of what codes in particular they're interested in?

MR. ANDERSON: We, of course, have given them this

book and various other regulatory matters, but they are quite interested in that, and let me ask, Jack, have they been specific about what they want?

MR. MULLIGAN: I believe they have provided a list based on their review of the PSAR and other documents. They have generated a list of the codes that they would like to get.

CHAIRMAN MESERVE: Is there any reason we couldn't give the list to the NRC?

MR. TOGO: They have indicated some lists of computer codes and many of them originate in the NRC, and these codes are important, where they are necessary to make audit calculation.

CHAIRMAN MESERVE: Do you have any indication of the computer capabilities that SNSRC has available to it?

MR. TOGO: They have some capability, but we don't know what they have. Once it is determined to provide the computer codes to SNSRC, we will consult them in detail how to provide them.

CHAIRMAN MESERVE: Some of them are designed to run on certain platforms that they need to have available to them.

MR. ANDERSON: If I may, Mr. Chairman. In this whole area, the DPRK personnel have been particularly forthcoming. We have the easiest, most cordial discussions

in the whole nuclear safety area and concerning regulatory, as well as other aspects.

CHAIRMAN MESERVE: And the third area which you indicated you'd like to have our involvement was participation in some role in observing the review. That could be pretty open-ended, from our perspective, in that, as I'm sure you are aware, that evaluation of a nuclear power plant, full evaluation of it is a very extensive activity that involves a substantial portion of our staff.

Do you have any sense of the degree of involvement that you are requesting?

MR. ANDERSON: I think at this point we're not talking about the full process. We'd like you to be a supplementary part of what we will be doing generally. KINS will be conducting the final review and I think it's at that

stage that it would be very useful to have participation of organizations such as NRC.

So we're not talking about a continuous involvement, but the crucial end final exam.

CHAIRMAN MESERVE: I have a question for you, Mr. Turner. In order for the NRC to be engaged, that there are a series of legal hurdles that we have to basically overcome. We have our own export regulations that would affect our capacity to interact with the North Koreans. I'm sure we do not have, I know we do not have an agreement of

cooperation under Section 123 of the Atomic Energy Act with them.

Finding our way to deal with those seem to be an essential ingredients for having a capacity to consider this. Could you give me any sense as to where the U.S. Government is headed in resolving these issues?

MR. TURNER: Well, I think it's fair to say that we have not resolved them at this point in time. We are struggling to focus on some of these issues, in particular, the nuclear cooperation agreement. We're looking at when we might start such negotiations, but that's about all I can say right now.

On the licensing side, our understanding is that at the present, that the Department of Energy, which I think has the authority in this area, has granted initial authorization for export of control technology needed for licensing and safe operation, but which would not enable design or manufacture of reactor components or fuel.

CHAIRMAN MESERVE: You also have a role in that, too. I'm just curious as to whether that whole process has been started, and you say the Department of Energy has started that process.

MR. TURNER: Yes.

CHAIRMAN MESERVE: I know that my colleagues have many questions about this, so let me turn first to

Commissioner Merrifield.

COMMISSIONER MERRIFIELD: Thank you, Mr. Chairman. Mr. Anderson, do we have any sense or can you characterize the current capabilities of SNSRC in terms of, for example, number of personnel that they have, the technical capabilities that they have?

The reason I ask this is because for training and some things where we may be helpful, for us to be helpful, it's useful to know what impact our involvement would have on the program and knowing what they have, I think, would be useful to start us off.

MR. ANDERSON: Let me ask my colleagues to help me on this, but we have very limited knowledge. We've gotten only bare bones. But each time we're talking with them, we are getting more. We have serious doubts that they have been able -- I mean, we know that they don't have any experience in this particular regulating of light water reactors, so they need to learn a great deal, but also have the impression that their education level is advanced in level and that they come from a research institute, so they've got a background which is not as pertinent and that's another reason for this training.

But let me ask my colleagues to comment.

MR. TOGO: We have limited knowledge about the DRPK, but we have the regular meetings between the DPRK

regulatory bodies, the nuclear safety expert meeting. So we've already had five meetings and after that, it's good experience for the nuclear safety regulations.

And also we have the explanatory meeting about the regulatory system of the ROK to DPRK. At the meeting, there was the --

COMMISSIONER MERRIFIELD: Excuse me. Mr. Chairman, we have somebody in this audience who has a cell phone.

CHAIRMAN MESERVE: I would request that whoever has a cell phone, please turn it off.

COMMISSIONER MERRIFIELD: I'm sorry to interrupt.

MR. TOGO: During that meeting, the SNSRC made very good detailed questions to the KINS. So that was very educating. It was really a credit to the regulatory system, day by day or year by year.

