The 2014 International Forum on Peaceful Uses of Nuclear Energy,
Nuclear Non-Proliferation and Nuclear Security
—Future Direction toward Promoting Non-Proliferation and
the Proposal for Developing the Human Resources Centers of Excellence (COEs)
in accordance with the New Strategic Energy Plan—

Report on the Forum

January 9, 2015
Japan Atomic Energy Agency

【Overview】

1. Date: December 3, 2014 (Wednesday) 10:00–17:35

2.Venue: Jiji Press Hall

3.Organizer: Japan Atomic Energy Agency (JAEA)

4.Co-organizers: The Japan Institute of International Affairs (JIIA),
Department of Nuclear Engineering and Management, School of Engineering, the University of Tokyo,
International Nuclear Research Cooperation Center, Tokyo Institute of Technology

5.Participants: approximately 150

6.Program:

[Opening Remarks]

Shojiro Matsuura, JAEA President

[Keynote Speeches]

1) "Nuclear Security and the role of the United States"
Bonnie Jenkins, Ambassador, Coordinator of Threat Reduction Programs, Bureau of International Security and Non-proliferation, US Department of State
2) "International Efforts for Ensuring the Peaceful Use of Nuclear Energy and Nuclear Non-proliferation, and Expectations for Japan"
Olli Heinonen, Senior fellow with the Belfer Center at Harvard University Kennedy School (Former IAEA Deputy Director General)
3) "Nuclear Non-proliferation and Security - Challenges and Japan's Approach"
Kenzo Oshima, Former Commissioner of the Nuclear Regulation Authority

[Introductory Remarks]

1) "Recent trends in Nuclear Non-proliferation and Nuclear Security in Japan and Overseas"
Toshiro Mochiji, Director of the Integrated Support Center for Nuclear Non-

proliferation and Nuclear Security (ISCN), Japan Atomic Energy Agency (JAEA)

[Panel Discussion 1]

"Effective and efficient measures to ensure nuclear non-proliferation based on the situations of Japan and overseas, and the direction and role of technology development"

[Panel Discussion 2]

"Role of nuclear security HR COEs and future expectations"

7.Summary of Keynote Speeches, etc.

- Ambassador Bonnie Jenkins: Presented the background to convening Nuclear Security Summits, details of the 1st - 3rd Nuclear Security Summits, details to be discussed at the 4th Nuclear Security Summit to be held in 2016, the U.S. view, and expectations for Japan.

- Olli Heinonen: Described challenges for the NPT Review Conference to be held in 2015, prospects for international negotiations aimed at solving Iran's nuclear issues and impacts of its outcome, review of Japan's plutonium utilization after the accident at TEPCO's Fukushima nuclear power station, and expectations for Japan.

- Kenzo Oshima: Described issues of nuclear regulations exposed by the accident at TEPCO's Fukushima Daiichi nuclear power station, importance of nuclear security as well as safety, and addressing '3S'; safeguard functions for Japan, which opts to continue to use nuclear energy, and the importance of cooperation with the

international society.

- Toshiro Mochiji: Presented the international situation in implementing integrated safeguards which the IAEA promotes, status of discussion for implementing state-level safeguards, Japan's efforts to improve transparency in plutonium utilization, establishment of the Integrated Support Center for Nuclear Non-proliferation and Nuclear Security (ISCN), and activities in Asia.

8.Summary of Panel Discussions

[Panel Discussion 1]
"Effective and Efficient Measures to Ensure Nuclear Non-proliferation based on the Situations of Japan and Overseas, and the Direction and Role of Technology Development"

In Panel Discussion 1, as the nuclear non-proliferation regime is facing various problems and challenges under current international circumstances, how to implement effective and efficient safeguards was discussed. The discussion was conducted on the basis of two points: "Domestic and overseas situations regarding nuclear non-proliferation and measures to ensure nuclear non-proliferation," and "Technical measures and the direction of technological development to address nuclear proliferation issues."

