

COUNCIL FOR SECURITY COOPERATION IN THE ASIA-PACIFIC

Meeting of the Nuclear Energy Experts Group (NEEG) of the Council for Security Cooperation in the Asia-Pacific (CSCAP)

**Rex Hotel, Ho Chi Minh City, Vietnam
November 9-10, 2012**

Chairman's Report

On Nov. 9-10, 2012, the Nuclear Energy Experts Group (NEEG), a subgroup of the CSCAP Study Group on Countering the Proliferation of Weapons of Mass Destruction in the Asia Pacific, met in Ho Chi Minh City, Vietnam. The NEEG included 25 participants and observers from 11 countries and member committees from throughout the Asia-Pacific region and beyond. All attended in their private capacities. The report that follows reflects the views of the co-chair; while it has been reviewed by all participants for accuracy, it is not intended to be a consensus document.

Session 1: The NEEG: Past and Present

Ralph Cossa (*Pacific Forum CSIS*) and Carl Baker (*Pacific Forum CSIS*) opened the meeting by describing the history of the NEEG, which had met about a dozen times between 1998 and 2003, where it conducted groundbreaking work on nuclear energy safety, security, and transparency. They explained that reconvening the NEEG is particularly appropriate in view of the so-called "nuclear renaissance" in Asia. With several countries in the region developing energy alternatives that include nuclear power and others seemingly intent on expanding their nuclear energy programs despite concerns raised by the March 11, 2011 Fukushima nuclear tragedy, greater transparency and confidence-building measures appear vital.

The NEEG is intended to serve as a multilateral forum to discuss methods and processes to develop and manage nuclear energy programs; it is neither pro- nor anti-nuclear energy per se. It will examine and develop recommendations on how states and regional organizations and initiatives can assist states throughout the Asia-Pacific region in ensuring the safe, secure, and proliferation-resistant development and management of nuclear power programs. Given that Southeast Asian states are "newcomers" to nuclear energy, it will be particularly beneficial to focus on enhancing regional cooperation within the Association of Southeast Asian Nations (ASEAN). Policy recommendations will be fed to respective governments and multilaterally through the ASEAN Regional Forum Inter-Sessional Meeting on Non-Proliferation and Disarmament (ARF ISM/NPD).

NEEG analysis and activities will include a mix of country-specific presentations on various aspects of indigenous nuclear programs as well as specific aspects of nuclear energy and/or the nuclear nonproliferation, safety, and security regimes. Practical

exercises, such as action-focused scenarios or simulations, could also enhance mutual understanding and encourage regional cooperation and preparedness in response to nuclear incidents or accidents. Topics for discussion will include regional approaches toward data sharing, spent fuel storage and disposal, and the creation of Reprocessing- and Enrichment-Free Zones, among others. Overall, the NEEG will enable participants to learn from one another's experiences as well as to identify best practices on a wide range of issues (e.g., regulatory considerations, safety procedures, and liability questions). Dissemination of information would be enhanced by revitalization of the CSCAP Nuclear Transparency Website (www.cscap.nuctrans.org).

Some participants suggested that the NEEG include visits to facilities engaged in activities related to nuclear energy, notably the region's three centers of excellence. Another recommendation was that the NEEG should examine safety issues beyond nonproliferation and back-end questions and consider how countries are preparing their safety and security procedures and setting up the necessary organizations and agencies. Also key to the NEEG's work should be a discussion on the role of regional organizations and a detailed assessment of new regional initiatives such as ASEANTOM or the Asia Nuclear Safety Network.

Session 2: The Rationale for Nuclear Energy

Guo Xiaobing (*Institute of Contemporary International Relations, China*) focused on the rationale for China's nuclear energy development. He explained that in Oct. 2012, the State Council of China announced that the construction of new nuclear power plants, which had been suspended since the nuclear accident in Japan in March 2011, will resume. The State Council approved two plans: the National Plan for Nuclear Power Safety (2011-2020) and the National Plan for Nuclear Development (2011-2020).