COMMISSIONER MERRIFIELD: I guess if you could clarify for me what you foresee as the interaction between KINS, the NRC and IAEA in terms of trying to bring the SNSRC up to the level of regulatory ability that we would expect for an independent regulator of the nuclear program and at what point would they be able to step in and actually oversee the regulation of the building of these facilities?

MR. ANDERSON: Let me answer it and, again, ask Mr. Togo to add to what I say. KINS, of course, is drawing

up the training program, the work plan, and that' been approved by our board, so we'll be pursuing that. They will be very much involved in it.

But in addition to that, we hope that not just the NRC, but also the European and the Japanese have shown interest, so we'd like for them to get the broadest experience and training, from the visits that I mentioned, from as many of them as possible, so that the experience can

be building all the time.

But the actual program would be this work plan that KINS has come up with, so that would be the core curriculum. And they are going -- they will -- the final two years before we actually turn over the plant, they will be involved in the work, they will be integrated into the workforce.

COMMISSIONER MERRIFIELD: So you wouldn't expect them to be integrated until two years before.

MR. ANDERSON: That's into the work itself, but, yes, the PSAR which we are developing now would be given to them, the preliminary review by KINS will be undertaken three months before the PSAR is completed and that's to be completed by next February, and then there's a six month period in which we are studying it, but, at the same time, KINS will make a final review of that and then we will and NSAG will look at it.

And at that period, too, they will be able to -- they will be studying the PSAR. So there's nine months they've got to be learning and absorbing what's in that and commenting on it.

So really the process is going to start before, within a few months in terms of engaging them directly in some of the safety related activity.

Then in addition to that, we would hope that they will participate also in the quality assurance program that we have, so that will give them exposure to other aspects of these problems.

So the involvement is going to start -- it's already started through the dialogue, but it will accelerate and they will be heavily engaged and then finally integrated in the process itself.

MR. TOGO: The important thing is the DRPK regulatory board has to issue the construction permit and the operating permit. So concerning the time, we are making efforts to bring up their knowledge. So we make the first scope orientation based on the ROK practice the same way the ROK makes education to the newcomers in this area.

In addition to that, it depends on the details that DPRK gives. If they are given the chance to visit the other countries, in addition to the ROK, they will be very pleased at the level of competence, to be experienced in the

nuclear regulatory fields.

Thank you very much.

COMMISSIONER MERRIFIELD: That argues for earlier rather than later, if possible.

@@ COMMISSIONER MERRIFIELD: Let me ask a question. I had the pleasure, I should say, of traveling to the Republic of Korea this past spring and had an opportunity to witness what I think is a very vibrant nuclear program and we have an excellent counterpart in KINS.

That having been said, we, as an agency, frequently, in the international arena, talk to the importance of what we believe of having an independent, credible regulator in the country hosting the nuclear power plant being able to regulate that power plant.

Given the fact that the agreement, in Article 9, Section 3, basically says that the DPRK shall be responsible --

CHAIRMAN MESERVE: Could I ask whoever has the cell phone to please turn it off? Excuse me.

COMMISSIONER MERRIFIELD: Thank you, Mr. Chairman. The DPRK shall bring no claims against KEDO, its contractors and subcontractors and respective personnel arising out of any nuclear damage or loss. Given that in the agreement, it would seem to me that there is a very important role for having the SNSRC brought up to the highest capability as

quickly as possible so that from the point at which that plant begins construction, that they have the ability to oversee that.

Certainly that's something that has been a concern to me.

I want to turn to a separate issue.

MR. ANDERSON: Excuse me. I'd just say I absolutely agree with you, there's no question about that.

COMMISSIONER MERRIFIELD: I want to turn to a separate issue, the annex two. Annex two, number three requires DPRK to provide a stable supply of electricity for commissioning of the two LWR plants.

Given the nature of the current electrical generating capacity in the DPRK, which is not very high, and the lack of a state-of-the-art grid, in the most positive sense, how is it that the DPRK will be able to meet those requirements for providing the necessary off-site power at those plants in the event of an emergency?

MR. ANDERSON: Well, you are right to look at that and they have that responsibility, they're aware of it. They have raised it with me several times and asking us to do it. As you know, we've said we will support their efforts, but we are not going to build a grid.

In the supply agreement, they are committed to doing so and to providing two sources of exit and input and

they also have to have a safety-related diesel generator at

the plant for emergencies and then there will be another generator there which it's not safety-related, but it would be another alternative.