Cooley introduced the strategy for IAEA safeguards with enhanced effectiveness and efficiency, with a focus on the State-Level Concept (SLC). She indicated that a State-Level Approach (SLA) had been currently applied to 53 nations under integrated safeguards, and that we would continue to focus on SLA implementation in material accountancy, on-site verification and sensitive processes in the nuclear fuel cycle (enrichment and reprocessing). She also suggested the existing SLAs should be developed further, and that SLA tailor-made in line with each country's characteristics based on the SLC will be applied to other countries in the future. Heinonen stated that quality and accuracy of safeguards-related information obtained by the IAEA had been carefully verified, and that the recent Safeguards Implementation Report illustrated the credibility of the information, and its statement leads us to the conclusion that "all activities remain for peaceful use".

Taking account of this information, panelists indicated the need to substantiate the evidence gathered in order to improve the reliability of IAEA's inspections, and the importance of objectivity in guidance and review for inspectors and analysts. They also expressed opinions that the criteria to determine proliferation risks should be fully based on technical perspectives, such as the implementation level of the nuclear fuel cycle and technical capabilities, and should not be based on intent of proliferation.

Furthermore, some reports were presented on the nuclear fuel cycle, and ensuring transparency in plutonium utilization as a challenge in Japan. First, Kayama introduced Japan's current nuclear energy policies such as the New Strategic Energy Plan approved by the Cabinet in April 2014, and stated that Japan's nuclear fuel cycle policy was consistent and being implemented with a long-term strategy. Xerri described how plutonium is managed in France, and said that they considered the reuse and recycling of spent nuclear fuel most important in terms of environmental compatibility, and suggested that they introduce fast reactors step-by-step in accordance with their development status in the long term, and that they have a plan to cease the use of natural uranium in the future due to the progress of fast reactor recycling. Endo expressed the opinion that although Japan's plutonium utilization is strongly supported by Agreement for Cooperation Between the Government of the United States of America and the Government of Japan Concerning Peaceful Uses of Nuclear Energy, it is important to comply with nuclear non-proliferation and nuclear security systems in order to maintain plutonium utilization. In addition, Kuno quoted the IAEA Guidelines for the Management of Plutonium "INFCIRC549", and stated that both nuclear-weapon states and non-nuclear-weapon states should promptly maintain the supply-demand balance in a practical way, and suggested that it could be a good idea to formulate a plutonium-use plan based on a medium-to-long term timeframe.

As the second discussion point, they discussed technical measures to address nuclear

proliferation issues and the direction of technological developments which comply with the safeguards strategy. First, Cooley introduced a strategic plan and long-ter &D plan at IAEA's Department of Safeguards. The IAEA has had a long-term strategic plan for 12 years from 2012, and planned R&D based on it, and they implemented R&D in the following categories: 1. System development capability; 2. Analysis ability; 3. Operational capability; 4. Preparation capability, with the aim of improving efficiency and efficacy of safeguards. Then, Kuno introduced safeguards in the nuclear fuel cycle in Japan and nuclear non-proliferation technology and stated that the development of safeguards technology for Japan's nuclear fuel cycle advanced greatly in the wake of safeguard projects for domestic and overseas reprocessing and nuclear enrichment facilities from the late 1970s to early 1990s. There were developments of various nuclear non-proliferation technologies such as consumption of fissile plutonium by high burn-up as nuclear proliferation resistance technology. He expressed the opinion that these should be further developed under close international cooperation.

[Panel Discussion 2]
"Role of Nuclear Security COEs and Future Expectations"

In this panel, panelists discussed the following three points: 1. Current status of Nuclear Security Training and Support Centers and COEs, and Good Practice; 2. What these centers can do to enhance nuclear security (New role for COEs); 3. Regional cooperation in the Nuclear Security Training and Support Center (NSSC) and COEs in states, which the IAEA recommends establishing, and international cooperation and partnerships with international initiatives (New Role).

With respect to 1. Current status of Nuclear Security Training and Support Center and COEs, and Good Practice, the discussion was held after describing the background of establishing the respective COEs: ISCN in Japan, INSA (International Nuclear Security Academy) in ROK, and I-CoNCEP (Indonesia Center of Excellence on Nuclear Security and Emergency Preparedness) in Indonesia, the current situation, each center's good practice and future plans. They highlighted the importance of regional cooperation and existence of COEs which are already a platform for nuclear security, and the increased importance of cooperation among COEs.