China's installed nuclear power capacity is expected to grow from 12.54 GW to 40 GW by 2015, and some estimate that China's installed capacity of nuclear power will reach 70 GW with 10 GW under construction by 2020. China's ambitious nuclear energy development is linked to economic, environmental, and engineering considerations. China needs energy. Since 1979, GDP has grown at an annual average rate of 9.8 percent and its per capita energy consumption is just 84 percent of the world average. China considers nuclear power to be environmentally friendly and thus worth the investment; other energy sources such as coal, hydro, wind, biomass, and solar power all have their own problems and limitations. Nuclear power is the only new energy source that can be industrialized on a large scale in a safe and highly efficient manner. China is now able to independently design and engineer 1 million KW pressurized water reactor nuclear power plants and has also made breakthroughs in the R&D of high-temperature gas-cooled reactors and fast reactors. Significantly, Chinese nuclear power units in operation have never had accidents at level 2 or above, with major operating parameters reportedly better than the world average, with some even reaching advanced world level. After the Fukushima accident, China launched comprehensive and stringent safety inspections at all nuclear power plants, nuclear fuel cycle facilities,

and research reactors and the results demonstrated that nuclear and radiation safety are guaranteed in China.

Heigo Sato (*Takushoku University, Japan*) gave an overview of Japan's position on nuclear power. He described the pillars of Japan's Energy Policy and, in particular, the 2010 Strategic Energy Plan. In addition to the three fundamental principles of national energy policy (energy security, environmental conservation, and efficient supply), the Plan focuses on economic growth based on energy development and structural reform of the energy industry to combat global warming; nuclear power was considered to have a key role to play.

Prior to the Fukushima accident, Japan generated approximately 30 percent of its electrical power from nuclear reactors and it planned to increase this to approximately 40 percent, despite concerns about the ability of Japan's nuclear plants to withstand seismic activity. Since the Fukushima accident, however, a majority of Japanese now argue that they are anti-nuclear and do not trust government information on nuclear energy safety. As a result, Japan has closed numerous nuclear power plants or suspended operations for safety inspections. As of November 2012, only two units are in operation in Japan and there have been protests against maintaining them online.

In September 2012, Japan issued the Innovative Energy and Environment Strategy, which presents concrete policy targets such as "no nuclear power plants operating in the 2030s" and "no increase in the number of or extension/upgrade of existing nuclear power plants." To compensate, Japan intends to boost the power generation capacity of four primary renewable energy sources: offshore wind, geothermal, biomass, and tidal power. The hope is that all renewable energy sources, including solar energy, will be boosted from its current 10-percent level to a 25- to 35-percent level.

During the discussion, participants asked about the safety (and security) of Chinese nuclear power plants. One participant explained that the Koreans and the Japanese, in particular, are concerned by Chinese plans to shift nuclear sites from inland to coastal areas because should there be an accident (or incident), the winds would directly expose the Korean Peninsula and Japan to radioactive clouds. It was argued in response that China is compelled to set up nuclear power plants in coastal areas because they need water access, but China takes safety (and security) issues very seriously and abides by the highest international standards. The respondent also questioned the argument that winds would automatically expose the Korean Peninsula and Japan to radioactive clouds. Another key concern in China is repositories of spent fuel; experts are concerned that the spent fuel pools will reach capacity in the near future and creative solutions are needed to deal with this problem. Another important issue in China is public acceptance of the expansion of nuclear energy. Thus, the government has been trying to convince the public that the nuclear option is good for China.

Japan's stated desire to phase out nuclear power by 2030 while remaining silent about the future of its reprocessing facility raised concerns about Japanese long-term

intentions. Numerous participants wanted to know why Japan seems determined to bring its long-delayed Rokkasho reprocessing plant online in 2013, which could extract as much as eight tons of potentially weapons-usable plutonium from spent reactor fuel a year, adding to Japan's existing stockpile of 44 tons. It was explained that Japan initially designed its program on the assumption that it would have a closed nuclear fuel cycle and that it was difficult to change direction at this stage. The respondent stressed that Japan has no intention to develop nuclear weapons. Most participants still believed there was a disconnect between Japan's desire to eliminate nuclear energy and its intention to continue reprocessing; Tokyo needs to do a better job of explaining its rationale once final decisions are made regarding the future of nuclear energy in Japan.