So they've got to do this and they're aware that they have to and we can't turn the plant over to them until that is done. So it's a big challenge and I think, as I have told them, it makes no sense unless they integrate themselves into the regional and global and international community and get the support of the outside world, that they're not going to be able to refurbish their grid or their infrastructure generally.

So that's very much a -- this project doesn't make sense except in that context. But they are well aware of it and I think they're looking at the commercial loans to help upgrade it or they've talked about the ADB and I know there is some interest in the World Bank.

But it's their responsibility and we won't proceed until they have satisfied it.

COMMISSIONER MERRIFIELD: Okay. One question for Mr. Turner. The House of Representatives, on May 15 of this year, passed H.R. 4251 to enhance the Congressional oversight of nuclear transfers to North Korea.

Although this has only passed the House and it has not passed the Senate, it is quoted by one of its sponsors,

MR. Gilman, it would require Congressional review and approval of any nuclear cooperation with North Korea.

I've not asked our own staff to review the impact it would have on possible cooperation between the NRC and through KEDO, the SNSRC, but do you have any sense of, if that were to be adopted by the Senate and were to make its way into law, how that would impact the kind of interrelationships which we're talking about today?

MR. TURNER: No. I couldn't say that I know today how that would affect those relationships. I think at this point, we would -- the Administration does not view this kind of legislation as something that we are in favor of.

COMMISSIONER MERRIFIELD: Okay.

MR. TURNER: It has a negative impact.

COMMISSIONER MERRIFIELD: I understand that. If you could -- I would appreciate it, given the fact that it was an overwhelming majority in the House, if you can get back to us in terms of the State Department's understanding of how that might affect some of the proposals that have been put forth today and the involvement of the NRC. I'd appreciate that.

Understanding that you don't like the legislation, we'd still like to know what impacts it would have. Mr.

Chairman.

MR. ANDERSON: Mr. Chairman, could I tag on to

that question, one you asked earlier. We have the agreement, within the supply agreement, that they will not use -- they will use this material for peaceful purposes, non-explosive and so forth. So that is our base starting point.

But in addition to that, in terms of any technology and it would probably mainly be from the United States and ROK, that we will fulfill or require to be fulfilled any legal requirements before we would facilitate the delivery of any of that equipment.

So this is pertinent to that, as well.

COMMISSIONER MERRIFIELD: Commissioner McGaffigan.

COMMISSIONER McGAFFIGAN: Let me follow up on the grid question that Commissioner Merrifield asked.

How does the agreement read? I mean, you could get these two reactors built, theoretically, and there is no grid to receive the power or to provide off-site power and, therefore, the benefits of the agreement don't come into effect, because the plants aren't operating. Is that right? It benefits the agreement from the non-proliferation perspective.

MR. ANDERSON: Hopefully that's not right.

COMMISSIONER McGAFFIGAN: I just want to understand.

MR. ANDERSON: In the supply agreement, we're

going to have a number of milestones -- I'm sorry, not the supply agreement -- the performance, delivery schedule and performance agreement, and we're going to build in a number of milestones and that will include aspects of getting the grid up to par.

But they are keenly aware of the need for this and they are -- I think that it's, in part, related to why they are expanding their circle of people with whom they're dealing around the world, that they know they've got to do it.

So theoretically, the answer is yes, but I think as a practical matter, that they will put something in place by the time that we're ready for it.

And we've got 5,000 megawatts right now and we're going to add an additional two, but the 5,000 is seriously deteriorated. The floods hurt the hydroelectric power and the thermal is running much slower than it should. So there's a lot of room for improvement of the performance of what they've got already.

COMMISSIONER McGAFFIGAN: You're up in the far

northeast corner of the country, way away from --

MR. ANDERSON: No. We are in a remote spot, but it's actually further south. It's up near the second largest city, Hamheung, it's not so far.

COMMISSIONER McGAFFIGAN: But it's a fair ways,

isn't it, from --

MR. ANDERSON: Well, what they're thinking of is a trunk line to Pyongyang, is what they want.

COMMISSIONER McGAFFIGAN: Okay.

MR. ANDERSON: Plus one to Pukchang, which is a regional delivery point substation and I think that's probably related to Hamheung, which is the second largest city, close by. So the distance is not enormous, basically across the girth of North Korea.

COMMISSIONER McGAFFIGAN: You also talked about the -- what is this construction permit authorization that they're going to have to do next year? In this country, if we were going to authorize a construction permit or actually in the future, we're going to do the combined construction and operating license, that's a pretty big deal and we'd have large numbers of staff pouring over documents.

I assume KINS is, as a quasi-regulator, going to deal with some of the documents, but how do they issue a construction permit next year? If I'm the North Korean regulator and you've described the North Korean regulator as not having much experience in this area, how do they pull that off?