In the discussion point for 2. What these centers can do to enhance nuclear security (New role for COEs), the following statements were made about the roles of COEs and the NSSC, with respect to how to maintain momentum towards enhancing nuclear security after completion of the 2016 Nuclear Security Summit process. Squassoni expressed the opinion that efforts on nuclear security were built on each state's voluntary efforts, and that establishing COEs in regions was of benefit for nuclear security enhancement. Naoi agreed to establish a peer review

system in which states can evaluate each other's NSSCs and COE functions. Choe said that how to prepare for domestic proliferation risk and fostering a culture of nuclear security is important. He also said we could now see the direction of cooperation through partnerships among COEs in Northeast Asia.

As for 3, Regional cooperation between NSSCs and COEs, international cooperation, partnerships with international initiatives, the current status of cooperation between the three states of Japan, China and ROK was described as a specific example. Naoi said there was a concern that there may be overlapping functions by establishing similar centers in the small region of Asia, but that no functions currently overlap. Jenkins, the Chair, pointed out that the cooperative structure among the 3 states of Japan, China and ROK had already been established, and that complementing each other in the region was important. Choe pointed out the importance of network building among COEs and the creation of a database and mapping. Yamamura cited cooperation among the 3 states of Japan, China and ROK was welcome in terms of the effective use of resources, and that it was necessary to divide roles in order to avoid overlapping, while acting in a complementary manner. Naoi said improvement of COE capabilities in regions would lead to an increase in the level of international nuclear security function, and that high mobility can be expected with regionalized activity. Squassoni commented that competition among COEs should not necessarily be avoided.

Lastly, the Chair summarized that we were able to confirm what kind of progress had been made since 2010 in this session, and that understanding COE capabilities and specialized areas was extremely beneficial when considering each one's position and continuation after 2016. She also pointed out that it was a good idea to make a gift basket idea for the 2016 Summit, to further promote cooperation among COEs in Japan, China and ROK. She finished up with a comment that cooperation is required for the development and sustainability of each center, that each COE should value its uniqueness, avoid overlapping functions with other COEs, and that a network can be formed while COEs are developing, which she is looking forward to.

【Summary】

Two themes were covered during this year's discussion on the implementation of effective and efficient safeguards, systematized and technical measures to ensure transparency of plutonium utilization, the role and direction of technological development and enhancement of nuclear non-proliferation and nuclear security, in light of situational changes such as international concerns for nuclear proliferation and the increase of emerging nuclear energy states; what kind

of contributions COEs in states including Japan can make in the future to enhance nuclear non-proliferation and nuclear security, and how to implement them.

The first theme indicates that what is important in plutonium utilization is not only to comply with the nuclear non-proliferation and nuclear security systems, but also to have long-term utilization measures. There was also the opinion that the criteria to determine the proliferation risk should be fully based on technical perspectives, such as the situation of the nuclear fuel cycle, and should not be based on intent or lack of intent of proliferation. In the second theme, it was pointed out that each COE demonstrates its strengths with a view after the 2016 Nuclear Security Summit, and particularly that cooperation between the 3 states of Japan, China and ROK will become important in the Asia region.

This international Forum intends to be a broad opportunity for the general public to deepen their understanding of the field through discussions on hot topics in nuclear non-proliferation and nuclear security in public places, with the participation of domestic and overseas intellectuals in nuclear non-proliferation and nuclear security. We also hope that this Forum will continue to improve as a venue for developing such discussion in the future.

Attachment

Main Statements by Panelists

[Panel Discussion 1]

"Effective and Efficient Measures to Ensure Nuclear Non-proliferation based on the situations of Japan and Overseas, and the Direction and Role of Technology Development"

[Chair]

Kenji Murakami	President, Nuclear Material Control Center

[Panelists]

Jill Cooley	Director, Division of Concepts and Planning, Department of Safeguards, International Atomic Energy Agency (IAEA)
Olli Heinonen	Senior Fellow, Belfer Center for Science and International Affairs, John F. Kennedy School of Government, Harvard University (Former IAEA Deputy Director General)
Hirobumi Kayama	Director, Office for International Nuclear Energy Cooperation, Agency for Natural Resources and Energy, Ministry of Economy, Trade and Industry
Christophe Xerri	Nuclear Counselor at the Embassy of France in Japan
Tetsuya Endo	Former Deputy Chairman of the Japan Atomic Energy Commission (JAEC), Visiting Researcher, Japan Institute of International Affairs (JIIA)
Yusuke Kuno	Deputy Director, Integrated Support Center for Nuclear Non-proliferation and Nuclear Security (JAEA), Professor (appointed), Graduate School, University of Tokyo