Session 3: Overview of Nuclear Power Programs in the Asia-Pacific

Manpreet Sethi (*Centre for Air Power Studies, India*) focused on nuclear power in India. At present, India has 20 operational nuclear power plants and nuclear power represents 3 percent of total electricity generation. India has full fuel cycle capability, a mature nuclear industry, and trained manpower. By 2020, India aims to produce 20,000 MWe; by 2030, it aims to produce 63,000 MWe.

Although India was previously handicapped by international sanctions and isolation, preventing it to expand its nuclear program, its entry into international nuclear commerce in 2008 is helping it achieve its goals. It has signed nuclear cooperation agreements with 10 countries, for instance. Although the Fukushima accident was a major blow to public confidence in nuclear power, the government was quick to order safety assessments and make recommendations to enhance safety, improve regulatory oversight, and gear up emergency preparedness.

India considers nuclear power necessary because of its growing economy and population increase. There are significant limitations and problems associated with fossil fuels: oil and gas markets are volatile and there are environmental costs with thermal plants, for instance. Although renewable energies are promising avenues, there are limitations: the socio-environmental costs of large dams, the inadequacy of storage technologies for solar power, and the unreliability of wind/solar energy as a base load source. Thus, nuclear power is a mature, reliable, environmentally sustainable, and safe energy source.

There are a number of problems with developing nuclear power in India, however. Restoring public confidence is not going to be easy and nuclear liability issues remain to be resolved.

Arief Sasongko Adhi (*BATAN, Indonesia*) focused on recent nuclear power assessment activities in Indonesia. Indonesia's electricity demand will more than double by 2020, hence the need to invest in nuclear power. (At present, Indonesia is highly dependent on fossil fuel (95.21 percent), but made a commitment for a 26 to 41 percent reduction of greenhouse gases emissions by 2020.) The nuclear agency (BATAN) and regulatory

body (BAPETEN) have the responsibility to prepare and support the development of nuclear power plants.

Indonesia is conducting a nuclear infrastructure review. It has completed its feasibility study and is set to invite bids for the development of its first nuclear power plant. It is also conducting a nuclear energy system assessment (2012-2013) to identify gaps in the areas of the fuel cycle and potential national, regional, and international arrangements for the fuel cycle. Indonesia has committed to the highest nonproliferation standards.

During the discussion, several participants asked why India's nuclear power program seemed so ambitious. It was explained that India is growing so rapidly that New Delhi believes nuclear power should be a key element of the country's energy mix. In comparison to China, however, it is likely that India's nuclear energy development program will proceed at a slower pace because democratic institutions create checks and balances that do not exist in China.

Some participants asked whether Indonesia had made a decision about developing a closed nuclear fuel cycle. At this stage the plan is for interim storage of fuel, but there is no definitive solution. Some concern was expressed regarding Indonesia's capacity to do so in a safe and secure manner. One participant asked about developing a regional reprocessing- and enrichment-free zone, an idea originally offered at a CSCAP WMD Study Group meeting by an Indonesian national. While many participants seemed to agree that such a zone would in principle be good for the region, it was recognized that there was little momentum to support it and that it would take much work and patience to bring it into being.

Session 4: Nuclear Energy Development and the IAEA

Miles Pomper (*James Martin Center for Nonproliferation Studies*) explained that "newcomer states" can request assistance from the International Atomic Energy Agency (IAEA) to provide infrastructure planning and capacity building through all phases of a nuclear energy program. The IAEA also reviews the studies and processes conducted by the states (e.g., feasibility study review or draft nuclear law review) for adequacy and compliance with established standards. IAEA guidance is provided via general documents and publications. The IAEA also encourages "newcomer" states to adopt international instruments on nuclear safety, security, and nonproliferation. Finally, the IAEA conducts a range of technical cooperation projects with its member states: training courses and workshops, expert assistance, training fellowships, scientific visits, etc.

