

CO-CHAIRS' SUMMARY REPORT

The second¹ ASEM Seminar on Nuclear Safety was held in Vilnius (Lithuania) on 4-5 November 2013. The overall theme – International Instruments for Ensuring Nuclear Safety – was chosen to strengthen the awareness of available international instruments and reflect the need to develop nuclear projects with due responsibility and respect to the highest international safety standards. Participants included representatives from national governments, nuclear regulators, energy companies, radiation protection and nuclear safety authorities, training and research institutions and universities, as well as the European Commission, the International Atomic Energy Agency (IAEA), OECD Nuclear Energy Agency (NEA) and World Association of Nuclear Operators (WANO). In addition, the Aarhus Convention Compliance Committee and the Espoo Convention Implementation Committee were represented.

The Seminar was co-chaired by Mr Romas ŠVEDAS, Lecturer at Institute of International Relations and Political Science of Vilnius University, and former Vice-minister of Energy of Lithuania; Ms Tomiko ICHIKAWA, Minister of Permanent Mission of Japan to the International Organizations in Vienna; Mr RYU Yong-ho, Chief Technical Adviser at Korea Institute of Nuclear Safety (KINS); Mr LUI Pao Chuen, Scientific Advisor of the Ministry of Foreign Affairs of Singapore; Mike WEIGHTMAN, member of the International Nuclear Safety Group (INSAG) and former HM Chief Inspector of Nuclear Installations and Head of Office for Nuclear Regulation (ONR) of United Kingdom; Jerzy JENDROŚKA, President of Environmental Law Center in Wrocław and Director of European Environmental Law Post-Graduate Studies at Opole University, Poland; and Peter FAROSS, former Acting Deputy Director-General of Directorate-General for Energy at the European Commission.

OPENING SESSION

The Seminar was opened by **Mr Rolandas KRIŠČIŪNAS**, Vice-minister of Foreign Affairs of Lithuania, who chaired the opening session. Extending a warm welcome to the Seminar participants, he noted that there was no division into Asia and Europe while addressing nuclear safety, as it was a global issue. Therefore all countries developing nuclear energy shared the responsibility to protect the environment and population. He pointed out that ASEM seminars provided an excellent platform to share the experience and lessons learnt.

HE Dalia GRYBAUSKAITĖ, President of the Republic of Lithuania, emphasized that nuclear energy could be an effective and environmentally friendly source of energy. As nuclear safety was, by definition, a global challenge, it was a common responsibility to bring nuclear power production in the world into compliance with the highest international safety standards. Although each country was free to decide on its national energy mix, it should consider possible implications to the region and immediate neighbours. The President noted that Lithuania encouraged a regional approach to nuclear power development as this type of energy was effective enough to meet the needs of entire regions. She praised the IAEA role in setting the most robust nuclear safety standards and encouraged close cooperation among all member states for implementing the IAEA Action Plan on Nuclear Safety. The President pointed out that the EU nuclear stress tests could be seen as a global

¹ Singapore hosted the first ASEM Seminar on Nuclear Safety on 13-15 June 2012 focussing on national, regional and international nuclear emergency preparedness and response

benchmark and contribute to the IAEA's Action Plan after a memorandum of understanding on nuclear safety was signed between the EU and the IAEA on 17 September.

The opening remarks by **Mr Linas LINKEVIČIUS**, Minister of Foreign Affairs of Lithuania, were read out in his absence. He noted that during her Presidency of the Council of the EU, Lithuania was seeking two key objectives – completing the internal EU energy market by 2014 and strengthening the external dimension of the EU energy policy. In this regard, Lithuania took the initiative of hosting the second ASEM Seminar on Nuclear Safety believing that it would foster the Asia-Europe cooperation in this field. The Minister pointed out that nuclear energy was likely to remain an important part of energy mix worldwide, therefore nuclear safety standards and conventions should be strengthened and implemented as legally binding regulation. In addition, importance of dialogue between neighbouring countries on application of international conventions was highlighted, as a win-win situation would not be possible without mutual willingness to cooperate. Nuclear energy must not lose its credibility as then its contribution to energy security would be lost, too. He expressed confidence that the Seminar would contribute to the ongoing discussions globally about strengthening the international instruments for ensuring nuclear safety.