Kenji Murakami

Jill Cooley

Olli Heinonen

Hirobumi Kayama

Christophe Xerri

Tetsuya Endo

Yusuke Kuno

Discussion Point 1: "Domestic and Overseas Situations Regarding Nuclear Non-proliferation and Measures to Ensure Nuclear Non-proliferation"

- ✓ The nuclear non-proliferation regime is facing various problems and challenges under current international circumstances. How to implement effective and efficient safeguards were discussed. Along with this discussion point, two experts who have engaged for many years in practical safeguards operations in the IAEA provided the information below.
- ✓ IAEA's strategy for Safeguards with enhanced effectiveness and efficiency: State-Level Concept (SLC) being implemented from this perspective is to comprehensively interpret the activities and capability of an interested state at a state level. To date, it has been applied to 53 nations under integrated safeguards as a State-Level Approach (SLA) optimized for each state on the basis of scale of nuclear energy use and technological capability. In order to ensure effectiveness, it is important to continue to focus on SLA's implementation in material accountancy, on-site verification and sensitive processes of nuclear fuel cycle (enrichment and reprocessing). We suggest the existing SLA should be developed, and that

SLA tailor-made in line with each country's characteristics based on the SLC would be applied to other countries in the future.

- ✓ Efforts in State-Level Approach: Safeguards-related information obtained by the IAEA derives from declared and complementary access from interested states, and through independent open sources, but the quality and accuracy of such information has been carefully verified by checking variations in the information, and how it is obtained. A recent Safeguards Implementation Report illustrates the credibility of information, and its statement leads us to the conclusion that "all activities remain for peaceful use", which is one of the characteristics of the SLA.
- ✓ Taking account of this information, the issue for Discussion 1, "Measures and Directions of IAEA Safeguards with enhanced effectiveness and efficiency" was stated, and the followings were responses to the questions presented by the chair:
  (1) Challenges for enhancing effectiveness and efficiency of Safeguards
  (2) Advantages and disadvantages of the SLC, and its implementation challenges
  (3) Different safeguards approaches to states depending on the level of their nuclear proliferation risks
  (4) Future challenges in safeguards applications by states and regions
- ✓ In order to improve the reliability of IAEA's inspections, it may be necessary to substantiate the evidence gathered. It is important that SLC is literally tailor-made in light of characteristics of each state, and it has objectivity in guidance and review for inspectors and analysts, and that quality of information is ensured. Criteria to determine proliferation risks should be fully based on technical perspectives, such as the implementation level of the nuclear fuel cycle and technical capabilities, and should not be based on intent or lack of intent of proliferation. Regional regulations are complemented in combination with IAEA safeguards and respective capabilities are enhanced. That will be of benefit to ensure effectiveness and efficiency going forward.

Next, the issue for Discussion 2, "Domestic Issue: Nuclear Fuel Cycle and Ensuring Transparency of Plutonium Utilization" was indicated, and the following was reported.

- ✓ Japan's current nuclear energy policy: The New Strategic Energy Plan decided by the Cabinet, defines nuclear power generation as an important base-load power source. Restarting individual nuclear energy plants will be moved forward, after safety screenings are completed by the regulatory agency, and local consent is made. The first resolution on proper management of plutonium was adopted at a Cabinet meeting, which has clarified Japan's commitment, and Monju is positioned as an international research center for technological development regarding waste volume reduction and hazard level reduction,

etc. Japan's Nuclear Fuel Cycle Policy is consistent and being implemented with the intention of being a long-term strategy.