The IAEA, however, has no authority to make commercial decisions and can only provide recommendations based on nuclear infrastructure reviews. Moreover, although its role is not mandatory for nuclear energy development, IAEA Technical Cooperation Agreements are contingent on states signing Revised Supplementary Agreement with the IAEA and supplier cooperation is contingent on compliance with IAEA safeguards.

Hoang Anh Tuan (*Vietnam Nuclear Energy Agency*) focused on Vietnam's nuclear power plans. He began by stressing that electricity demand will increase substantially over the next 20 years and that nuclear power will have a share of Vietnam's energy mix. It is anticipated to account for 2.1 percent by 2020 and 10.1 percent by 2030.

In 2006, Vietnam developed a strategy for utilization of atomic energy for peaceful use. One year later, it issued a master plan to implement the strategy and, in 2010, it developed its Master Plan for the Peaceful Development and Utilization of Atomic Energy up to 2020. The goal of the strategy aims to put the first nuclear power unit into operation in 2020 while developing a sustainable infrastructure for the long-term nuclear power program. Since 2009, the IAEA has deemed Vietnam ready to commit to nuclear power. It is preparing for the implementation of the so-called Ninh Thuan nuclear power project, which will take place in collaboration with Russia and Japan. The first unit is scheduled to be commissioned in 2020 and the second one in 2021.

Vietnam is a party to the main nonproliferation treaties and conventions. It acceded to the Convention on Nuclear Safety (2010), the Convention on the Physical Protection of Nuclear Material (2012), and it ratified an Additional Protocol (2012) that it had signed with the IAEA two years prior. Vietnam is considering accession to the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management, the Vienna Convention on Civil Liability for Nuclear Damage, and the International Convention for the Suppression of Acts of Nuclear Terrorism.

After the Fukushima nuclear accident, Vietnam stuck with its decision to move forward with the Ninh Thuan Project, but gave significant priority to safety considerations. It also launched a National Project on Public Information and Communication for Nuclear Power (to run from 2012 to 2020) to inform the public about nuclear power and national policies on developing nuclear power.

During the discussion, participants asked whether the IAEA was an effective partner for everyone - big and small countries. Others asked whether there was a need for the IAEA or any other organization to provide assistance to develop nuclear energy programs. There was general agreement that the IAEA was very helpful, but it was also noted that states often need to also rely on additional experts and organizations because IAEA guidelines are too general and sometimes not very relevant to the specific needs of states. Thus, better coordination between the IAEA and these organizations and experts is necessary, particularly at the regional level.

When asked why Vietnam chose to work with two countries (Russia and Japan) to develop nuclear energy and how the Vietnamese experience was proceeding, it was explained that Vietnam opted to work with two countries to take advantage of very two different experiences, thereby enhancing its knowledge and options. Although Vietnam's nuclear energy program is proceeding well, one key issue is education and training: the government is investing to train more young people in nuclear science and engineering

(and seven people were recently sent to Russia for training), but this process is time-consuming.

Session 5: The Three S's: Safeguards, Safety, and Security

Robert Finch (*Sandia National Laboratories*) began his presentation by explaining the differences between nuclear safety, nuclear security, and nuclear safeguards (the three s's). While nuclear safety refers to the operating conditions resulting in the protection of workers, the public, and the environment from undue radiological hazards (and includes the prevention of accidents and consequence mitigation), nuclear security is the prevention and detection of, and response to sabotage, unauthorized access, or other malicious acts involving nuclear material, other radioactive substances or their associated facilities. Finally, nuclear safeguards refer to the prevention and detection of theft or diversion of special nuclear material from civilian facilities through the use of material control and accountancy.