Mr Denis FLORY, Deputy Director General for Nuclear Safety and Security of the IAEA, noted that already at the first ASEM seminar in Singapore it was agreed that nuclear energy should be developed responsibly. He identified the legal instruments helping to create responsible and safe nuclear community. Effectiveness and transparency were also essential to reach this goal. On the other hand, any conventions and legal instruments could not cover all nuclear safety issues. Therefore nuclear safety challenges should be met by responsible and comprehensive approach of all countries and international stakeholders.

Ms Vanessa CHAN, Director General of International Organizations at the Ministry of Foreign Affairs of Singapore, underlined the importance of both the international legal framework and the existing norms forming fundamental building blocks of the international nuclear safety regime. As nuclear accidents do not recognize national boundaries, stagnation and ambivalence in nuclear safety field was intolerable. Obedience to and strict implementation of the Conventions was essential. Even non-binding instruments such as the IAEA Action Plan on Nuclear Safety were vital to collective ability in ensuring nuclear safety and emergency response. She maintained that this was the area where regional and international cooperation played a critical role.

In his keynote address, **Mr Günther H. OETTINGER**, European Commissioner for Energy, emphasized that nuclear safety was a global issue, therefore common efforts were needed. The European Commission has initiated the stress-tests exercise that should improve the nuclear safety in the whole region. The EU has also invited its neighbouring countries to take part in this exercise feeling the need to promote the principles of nuclear safety beyond the EU borders. Mr Oettinger noted that the MoU between the EU and the IAEA has been signed recently. Also, the Commission has initiated the amendments of the safety Directive in this field. The importance of regional cooperation was also emphasized. Nuclear safety should be a global concern because everybody could be affected by unexpected external hazards.

The second keynote address was delivered by **Mr Denis FLORY**, Deputy Director General for Nuclear Safety and Security of the IAEA. He emphasized the IAEA safety standards that were vital in strengthening global nuclear safety. Mr Flory introduced the Operational Safety Review Team (OSART) mission that has been initiated in order to combine and improve both human and

organizational aspects on nuclear safety. Noting that only 12 countries had hosted the mission since 2011, Mr Flory encouraged all member states to follow suit. On the other hand, he pointed out that the demand for Integrated Regulatory Review Service (IRRS) has risen. This was due to serious investment from Member States illustrating the collective international responsibility in strengthening nuclear safety worldwide. He gave an overview of measures to enhance the effectiveness of the Convention on Nuclear Safety and noted the relationship between nuclear safety and nuclear security. Mr Flory concluded that nuclear safety was inseparable from nuclear security as both led to the same ultimate goal of protecting people, society and environment.

PART 1

ESTABLISHMENT OF NUCLEAR POWER INFRASTRUCTURE FOR NEW NUCLEAR POWER PLANTS

SESSION 1

NATIONAL DECISIONS AND RESPONSIBILITIES IN NUCLEAR ENERGY DEVELOPMENT

Mr Kazuo SHIMOMURA, Deputy Director for Safety and Regulation, OECD Nuclear Energy Agency (NEA), gave a brief overview of essential measures and initiatives of the NEA's committees taken after the Fukushima Daiichi NPP accident. In order to enhance nuclear safety, a *Defence-in-Depth* (DiD) workshop, a series of technical opinion papers, status reports, new expert groups etc. were initiated. Besides, special attention was called at NEA Report *The Fukushima Daiichi Nuclear Power Plant Accident: OECD/NEA Nuclear Safety Response and Lessons Learnt* highlighting the issues of assurance of safety, the importance of human and organizational factors, role of communication and international cooperation during crisis etc. In addition, Multinational Design Evaluation Programme (MDEP) was presented as the unique programme of the NEA that will ensure the convergence of regulatory requirements.