MR. ANDERSON: That's why we've got to help try to bring them up to speed, but as I mentioned, the three months prior to the PSAR, which will be this February is our date

on that when that should be ready, three months prior to that, KINS will be reviewing the pre-PSAR examination and the DPRK will be brought into the process at that point.

So they would have access to all the information that KINS is looking at at that point and then for six months after that, they will have the PSAR itself and they, of course, will be doing their own examination, while KINS is doing its review and while we're doing the review.

So they will have to be brought into that process and eventually we have to bring them up to speed in nine months so that they can ultimately provide the construction permit, and I think that's possible.

One thing we've found is that international standards go a long way with them and it may sound ironic, but when we finally convinced them of a point in the negotiation, if we can show them some written material, like

in this book, it's very helpful.

So there is a predilection to accepting the international standards on their part and as I said, they've got the educational background in nuclear issues. It's just that they don't have the -- it's our system that they don't know, and so there's a lot of educating that needs to be done, but we --

COMMISSIONER McGAFFIGAN: Why was this education -- if this is predictable and indeed this project is running

behind schedule compared to where you hoped to be, I think, in '95 or that sort of timeframe, why was this effort to educate the North Korean regulator not recognized sooner as a key milestone?

MR. ANDERSON: Well, it has been recognized, but we are finding it is just painfully slow to move forward on these issues and we spent a great deal of time the last two years concluding the turnkey contract and negotiating the financing and we've been working on this protocols and now we have had the draft on the training protocol and we've got this work plan on the regulatory.

So it's just taken time to develop --

COMMISSIONER McGAFFIGAN: Work plan on the regulator, how many people do you envision -- as I understand, the KINS, from your viewgraph, has the main job in educating North Korean regulator, providing information to them and as I understand, from reading, there is some dispute as to whether that training is going to be done in North Korea or South Korea.

But how many, in terms of numbers of people, do you envision?

MR. ANDERSON: On the regulatory side?

COMMISSIONER McGAFFIGAN: Yes.

MR. ANDERSON: How many people are we talking about?

MR. TOGO: Before telling the number of the people, first, we understand that the North Korean regulatory body is not very experienced in the regulation. So we have the nuclear safety confirmation system, including KINS and IAEA, who do some of the regulatory process. It means that KINS may review and give the results to the DPRK.

In addition to that, we are inviting the DPRK regulatory bodies to KINS during the review process. We are now considering that we invite 20 to 40 persons, but it depends.

COMMISSIONER McGAFFIGAN: So 20 to 40.

MR. TOGO: Twenty to 40 persons, but it depends on consultations between the DPRK.

COMMISSIONER McGAFFIGAN: I'll ask a question that

you guys may find -- I've got to ask it, because it's in Nucleonics Week, to some degree, but there's, according to the press, there has been some reluctance, for fear that people will be not safe in South Korea, in terms of sending North Korean regulators to the south.

As I understand it, again, from press reports, there is some thought that this education might be done in North Korea rather than South Korea to deal with these North Korean sensitivities about either defection or kidnapping, depending the perspective.

But what -- where would the training -- it sounded like a moment ago you're planning that this training would

take place at KINS, which is the most rational thing, but you're also saying earlier that this is a painfully slow process and I'm just trying to understand whether you have backup plans for educating these folks in the north.

MR. ANDERSON: On the question of safety, there have been a number of North Koreans who have been in the south and they have not had any problem. The government is taking good care of them and I'm sure that that would be the case.

So I think this is a matter that can be dealt with. Some of the training will be at the site, but it will be elsewhere as well, and as I say, we hope that part of it can be here. But I'm confident we'll be able to conduct the training where it needs to be done.

COMMISSIONER McGAFFIGAN: I'm just perplexed as to -- if I'm a North Korean regulator and the best of this happens, and 24 to 40 people go there, am I still in a position to grant a construction permit sometime next year and be at the standard of European or North American regulators?

MR. MULLIGAN: Could I just interject something here? This is not something that has been thought of at the last moment. First, you must remember this is a standard plant. The DPRK has had a full PSAR for Ulchin 3 and 4 for about two years. They have apparently been studying it at

great length and have asked lots of questions about it, and it's clear that they're studying it.

We also have given them just about every NRC regulation that's ever come down the pike and also given them, I believe, a full set of the regulations from the ROK. So they have been busily studying for quite a long time. Of course, you can't get everything you need just by sitting and reviewing the books, and this other program is meant to supplement that.

COMMISSIONER McGAFFIGAN: Just one final question. The section, in order for us, the United States, to export any material that -- hardware, not the stuff that comes under DOE, an export license is going to be required and in order for an export license, there needs to be an agreement for cooperation.