Increasingly, there has been a move toward integration of the three s's because many of the processes at play in each are similar. The goal has been to increase synergism and efficiencies wherever possible. The main elements of a safe, secure, reliable, and responsible civilian nuclear energy program include administrative and maintenance procedures, emergency response, a range of engineering and technical services, and operations and training.

Jor-Shan Choi (*Tokyo Institute of Technology*) gave more details on how the three s's interact, even though each has different goals: nuclear safety aims to prevent accidents, nuclear security to prevent terrorism, and nuclear safeguards to prevent proliferation. He explained the achievements of the 2010 Washington and 2012 Seoul Nuclear Security summits. While the former focused on securing nuclear materials and preventing illicit nuclear trafficking and nuclear terrorism, the latter focused on the security and safety of nuclear facilities, and the security of radiological sources. In the Asia-Pacific, although compliance with the nuclear safety, security, and safeguards regimes has improved over the years, work remains to be done, especially in ASEAN countries such as Myanmar, for instance.

The landscape of nuclear power development is changing considerably. Originally, the largest markets were in the United States and Europe. They were dominated by Western suppliers, consisted largely of commercial transactions, and the security environment was relatively benign. The import/export of nuclear power was dictated by US 123 agreements and recipient countries had no choice on back-end fuel-cycle services. Today, however, the largest markets are in Asia. They are dominated by Asian suppliers and there is increasing government involvement in sales and export promotion. In addition, in the aftermath of 9/11, the security environment has become increasingly challenging and the influence of traditional nonproliferation policy has been in decline. It is not clear whether newcomer countries will be offered packaged back-end fuel-cycle services (including take-back).

During the discussion, several participants explained that the nuclear safeguards system has proved its worth in detecting (and deterring) proliferation. Although much remains to be done to further strengthen it, the key issues today are to bring nuclear safety and nuclear security into the fold, and to appreciate and enhance the interface between them. One participant stressed that it was particularly suitable to think about the three s's for "newcomers" to nuclear energy.

Several issues associated with the interaction between nuclear safeguards, nuclear safety, and nuclear security were discussed. It is relatively easy to "sell" nuclear safety because it is a concern for everyone, notably since the Fukushima nuclear accident (although not everyone agrees on standards). Nuclear safeguards, however, are more difficult to sell because, as one participant put it, "it is like telling the police what you are doing in your own house." This creates problems when the goal is to think about safeguards, safety, and security as a whole. Another challenge is to make sure that the nonproliferation community (in charge of safeguards) works in coordination with nuclear operators (tasked with maintaining safety) and law enforcement bodies (dealing with security), hence the need to create forums such as the NEEG to encourage cooperation at the regional level. Finally, several participants wondered whether adherence to the nuclear nonproliferation, safety, and security regimes was sufficient to guard against any danger, or if something else was needed. It appeared to everyone that in this field as in many others, there could not be any silver bullet.

A discussion followed about the nuclear fuel cycle. One participant suggested that fuel access was key, making control of the fuel cycle a necessity, i.e. the development of indigenous enrichment and reprocessing technologies. Another participant countered by arguing that fuel access was important, but that states had more than just two choices ("haves" and "have nots"). They can make targeted investments, notably, to ensure sustained access to fuel. Many countries around the world do not have oil supplies and have developed strategies to ensure that they receive the oil they need. More importantly, the problem is that enrichment and reprocessing technologies present important security issues and are not economical.

Session 6: Nuclear Energy and Asia-Pacific Regional Organizations

Kazuko Hamada (*Japan Atomic Energy Agency*) focused on Asia-Pacific regional initiatives and their role in enhancing the nuclear nonproliferation regime. She began by focusing on the Asia-Pacific Safeguards Network (APSN) and the Nuclear Security and Safeguards Project under the Forum for Nuclear Cooperation in Asia (FNCA). Influenced by the European Safeguards Research and Development Association, the APSN is an informal network of safeguards authorities, ministries, and other government-affiliated organizations responsible for implementing safeguards in 17 countries in the Asia-Pacific (Australia, Bangladesh, Canada, China, Indonesia, Japan, South Korea, Laos, Malaysia, Mongolia, New Zealand, Philippines, Russia, Singapore, Thailand, United States, and Vietnam). It aims to improve the quality, effectiveness, and efficiency of safeguards implementation in the region by enhancing safeguards,

infrastructure implementation and awareness raising, capacity building, IT support, and safeguards legislation.