- ✓ Plutonium management in France: They consider reuse and recycling of used nuclear fuel most important in terms of environmental compatibility, and understand that stabilizing the plutonium inventory is the top of the priority. 24 out of 54 PWRs can load MOX and cover 10% of electric power needs. They expect to maintain a steady inventory of used fuel at an interim storage facility by 2015. They plan to introduce fast reactors step-by-step in accordance with their development status in the long term and cease to use natural uranium in the future due to the progress of the fast reactor recycle.
- ✓ Management of plutonium through Japan's Nuclear Fuel Cycle Policy: Although Japan's plutonium utilization is strongly supported by Agreement for Cooperation Between the Government of the United States of America and the Government of Japan Concerning Peaceful Uses of Nuclear Energy, it is important to comply with the nuclear non-proliferation and nuclear security systems, in order to maintain plutonium utilization. Transparency in the medium-to-long term perspective, and rational explanation of plutonium management, which is concern for the international society, are both essential. Although it is a personal idea, a nuclear fuel cycle with the Asia region in mind may be worth considering.
- ✓ As an additional comment, a panelist quoted IAEA Guidelines for the Management of Plutonium "INFCIRC549", and stated that both nuclear-weapon states and non-nuclear-weapon states should promptly maintain supply-demand balance in a practical way. he also suggested that it would be a good idea for Japan to formulate a plutonium-use plan based on a medium-to-long term timeframe, such as MOX use, in light of the fact that the U.K. and U.S. are reviewing the 30–40 year plan on the disposal of their plutonium stocks.

Discussion Point 2: "Technical Measures and Direction of Technological Development to Address Nuclear Proliferation Issues"

Based on the outcome of Discussion Point 1, the discussion of Technical Measures to Address Present Nuclear Proliferation Issues and Direction of Technological Development which comply with Safeguards Strategy was introduced. Two experts provided the information below for this discussion point.

- ✓ Strategic Plan and Long-term R&D Plan at IAEA's Department of Safeguards: IAEA has a long-term strategic plan for the 12 years from 2012, and planned R&D based on it, and they have implemented R&D in the following categories: 1. System development capability, 2. Analysis ability, 3. Operational capability, 4. Preparation capability, with the aim of

improving efficiency and efficacy of safeguards. Through 1, the necessary conditions for safeguards are fulfilled, and development of instruments that enhance their efficiency and efficacy are being considered, and new instruments are being developed. In 2, effective utilization of safeguards information through information analysis and capacity to analyze information at analysis laboratory are being improved. In addition, improvements of expertise and study for SLC applications are being conducted through 3. Various Matters Related to Safeguards Targeted at Future New Nuclear Power Facilities that are being studied in 4.

- ✓ Safeguards of the fuel cycle and nuclear non-proliferation technology in Japan: The development of Safeguards technology for Japan's nuclear fuel cycle advanced greatly in the wake of safeguards projects for domestic and overseas reprocessing and nuclear enrichment facilities from the late 1970s to early 1990s. These are application considerations for Rokkasho Reprocessing Plant based on technological development at the Nuclear Fuel Reprocessing Plant and Plutonium Conversion Facility in Tokai, and application considerations for the JMOX facility based on technological developments at the JAEA-PFPF (Plutonium Fuel Production Facility). Various nuclear non-proliferation technologies, such as consumption of fissile plutonium by high burn-up as nuclear proliferation resistance technology, are being developed. It is important that these should be further developed under close cooperation with the U.S., France and the IAEA, etc.
- ✓ Based on this information, the issue for Discussion 3, "Ideas to Develop Safeguards Technologies that can Contribute to International Safeguards, Especially Supporting the IAEA", was stated, and the Chair presented the following two questions, but in the interest of time no discussion was conducted.
  (1) What are the technological needs for the IAEA or SSAC that correspond to future IAEA Safeguards directions (strategies)? Are there any efficient ways to address such needs?
  (2) What is the significance of collaborative efforts in technology development to ensure nuclear non-proliferation in Japan, the U.S. and other states?

(Questions from Floor)

Q. Current status of local consent for MOX use in light-water reactors (plutonium thermal use)

A. Local consent and the NRA screening are the two important factors for implementing plutonium thermal use. The latter was introduced at the presentation. The former is also in a relatively positive situation. The initial plan of the Federation of Electric Power Companies of Japan (FEPC) is running considerably behind the schedule, but there is a possibility in terms of quantity. Also, relatively recent reactors are subjected to a plan to use MOX fuel in light-water reactors. Therefore, it is suggested they are more likely to pass

regulatory screenings than old reactors.