In order for there to be an agreement for cooperation, there are certain requirements and law that would seem to be difficult to meet in this case. How do we carry out our obligations under the agreement? I think two years ago, we had a premature application for an export license from I think then Combustion Engineering, which the State Department advised them to withdraw, and they did and we also had a petition for the hearing from former Commissioner Gulinski and Mr. Sikulski of the non-proliferation center during that brief period.

This is going to be an adjudicated -- it looks like it may well be an adjudicated export license. So how do the I's get dotted and the T's crossed so that this is an export that would pass muster under our current law?

MR. TURNER: I think the answer to actually many of the questions you've been asking, perhaps most of the questions that you have just asked is that this is all going to be a complicated process. You have a number of strands of different things that are moving on tracks which are both separate and interrelated.

Certainly it is our intention to comply with United States law. We don't always have all the -- we don't necessarily have the answers to all the questions as to how all of these things and the final analysis are going to come together and that's really the nature of the project, which is you're talking about beginning work on a project where certain things, frankly, are not in place at this time.

And it's true that that is not the kind of situation that you would normally find in the United States. At the same time, there are certain firewalls built into the agreement framework and into the way we proceed, which, unless you satisfy certain kinds of conditions at certain times, it will not be possible to proceed beyond that point.

So I think the general answer to this is we will certainly try to do what we need to do in due course. The

earlier you can start the various processes, that you can set them entrained to achieve the desired results by a particular time, the better.

Of course, much of this will also depend, in fact, most of it will also depend on the actions of the North Koreans and what kind of steps they are prepared to take,

both in a technical sense in terms of establishing the kinds of structures you are talking about, but also in a political sense.

Again, there are some pretty amazing things happening today right now between North and South Korea, certainly if you were to make a judgment at this particular -- or make a snapshot at this particular time, you would, I think, come to the conclusion that chances are, as of today, better rather than worse that it will be possible to do some of these things.

But in the final analysis, at least certainly from the standpoint of United States policy and the reason for the agreed framework, at the very heart of this is the requirement that the North Koreans come into compliance with their NPT commitments.

If they don't do that, the project is never going to be completed, in any case. So this is, as I say, a very complicated project, but we work very hard and we take each step as we can and with the aim of bringing it all together

at the appropriate time.

CHAIRMAN MESERVE: Commissioner Diaz.

COMMISSIONER DIAZ: Thank you, Mr. Chairman. Let me prefix a couple of comments and my questions by quoting the Chairman of the NRC, because everything I am going to say or ask is certainly based on that.

The Commission needs to be able to have the capacity to consider this issue. That's really what we don't have and we don't even have the capacity at this moment, from many viewpoints, to consider participation in this issue.

And I want to quote what you have been saying, this is a favorite pastime of mine, like the issues, both short and long-term, an extremely challenging undertaking, painfully slow, premature, preliminary. There's a lot of conditions in there which, in regulatory space, our space, makes it very difficult to achieve the conditions that will lead to having the capacity to consider how we participate in this issue.

I think understating this is the fact that the NRC is an independent domestic agency, with limited international involvement. That is our exporting and our representation outside.

And third, I'd like you to be painfully aware that one of the things that the staff has gone to this Commission

with was what they call a skepticism and a questioning attitude, which this Commissioner intends to use very

carefully, because I don't see where all of these things belong.

Having said that, I think you realize there are many issues that need to be resolved, not in preliminary fashion, before this Commission will have the capacity to consider what is it that we can do.

Having that as setting the stage, let me turn to Mr. Turner and ask a question. You say there is a fundamental framework agreement. One was the dismantling of the graphite reactors from not having the capability to produce plutonium, and the other was the canning of all the spent fuel which you said has been progressing quite adequate, only some non-accessible material which might not be really a problem.

Where is the issue in time regarding this project? Where is the issue of dismantling the capability to produce plutonium? Is the five megawatt reactor fully operational and capable of producing plutonium now, five years from now, 30 years from now? Where is this? I mean, what does the agreement call for?

MR. TURNER: We are not at the stage of dismantling the reactor. That does not come until much later. But the important thing is that it's frozen at this

time.

COMMISSIONER DIAZ: It's frozen, meaning it is not producing plutonium at this time.

MR. TURNER: It's not being used at this time.

COMMISSIONER DIAZ: Not being used at this time. But does the agreement call for the reactor to be dismantled or not capable of producing plutonium or producing plutonium only with really strict safeguards five years from now, at the end of the project, when?