The FNCA is a Japan-led cooperation framework for the peaceful use of nuclear technology in Asia. It consists of meetings, including a ministerial level meeting, and activities with the participation of 12 member countries (Australia, Bangladesh, China, Indonesia, Japan, Kazakhstan, South Korea, Malaysia, Mongolia, Philippines, Thailand, and Vietnam). The objective of the FNCA Nuclear Security and Safeguards Project is to share experience, knowledge, and information on nuclear security and safeguards implementation, including human resource development and R&D, and to enable participating countries to exchange views on policy, strategy, and framework on nuclear security and safeguards in an attempt to raise awareness, facilitate information sharing, and enhance nuclear security and safeguards regimes.

In the Asia-Pacific, there are a number of international training centers and other capacity building support programs: Japan's Integrated Support Center for Nuclear Nonproliferation and Nuclear Security (ISCN), which operates under the Japan Atomic Energy Agency (JAEA); the US Department of Energy's International Nuclear Safeguards and Engagement Program (INSEP); South Korea's International Nuclear Security Academy (INSA); and China's State Nuclear Security Technology Center. While JAEA is tasked to mobilize technological expertise to support not only the peaceful use of nuclear energy, but also the enhancement of nuclear nonproliferation and security, ISCN leads Japan's efforts to enhance nuclear nonproliferation and security regimes worldwide. INSEP, for its part, collaborates with partners to strengthen domestic and international safeguards at all stages of nuclear development. INSA will operate as a center of excellence for education and training in nuclear security, nonproliferation, and export and import controls. And China's State Nuclear Security Technology Center will provide analysis and measurement of nuclear material, conduct performance testing of the nuclear security system and equipment, and evaluate the nuclear material control and accounting system and nuclear security response forces.

Looking at the prospect for the enhancement of nuclear nonproliferation in the region, there is an opportunity to bring about synergistic effects among existing initiatives by increasing knowledge-sharing for capacity building, supplementing efforts through extended topics to be covered, providing optimal mechanisms to avoid duplication, and achieving a ripple effect in facilitating capacity building efforts.

During the discussion, participants asked for additional details about FNCA. Run by the Japanese Ministry of Education, Culture, Sports, Science, & Technology, FNCA is restricted to Asian organizations. It consists of several levels' meetings, including working-level, senior-level, and ministerial-level.

A conversation followed about possible duplication of efforts between FNCA and APSN. Little thinking has been given to consolidating activities between these two organizations (and others). Harmonizing the work of regional organizations dealing with

nuclear energy issues is yet to be done; it was only recently added to these organizations' agendas.

Participants also reiterated the need to explore the work done by the region's three centers of excellence and to examine the activities conducted in the Asia-Pacific region by the EU CBRN Centres of Excellence. One participant explained that the EU CBRN Centres have been particularly active in Thailand and that it would be helpful to obtain more information about their activities and achievements. Another participant stressed that it would be helpful for regional actors to study the textbooks developed by the World Institute for Nuclear Security and to explore how this work can be used at the regional level. Another participant stressed that there are definitional issues because in the Chinese language, for instance, there is no difference between the word "safety" and the word "security". Thus, it would be helpful to engage regional actors on key nuclear energy definitions.

Session 7: Wrap-Up and Future Plans for the NEEG

Ralph Cossa (*Pacific Forum CSIS*) and Carl Baker (*Pacific Forum CSIS*) concluded the meeting by stressing that the NEEG should seize opportunities for partnering with other similar initiatives (such as the project "The Global Nuclear Future" run by the American Academy of Arts and Sciences, for instance) and create synergy among regional organizations and activities. It should also review the applicability of the regimes related to nuclear safeguards, safety, and security, and work in close collaboration with the region's three centers of excellence.