Q. Impact on Japan due to revised SLA

A. Currently, the SLA has been introduced in 53 states including Japan. This was due to an integrated safeguards approach to states that were subjected to broader conclusion, and was designed in the 1990s. From now on, the SLA will be updated, including optimization of the existing SLA. The previous approach was updating each facility, but it will be changed to be updating the facilities across the state, and which facility to be focused on will be reviewed. By doing this, the SLA will have a flexible approach and effects which reduce work at the site can be anticipated.

Q. Concern from Northeast Asian countries about Japan's Nuclear Fuel Cycle Policy

A. Japan fulfills its accountability in Northeast Asia for properly management of nuclear fuel cycle technology, including the Rokkasho Reprocessing Plant and fulfillment of international obligations through IAEA Safeguards, thereby ensuring transparency.

(Summary of the Discussion)

✓ With respect to Discussion Point 1, SLC is extremely effective as a strong tool to implement effective safeguards. Also, close communication among the IAEA and member states is important for SLC's success in a broader sense. For Discussion Point 2, transparency of plutonium utilization, it is essential to fulfill accountability for the medium-to-long term plutonium-use plan. This is a challenge not only for Japan, but also for the international society, and requires an international cooperation. The development of safeguards technologies at a fuel cycle facility under Japan-US cooperation was introduced in the issue for Discussion 3, Technology Development. Hereafter, the importance of developing technologies that can contribute to safeguards activities under international cooperation based on the needs of the IAEA, was shown.

[Panel Discussion 2]

"Role of Nuclear Security COEs and Future Expectations"

[Chair]

Bonnie Jenkins	Ambassador, Coordinator of Threat Reduction Programs, Bureau of International Security and Non-proliferation, US Department of State

[Panelists]

Kwan Kyoo-Choe	Director General of the International Nuclear Non-proliferation and Security Academy (INSA) at the ROK Institute of Nuclear Non-proliferation and Control (KINAC)
Sharon Squassoni	Senior Fellow and Director of the Proliferation Prevention Program at the Center for Strategic and International Studies (CSIS)
Sugeng Sumbarjo	Deputy Chairman for Licensing and Inspection of the Indonesian Nuclear Energy Regulatory Agency (BAPETEN)
Tsukasa Yamamura	Director of the Office for Nuclear Non-proliferation Science and Technology, Research and Development Bureau, Ministry of Education, Culture, Sports, Science and Technology of Japan(MEXT)
Yosuke Naoi	Deputy Director of the Integrated Support Center for Nuclear Proliferation and Nuclear Security, JAEA

Bonnie Jenkins

Kwan Kyoo-Choe

Sharon Squassoni

Sugeng Sumbarjo

Tsukasa Yamamura

Yosuke Naoi

Discussion Point 1: "Actual Status of Nuclear Security Related Support Centers and COEs, and Good Practice"

Japan, China and ROK announced the establishment of the COE after the Nuclear Security Summit in Washington in 2010. Japan and ROK established COEs respectively and started their activities. In this session, there were reports on the background, the current situation, Good Practices and future plans of respective COE establishments including the Integrated Support Center for Nuclear Nonproliferation and Nuclear Security (ISCN), International Nuclear Security Academy (INSA) in ROK and Indonesia Center of Excellence on Nuclear Security and Emergency Preparedness (I-CoNCEP).

- ✓ As one of the Japanese government's commitments at the Nuclear Security Summit, there was a report on the area which the Ministry of Education, Culture, Sports, Science and

Technology (MEXT) manages. It described the background of the ISCN's establishment and its activity summary, and introduced capacity building support through human resource development support and technology development for nuclear material measurement and detection. It also referred to the importance of regional cooperation and harmonization among states (U.S., EU, IAEA, etc.).