MR. TURNER: Well, first of all let me say that the reactor is not to be dismantled until the LWRs are completed. So you have this sort of -- throughout the agreed framework, you have this step by step reciprocal approach to each and every problem. So that one side has to do certain things before the other side is called on to do other things.

COMMISSIONER DIAZ: The capability to produce plutonium will be there until the reactors are turned over to the DPRK. That is what the agreement reads.

MR. TURNER: Yes. The theoretical capability. Now, my guess is that with each -- I don't know how long you can successfully mothball a reactor.

COMMISSIONER DIAZ: A long time. A small reactor, a long time. All right. Thank you. Let's go to the next issue. You say the statement helping KEDO to train DPRK

personnel. Is it your intention, from the standpoint of the United States Government, that all training activities be conducted through the participation, coordination of KEDO or do you anticipate some United States Government-DPRK --

MR. TURNER: On a bilateral basis?

COMMISSIONER DIAZ: Yes.

MR. TURNER: I think at this point, I would say that we are working through KEDO at this point, which is why --

COMMISSIONER DIAZ: You are not intending to do any bilateral separate.

MR. TURNER: Not to my knowledge, at this stage.

COMMISSIONER DIAZ: Just a comment, because I think it plays to my first question regarding the capabilities to ensure that the proliferation activities. Of course, you all know there is no such thing as a proliferation resistant reactor. There are only things that international organizations and processes can use to monitor compliance with non-proliferation commitments.

So the establishment of commitments to prevent proliferation from light water reactors are an important part of whatever is going to take place, because there is no such thing as a non-proliferated reactor or a proliferation resistant reactor. It does not exist.

It might be along time before it exists. Thank

you, Mr. Turner.

Now, let me ask Mr. Anderson a quick question. Of course, DPRK is a developing country, with many infrastructure problems. Some have been already alluded to. The issue of the power grid is a physical thing. I think there are many physical issues of developing the resources to be able to do many of these things, including having the capability to train people on site, to observe.

But I'm concerned about the capability of the infrastructure to be able to conduct all of the activities that need to be carried at the same time, with assurance that they are being done properly, that they do fit within the international safety and safeguards agreements.

There are major requirements that come into a country that are not only the power grid, although that is extremely important.

There is the infrastructure, the human infrastructure, the organizations and so forth, and history has many, many bad examples all the way through of having not succeeded in developing properly the infrastructure of the country while it tries to become a nuclear power

country.

This issue is being addressed, as you have a timetable that shows the progression of the infrastructure that needs to be developed, because I think, to tell you the

honest truth, if we get five or ten people from DPRK in the United Sates NRC right now, something that I think you have mentioned as being desirable, I think they will have cultural shock. They might not be prepared to see a full democracy with a lot of safeguards and a lot of balance and checks being used for the protection of public health and safety interacting with the high technology.

I think that before anybody comes here, they should be prepared to know what they are going to see and I'm not even hinting that they -- that I will agree at the present time to such a thing, but I am saying if it happens, I think that pre-preparation to avoid the cultural shock that will definitely ensue, the capability to make decision-making, and many places -- without having to check.

On the other hand, when important decisions are made, how structured it is to make those decisions go up and happen. It is a completely different thing. I am sorry to say this, but I see this as a major flaw and a painfully slow process that will take quite a bit of time and I would like to see whether you have any comments on the infrastructure development.

MR. ANDERSON: Mr. Commissioner, you certainly highlighted the challenge that this, there is not any doubt about it. We're doing something extraordinary. But it's not quite as bleak as I think that you're portraying. The

north, in fact, was ahead of the south. It was a more industrialized part of the country at the end of the Japanese period and it remained more industrialized well into the '70s, probably mid '70s, and then because of the policies, they started downhill and when they really started downhill was when the Soviet Union cut off support in '89 and '90.

But they had an infrastructure which has deteriorated, but they had an infrastructure which was pretty impressive, and they also have had lots of educational experiences in the Soviet Union and Hungary, Czechoslovakia, all of the Eastern bloc.

So it's not as though they would be leaving North Korea for the first time, because most of these people are scientists and they've probably got advanced training, or many of them have.

So it would certainly -- if you've only been to East Germany earlier,

then you might find Washington, a cultural shock, and I'm sure that they will, to a certain extent --

COMMISSIONER DIAZ: No, not Washington. The NRC, sir.

MR. ANDERSON: The NRC, cultural shock. Still they have got people that have been trained in the equivalents in the Soviet Union and Eastern Europe, and so I

think that they can manage at least intellectually the climate that they would have to deal with, but the culture may be a bit more difficult.

But we're building on -- they may -- they are certainly a very under-developed place and the place looks awfully bleak when you travel around, except in Pyongyang.