Ms Elena BUGLOVA, Head of Incident and Emergency Centre of the IAEA, introduced the International Framework for Emergency Preparedness and Response (EPR) that was based on specific elements, such as legal instruments, safety standards, tools, protocols and operational arrangements. From the practical point of view, the Incident and Emergency Centre was the focal point for nuclear and radiological safety or security related emergencies, as well as the global centre for coordination of international emergency preparedness and response assistance. In addition, the roles and responsibilities in emergency response and their main principles were also presented. However, implementation of these principles requires specific tools such as RANET (Response and Assistance Network) covering a wide range of response and assistance capabilities, e.g. nuclear power reactor design advice, its accident analysis, research reactor assessment and advice etc. Ms Buglova noted that the continued success of RANET depends on additional registered capabilities, balanced regional distribution and preparedness to respond in a timely manner. Ms Buglova concluded that the success of RANET depended on all international players participating in this process.

Mr Pal VINCZE, Head of Nuclear Power Engineering Section of the IAEA, focused on the IAEA's support to countries starting nuclear programmes. He noted that Fukushima accident has not discouraged the newcomers from development of nuclear energy for the following reasons: strife for energy independence, volatile fossil fuel prices, climate change issues, increased demand

for energy etc. However, there were plenty of decisive aspects for the development of a national infrastructure for nuclear power: national position, nuclear safety issues, funding and financing, legislative framework, radiation protection, electrical grids, site and supporting facilities, environmental protection, emergency planning, nuclear fuel cycle, radioactive waste etc. Besides, coordination between institutions was essential. Mr Vincze gave an overview of the IAEA's support and assistance to countries embarking on new nuclear power programmes.

Mr NGUYEN Thiep, Resident Representative of Vietnam to the IAEA in Vienna, gave an overview of safety infrastructure development for Vietnam's nuclear power program with the emphasize on legal and regulatory framework, regulatory body, human resource development, nuclear international conventions participation, technical supported capacity building, education and training. In 2006, the Government approved the strategy for peaceful utilization of atomic energy up to 2020, followed by adoption of the Master Plan for nuclear power development in the country with the total capacity of 10,700.00 MW in 2030. The Law on Atomic Energy was passed in 2008, and in 2009 the pre-feasibility study on construction of the first NPPs with the capacity of 4000 MW was approved by National Assembly. Now the Ninh Thuan 1 and Ninh Thuan 2 NPPs with 2 units of 1,000 MW each to be built by Russia and Japan and put into operation by 2020-2021 are being prepared. Mr Nguyen noted that Vietnam Agency for Radiation and Nuclear Safety (VARANS) has not yet met the requirements for an effective independent and competence regulatory body and consequently has not been fully authorized to license and inspect nuclear power plants. However, the project for developing an effectively independent and competence regulatory body of Viet Nam was ongoing. In addition, another project for developing a national emergency preparedness and response plan was being carried out as well.

Discussion

It was noted that after the Fukushima accident, a few more states (e.g. Germany, UK, Canada) have registered their capabilities in RANET. It was also noted that the IAEA's response to the Fukushima accident was already discussed at several meetings and conferences, and the IAEA Comprehensive Report on Fukushima accident will provide another reference to the topic. In discussing the extended mandate of the IAEA in response to the emergency at a NPP, as defined in the IAEA's Action Plan on Nuclear Safety, it was stressed that political willingness and openness of countries was necessary to ensure effective cooperation with the IAEA.