Participants recommended that more work should be undertaken on the three s's, particularly to assess how to appreciate and operationalize them in a holistic perspective; one participant suggested that the NEEG create a niche for itself in this domain. Other participants suggested examining how other regions manage nuclear power; NEEG could then draw lessons for the Asia-Pacific. Finally, many participants argued that it was critical for the NEEG to reach out to industry; particularly helpful would be to reach out to the World Institute for Nuclear Security, which provides a forum for discussion among nuclear industries and operators.

Key Findings

1. Reconvening of the NEEG at this time is particularly appropriate in view of the so-called "nuclear renaissance" in Asia. With several countries in the region in the process of developing energy alternatives that include nuclear power and others (save Japan) seemingly intent on expanding their nuclear energy programs despite the concerns raised by the March 11, 2011 Fukushima tragedy, greater transparency and confidence-building measures appear vital.
2. The core goal of the NEEG is to serve as a multilateral forum to discuss methods and processes to develop and manage nuclear energy programs in a safe, secure, and proliferation-resistant manner. It is neither pro- nor anti-nuclear energy *per se*.
3. The NEEG will examine and develop recommendations on how both states and regional organizations and initiatives can assist Asian states in ensuring the safe, secure, and proliferation-resistant development and management of nuclear power programs.
4. Given that Southeast Asian states are "newcomers" to nuclear energy, it would be particularly beneficial to focus on enhancing regional cooperation within ASEAN.
5. NEEG analysis and activities will include a mix of country-specific presentations on various aspects of indigenous nuclear programs or plans as well as issue-specific presentations on key elements of nuclear energy programs and/or the nuclear nonproliferation, safety, and security regimes. Practical exercises, such as action-focused scenarios or simulations, could also enhance mutual understanding and encourage regional cooperation and preparedness in response to nuclear incidents or accidents.
6. Topics for discussion could include regional approaches toward data sharing, spent fuel storage and disposal, the creation of Reprocessing- and Enrichment-Free Zones, among others.
7. Japan's stated desire to phase out nuclear power by 2030 while remaining silent about the future of its reprocessing facility has raised concerns in the region about Japanese long-term intentions that need to be more adequately addressed.
8. While the IAEA is a key actor in assisting states to develop and manage nuclear power programs, states often need to rely on additional experts and organizations.
9. Nuclear safeguards, nuclear safety, and nuclear security have come to be viewed as inseparable. Notably, this has meant that the nonproliferation community (in charge of safeguards) increasingly needs to work in coordination with nuclear operators (tasked with maintaining safety) and law enforcement bodies (dealing with security).

10. There is a renewed appreciation of the need for adherence to the highest standards of nuclear safety and security in the wake of the Fukushima Daiichi nuclear plant accident in Japan. While the 3/11 disaster has raised awareness and resulted in reassessments region-wide, widespread concerns remain about nuclear safety and security both within and among Asia-Pacific nations.

11. The NEEG will enable its members to learn from one another's experiences as well as to identify good practices on a wide range of issues (regulatory considerations, safety procedures, liability questions, notably). Dissemination of information would be enhanced by revitalization of the CSCAP Nuclear Transparency Web Site.

12. Effective management of a national nuclear power program is critical and the role of the IAEA as a reviewer remains central. Also important is the thorough integration of strategic trade controls and nuclear security with program development and the role of regional organizations. Better integration of track-I and track-II activities can considerably help facilitate these processes.

13. Looking ahead, the NEEG should seize opportunities for partnering with other initiatives to help create synergy among regional organizations and activities. It should also review the applicability of the regimes related to nuclear safeguards, safety, and security, and work in close collaboration with the existing centers of excellence.

14. Visits to facilities engaged in activities related to nuclear energy, including the region's three centers of excellence, should be part of NEEG activities.