COMMISSIONER DIAZ: I'm talking about the intellectual capability to assimilate a system that is extremely well balanced, that has many, many, many checks on it, that has the capability to make serious decisions without going out of line, making decisions that go sometimes not so quickly over the line, but it is this capability of taking a regulatory issue, for example, and being able to work it down with an organization that is -- I want to call it fluent and that is able to do that, which we have seen in many other developing countries, as completely closing down projects for periods of time or for people not having the ability to do it.

And I think we need to realize that as DPRK is opening, they still have a long history of being a very closed society, and that is the type of cultural shock that I am talking about, coming to another country and all of a sudden being faced with a completely different way of doing things.

MR. ANDERSON: You are quite right. By the same

token, our experience has been that they can deal with us on a very businesslike basis, it's almost never that we get into any political discussions, and they have proven in many, many hours of negotiation that they are intelligent and well educated and able to deal with the kind of issues we're introducing.

These protocols that we have come up with have all been culturally shocking, like what we wanted in terms of privilege and immunity for ourselves at Kumo to protect us and communications and transportation and we've got a South Korean bank in North Korea.

All these things have been startling, I'm sure, but they've taken them in stride and we've been able to move forward with them and I'm confident that we can continue to

do so.

It certainly is a challenge.

COMMISSIONER DIAZ: I just want to assure you that this Commission will be a challenging issue in the months to come regarding how we participate.

MR. ANDERSON: Maybe I can get you to go and visit and you can try them out yourself.

CHAIRMAN MESERVE: We're very much aware that you have many great challenges in front of you and I think that much of the questioning that you've received reflects our awareness that you have a huge task in trying to pull this

off.

One aspect of this that I'd like to pursue is that a lot of the focus of your activity, and appropriately so, has been directed at how we build a competence and capability in the regulator and you've stressed the importance of having a regulator that has an appropriate safety culture and you want to find a way to be able to build that.

As Commissioner Diaz has indicated, it is at least as important to have the licensee be educated, as well, and that, in fact, it's far easier for the regulator to do his job if the licensee understands what the obligation is and shares the fundamental underpinnings

None of your conversation here is focused on that aspect of the task that's in front of you. I wonder if you could system something about whether there is a counterpart effort you have underway that's directed at the entity that is going to be operating the plant and how you bring those people up to speed, not only in terms of the technical competence, but in terms of having a dedication to the appropriate ideals of assuring safe operation.

MR. ANDERSON: Mr. Chairman, I've been remiss in not doing so. Yes, in fact, part of this includes the training program for the operators, managers, and both the senior and more junior levels, and to teach them to be

teachers themselves.

And that is what is what is already built into the training protocol which we have included in April and we will be completing that and it includes training starting very early on and that is absolutely as important, maybe even more -- well, I won't say that -- it is equally as important as the regulatory people.

So that has been known from the start and is very much included and I'm confident that we've got a good agreement, and I can't publicly go into details on that because it has not yet been approved, but it's certainly a

comprehensive agreement and will accomplish the goal not just to get a body of people that can run the thing from the start, but so that they can train people themselves.

CHAIRMAN MESERVE: Commissioner Merrifield has asked for the opportunity to ask just a few very short questions.

COMMISSIONER MERRIFIELD: Thank you, Mr. Chairman. I had a -- I was wondering if you could share what the current timetable is for construction of a simulator at the facility? We found that that would be very valuable knowledge for the purposes of the operators, but also for the purposes of the regulators to learn how to operate the plants. We operate our own simulator facility. What is your timetable for that?

MR. ANDERSON: I'd have to ask about the timetable, but it's certainly included in what we are planning to do. What is the timetable, Jack?

MR. MULLIGAN: Since the simulator needs to be fully consistent with the final configuration of the plant, the timetable for delivery is about two years before fuel delivery. However, the training program calls for extensive simulator training outside of the north, what we're talking about is the simulator that will be delivered to the site, a full-scope simulator.

COMMISSIONER MERRIFIELD: I was going to say the earlier that that can get there, the more those licensees and those potential regulators will have access and understanding and perhaps since this is a standard design, there wouldn't be significant differences between the plants.

MR. MULLIGAN: As I pointed out, there will be extensive simulator training outside of North Korea prior to that. That will be their simulator to do final training in the north for the two years prior to fuel delivery.

COMMISSIONER MERRIFIELD: It's my understanding that we have worked with KEDO already in terms of providing some materials and erg guides and things of that nature. What is the -- if we were to go into the process of also providing the codes, one of the suggestions you've made,

what is the typical timing which would be used to hand those over to the individuals in the DPRK? Do you wait for a given time and meet with them and hand them at that point or is it your intention to try to provide those materials and those codes to them as soon as you receive them?