SESSION 2

TRAINING LEADERSHIP-LEVEL PROFESSIONALS IN NUCLEAR ENERGY

Mr Masahiko FUJIHARA, Deputy Director General for International Energy Policy of the Ministry of Trade and Industry of Japan, outlined the issues of Japanese activities in the field of human resource development. Securing safety was an overriding imperative in nuclear safety, therefore it was vital to maintain high-level human resources that could support it. Accordingly, human resources and capacity building required comprehensive and long-term strategy, in particular in the field of education, training and international cooperation. Mr Fujihara assured the meeting that Japan was ready to share its broad experience in human resource development.

Mr Mike WEIGHTMAN, a member of the International Nuclear Safety Group (INSAG), considered the concept of nuclear leadership in his presentation. He argued that leadership was the

key in developing nuclear institutions, culture and values. Consequently, it was essential in all three institutional nuclear safety barriers: industry, regulators and stakeholders. Mr Weightman concluded that nuclear leadership was vital to the continued safe and responsible use of nuclear energy to benefit society.

Mr Didier LOUVAT, Managing Director of European Nuclear Safety Training and Tutoring Institute (ENSTTI), introduced the different European projects under development in the field of training and tutoring on assessment in nuclear security, nuclear safety and radiation protection. He outlined a large spectrum of projects, training schemes and programmes aimed at sharing and growing nuclear safety culture. This will serve the purpose of harmonization and qualification of curriculum aiming to transfer expert know-how to professionals from Regulatory Bodies and Technical safety Organisations in the European Union.

Dr PARK Goon-cherl, President of KEPCO International Nuclear Graduate School (KINGS) in South Korea, gave an overview of the development of nuclear energy in Korea and nuclear policy trends in the world after the Fukushima accident. Most of the leading countries in nuclear energy development either maintained expansion policy (France, Russia, USA, Korea, China, India etc.) or promoted construction of new NPPs (Brazil, United Kingdom, Chile, Poland). In the meanwhile, both Germany and Switzerland decided to suspend nuclear energy development. He also highlighted the importance of responsible development of nuclear industry in Korea emphasizing the need for professional leaders and higher qualified technology in the development of nuclear human resources. Dr Park argued that KINGS was a leading organization in nuclear energy field because of its comprehensive approach towards nuclear engineering, project and human resources management.

Ms Vesselina RANGUELOVA, Head of Nuclear Safety and Security Coordination Unit of the Joint Research Centre (JRC) of the European Commission, presented the wide scope of activities of the JRC Euroatom Research Programme. It covers safety of nuclear reactors, safety of nuclear fuel and fuel cycle, emergency preparedness and environmental radioactivity monitoring, nuclear safeguards and security, basic research, waste management and decommissioning, knowledge management and education. She noted that the JRC was also strongly involved in the European nuclear scientific networks and coordinates the work of several of such networks, eg: EU Clearinghouse on the NPP Operational Experience Feedback, EURDEP – European Radiological Data Exchange Platform, etc. Ms Rangelova also emphasized the importance of the Euroatom Treaty as an example of a regional framework for nuclear safety and safeguards, research and education. She noted that the scientific networking is the most efficient way of using the available expertise and competence for development of common science based approaches to safety at regional level and beyond. While not being a legal instrument scientific networking has great potential to promote higher safety worldwide and transfer of know-how.

Discussion

There was an agreement that training courses were essential not only for the operators and nuclear experts but also for less skilled labour force. Besides, concern was raised with regard to countries which might not obey the safety standards. The reasons for non-obedience might lie in cultural differences and lack of a nuclear safety culture. This could be solved by focusing on improving the skills of labour force. A country providing training for experts should be responsible for the training quality. In addition, training of the workforce was essential at every level. Countries that were

developing nuclear projects should take care of safety skills and practical measures to ensure nuclear safety. Nevertheless, it was not enough to teach the basics; the common understanding of nuclear safety culture should be nurtured. The exchange of information and sharing of experience was shown to be an effective way to promote safety culture and should be further encouraged.