- ✓ ISCN's 4-year activity status was explained, with a focus on Good Practices of International Capacity Building Support Centers. The ISCN provides training for safeguards and physical protection of many nuclear materials, and also offers training courses that meet needs such as cyber security and security of radiation sources as well as domestic and overseas activities to foster a culture of nuclear security. In addition, there was an introduction of ISCN's ideas to enhance the effect of Human Resource development support (various drills, VR system, PP field) and achievements. As a result, the ISCN has become able to provide a platform for discussion and information sharing in such a short 4-year period of time.
- ✓ There was a report on the background of KINAC and INSA establishments, overview, achievements and future policies. KINAC is a regulatory authority, performing screening and inspections. The INSA is a subordinate organization of KINAC and was established in February 2014. The INSA is mainly in charge of education and trainings regarding nuclear non-proliferation and nuclear security, and also provides exclusive practical trainings for export control. There was a comment that it is desirable that cooperation among COEs will be developed to the mutual dependence phase, and promote standardization in various situations in order to provide effective training.
- ✓ There was a report on the background of the establishment of I-CoNCEP, which was established by the Indonesian Nuclear Energy Regulatory Agency (BAPETEN) in August 2014, its overview, achievements and future courses of action. In addition to the fact that Indonesia comprises of many islands (17,508), there is a large potential risk regarding nuclear security there, because of continuing political uncertainty. Therefore, it is necessary to prepare for emergencies. I-CoNCEP adopts a style which combines COE with various existing models, and was established to support a wide-range of institutions including coordination of stakeholders. (It is not a substitute for a competent governmental agency.) They are also improving the education systems such as e-learning, and creating training programs tailored to various targets as well as providing technical support. In addition, they also have online radiation monitoring to respond to emergencies and supervise all parts in the network. Under the IAEA’s cooperation, monitoring points (portals) of radiation sources, nuclear materials and illegal trade have been installed, and they intend to complete the installation by 2017.

Discussion Point 2: "What these Centers can do to enhance Nuclear Security (New role for COEs)"

The following statements were made about the roles of COEs and the NSSC with respect to how to maintain momentum towards enhancing nuclear security after completion of the 2016 Nuclear Security Summit process.

(Maintaining COEs and NSSCs after completion of the 2016 Summit: Squassoni)
There was a report on the COE's anticipated role to maintain and enhance nuclear security and other ideas for the 2016 Nuclear Security Summit.

- ✓ Efforts on nuclear security are built on each state's voluntary efforts. From that perspective, establishing more COEs in each region is of benefit to nuclear security enhancement.
- ✓ What is important for sustainability is the 1) System itself continues, 2) Regional legal and regulation systems remain functioning, 3) Human resources, knowledge, facilities, funds continue. Since no treaty like NPT exists for nuclear security, we have huge expectations for COE function maintenance and improvement. We hope COEs will offer policy planning as well as technological development and trainings. If individual state's COE functions are enhanced, it will help reducing the burden on the IAEA and a state's government, and improving the entire nuclear security systems. There has been an increased cooperation between ROK, China and Japan and these countries share training resources. It will be possible to establish a peer review system in which states can evaluate each other's COE functions. There are requests for granting approval or certification by an international institution to individuals who received training.
- ✓ We propose to set a milestone for tie-ups (having workshops, setting the number of tie-ups), as an idea for the 2016 Nuclear Security Summit. There are some cases which are functioning as voluntary approaches, such as the MTCR (Missile Technology Control Regime), although they are not presently institutionalized. These can be referred to at the Summit. Instead of a COE making efforts alone, we expect contributions from relevant ministries and agencies in a top-down approach, and from field sites in a bottom-up approach.

(Discussion regarding Discussion Point 2)
There were opinions on future directions of COEs, after acknowledging that many things have been achieved through COE efforts in the states since 2010.