MR. ANDERSON: These earlier codes and standards we've provided to them as soon as we began discussing those

kinds of things. The others, as Togo said, we've gotten a list of what they would like, we're talking to KINS about what makes sense, and then we will talk to you. But it would be as soon as it makes some sense for them to have them. Let me ask Togo the timing.

MR. TOGO: KEDO has provided to the SNSRC the code and standards before the LWR project and also has provided SNSRC with many regulatory guides and nuclear industry standards, in addition to other codes and standards. So far, we now have provided all the necessary codes and standards until the issue of --

MR. ANDERSON: What about the computer codes we have not provided? I think that's what he is asking.

MR. TOGO: Computer codes, these are not provided so far.

COMMISSIONER MERRIFIELD: If we decided tomorrow, gee, we think you have a good idea, we're going to -- through you, we'll give you the codes, you give them to

them, how soon -- if we gave them to you tomorrow, how soon would you get them to DPRK?

MR. TOGO: After the decision, that we have to ask the DPRK what kind of objectives they have, so maybe -- I can't anticipate how long it takes, but we'd do it as soon as possible after NRC approves provision of the computer codes.

COMMISSIONER MERRIFIELD: Thank you.

CHAIRMAN MESERVE: Commissioner McGaffigan.

COMMISSIONER McGAFFIGAN: In terms of a request for training outside of South Korea for regulators and operators, how -- you've mentioned some of these folks were trained in Moscow and Eastern Europe. How many of them have English training? We basically are pretty competent in training in English around here. We're not very competent in training in Korean or Russian or Polish or whatever.

MR. ANDERSON: That's not that many -- it's another problem. There are certainly some that have, but that is a problem.

COMMISSIONER McGAFFIGAN: In all honesty, we do have foreign regulators here, including from Korea and Japan, but they are quite capable of carrying on in English in order to get the benefit of the training here. So I just see that as a potential obstacle.

Your viewgraph number seven talks about DPRK

owner/operator being responsible for a bunch of things, including safe storage and disposal of radioactive waste and spent fuel. Obviously, the whole purpose of this project is to make sure that that spent fuel is not reprocessed and

will be presumably geologically disposed of or brought back.

You say they're responsible, so apparently the agreement doesn't have any take-back provisions for spent fuel to either Japan or the United States. But how is this going to -- how does that aspect of it work in the end? So that we don't end up producing more weapons material, because reactor grade material can be used for weapons.

MR. ANDERSON: The several things that you mentioned KINS will be looking at all along. The NSAG will also be looking at them all along and giving us advice about it.

COMMISSIONER McGAFFIGAN: But this will be after the fact. The plant is running now, they are responsible under the agreement for -- the spent fuel is initially going to go to a spent fuel pool and then they're responsible, according to this, for the disposal and safe storage and ultimately disposal of this spent fuel.

If we have a 123 agreement, we will have in place all the usual U.S. consent rights to reprocessing, et cetera, that would be there in a formal agreement. So that will be there.

But are there additional safeguards envisioned?

MR. ANDERSON: The agreement requires that it be removed from North Korea and it's not specified where it's going and by mutual agreement, that's the way it would be.

COMMISSIONER McGAFFIGAN: So the agreement says that the spent fuel, after sitting in the spent fuel pool for a while --

MR. ANDERSON: Will be removed.

COMMISSIONER McGAFFIGAN: -- will be removed.

MR. ANDERSON: Yes. It will be subject to IAEA safeguards, as well.

@@ MR. ANDERSON: While it's there.

@@ MR. ANDERSON: Yes. But in the meantime, KINS and the NSAG will be keeping an eye on all of these issues as they emerge.

COMMISSIONER McGAFFIGAN: And who is the American member of NSAG?

MR. ANDERSON: David Hill.

COMMISSIONER McGAFFIGAN: David Hill. Okay.

MR. ANDERSON: I'd be happy to give you a list.

COMMISSIONER McGAFFIGAN: Thank you very much, appreciate it.

CHAIRMAN MESERVE: I think we've -- unless Commissioner Diaz has a question.

COMMISSIONER DIAZ: No.

CHAIRMAN MESERVE: I think that we have gone over our allotted time. We very much appreciate the presentation that you've given to us. As you see, this is a body where we ask very direct questions and we are fully engaged in this matter and we very much appreciate the efforts that you've made to be here today and to respond to our questions.

With that, let me turn to my colleagues and see if they have a closing statement. If not, we stand adjourned.

MR. ANDERSON: Thank you very much, Mr. Chairman.

[Whereupon, at 2:45 p.m., the meeting was concluded.]