- ✓ We agreed to establish a peer review system in which states can evaluate each other's NSSC and COE functions. It is necessary to consider cooperation to continue activities after the Summit, as well. To that end, it is beneficial to get a cooperative system institutionalized. It is necessary to present such direction to the world at the Summit.
- ✓ We have been discussing how to prepare for domestic proliferation risks. We believe that fostering a culture of nuclear security is important. We can now see the direction of cooperation through repeated meetings in Northeast Asia. It is possible to offer capability development support to emerging countries as a core center. In addition, it is possible to offer the direction of policies through discussion and provide support so that they can make a correct decision. COE cannot make policies or create an international framework. Instead, COE will act to follow major trends.
- ✓ We expected that all participants would agree on the cooperation between Japan, China and ROK, but it was not easy, in fact. Are there any differences in capabilities, any competitions or any gaps between Japan, China and ROK?
- ➢ Jenkins, the Chair, stated that cooperation between Japan, China and ROK would be discussed in Discussion Point 3.
- ✓ If common performance criteria exist, it will be easier to build cooperative relationships between multiple COEs. Systematic trainings can be provided only if such criteria exist. Such approach is feasible in the near future. Approval of trainings by international institutions may look good publicly, but is not necessarily.
- ✓ INFCIRC/225 created by the IAEA can be used as one of the criteria. It is important to judge that the COE's trainings meet our expectations. The IAEA does not certify COE, but WINS is considering accrediting trainers who have received trainings.

Discussion Point 3: "Regional Cooperation Between NSSCs and COEs, International Cooperation and Partnerships with International Initiative (New role)"

As a specific example of regional cooperation between the NSSC and COE, international cooperation, partnerships on international initiatives, the current status of cooperation among the 3 states of Japan, China and ROK, was described.

(Cooperation between the 3 states of Japan, China and ROK)

- ✓ The IAEA initially had a concern that there may be overlapping functions by establishing similar centers in a small region, but no functions currently overlap. Cooperation is actually performed on 3 points; 1. Information Sharing (i.e. strengths of each center, disclosure of timing to provide international educational trainings), 2. Sharing of Excellent Examples (sending observers to train each other), 3. Sharing Resources (sending lecturers to each

other). We are now considering 4. Cooperation Regarding Support to Regions other than these 3 States, in the future.

(Discussion regarding Discussion Point 3)
They discussed what kind of efforts can be made in order to develop a cooperation structure in each region.

- ✓ The cooperative structure between the 3 states of Japan, China and ROK has already been established, and it continues to be necessary to support each other in the region if there is a gap in COE capabilities. How we can foster a culture of nuclear security and what we need to focus on vary depending on the region. We also need to raise awareness why desktop exercises are necessary along with sustainable trainings through the COE.
- ✓ There has been an increase in the importance of network building, database creation and mapping for COE functions. Through these activities, we can clarify what the weakness is in the COEs of the home states, and how to overcome obstacles by comparing them with other states.
- ✓ Cooperation between the 3 states of Japan, China and ROK is welcome in terms of effective use of resources. The strengths of each COE and surrounding environment are different. It is necessary to be aware of role sharing in order to avoid overlaps, while acting in a complementary manner.
- ✓ As the IAEA has a heavy workload, mobility and flexibility cannot always be expected. Improvement in COE capabilities in regions will lead to an increase in the level of international nuclear security functions. High mobility can be expected with regionalized activity.
- ✓ This may be an answer to questions raised during discussion for Discussion Point 2; if there is any difference in capabilities between Japan, China and ROK, any competitions, and competitions between COEs should not necessarily be avoided. That may help improving capabilities in some cases. Since the IAEA's resources are limited, it is desirable that resources be covered by each region. The fact that agendas vary depending on regions, is one of the reasons why region-based cooperation is important.

(Comment from Floor)

- ✓ I would like to make a comment on the sovereignty of a member state. A state must correspond to its own system in terms of security and safety, although a state should not enforce security and safety from a top-down approach, because of sovereignty. Also, as the legal system of each state must be complied with, we therefore must pay attention to what cannot be shared with other states. There are also fields that we can share such as programs,

training and trainers. However, we need to be careful when trainings for trainers are provided. Trainings must be offered in their own language and under their own legal system. This is due to; 1. Cultural differences, 2. Most trainers do not understand English, 3. Enhanced efficiency.

(Summary of the Discussion)

- ✓ In this session, we were able to confirm what kind of progress had been made since 2010. Knowing each other's capabilities and specialized areas, is extremely beneficial when reviewing each individual's perspective and considering continuity after 2016. It may also be a good idea to make a gift basket for the 2016 Summit to further promote cooperation between COEs in Japan, China and ROK. Cooperation is required for the development and continuity of each center. Each COE should value its uniqueness, and avoid overlapping functions with other COEs, since developing human resources is commonly required to all COEs. A network can be formed while COEs are developing. This is something which we are looking forward to.