SESSION 3

ROLES AND RESPONSIBILITIES OF OPERATOR AND REGULATOR

Mr S. DURAISAMY, Vice Chairman of Atomic Energy Regulatory Board of India, focused on safety regulation of nuclear power plants by presenting different safety review mechanisms and India's experience in this field. Periodic safety reviews were maintained to compare with the current requirements, address issues of ageing and equipment qualification, revisit safety analysis and reassess aspects related to external events. In addition, special safety reviews were carried out after major events such as Narora Fire incident in 1993, Tsunami at Kalpakkam in 2004, Fukushima Accident in 2011 etc., resulting in safety enhancements. Besides, three major international nuclear accidents – Three Mile Island, Chernobyl and Fukushima – reshaped the regulatory approach toward nuclear safety. In particular, the Fukushima Daiichi accident became the milestone for more determined actions taken by international organizations and national governments to strengthen the global safety regime. Although there were still some challenges in review of new design, he concluded that continuous improvement of effectiveness and efficiency of regulatory mechanism would strengthen public confidence in regulatory systems.

Mr Jukka LAAKSONEN, Vice President of the Rusatom Overseas, emphasized the particular shift of nuclear safety standards towards more progressive ones. It led to the development of Generation III nuclear power plants. He noted that Russia has recently designed the Generation III NPP's in parallel with the global development of the nuclear safety principles. Mr Laaksonen suggested that the new Russian safety regulations covered all the IAEA requirements, and that "stress tests" have also been conducted in Russia. He pointed out that while there was no general definition of a Generation III NPP, however, several characteristics emphasizing improved assurance of primary circuit integrity for the extended lifetime, strengthened protection against external hazards, digital control and protection systems etc. could be suggested. In this regard, he introduced the improved VVER-1200 plants.

Mr Masahiro AOKI, Director of International Affairs Division, Nuclear Regulation Authority (NRA) of Japan, shared Japanese experience on the lessons learned from Fukushima Accident. the NRA was established with two main principles: independence (clear separation of regulation from promotion – independent Commission) and integration ("3 S": safety, security, safeguards – integrated regulatory functions). Besides, new regulatory requirements for nuclear power were introduced to strengthen design basis, severe accident and natural disasters measures etc. He also underlined the importance of international multilateral and bilateral cooperation.

Mr Michail DEMČENKO, Head of State Nuclear Power Safety Inspectorate (VATESI) of Lithuania, presented the main priorities of VATESI. He noted the decommissioning process of Ignalina NPP. Although the decision on new nuclear power plant had to be made yet, preparation of new nuclear safety regulations were already in progress. Lithuania has developed an effective nuclear power safety regulation system capable to cope with modern regulatory tasks.

Mr Jacques REGALDO, Chairman of World Association of Nuclear Operators (WANO), pointed out that WANO mission was to maximize the safety and reliability of nuclear power plants worldwide. He spoke on lessons learnt from the Fukushima accident emphasizing the importance of making site reviews more frequent, continuous design improvement process, emergency preparedness, spent fuel storage etc. International and coordinated cooperation with international and local organizations (IAEA, NEA, INPO, INRA, ENSREG etc.) was essential to ensure nuclear safety.

Discussion

The issue of society's participation was touched upon. It was noted that regulatory mechanisms were being steadily improved to encourage people to participate in nuclear safety process.

WANO's plan of introducing the assessment ranking in around 2015 aroused certain interest in relation to its transparency. As WANO could be seen as an internal regulator, due to the delicate nature of ranking process, its results would be considered confidential. WANO's aim was to identify the weakest links and eliminate them. It was noted that although most of WANO's reports were not public, some companies discussed their findings and weaknesses openly.

PART 2

COMPREHENSIVE SITE SELECTION AND EVALUATION FOR A NUCLEAR POWER PLANT

SESSION 4

Mr Jehad HADDAD, Safety Officer at the International Seismic Safety Centre (ISSC) of the IAEA, presented the leading role of the ISSC in developing and maintaining international safety standards, assisting Member States in site evaluation, providing Peer Review Services and capacity building. The activity of the ISSC is based on highly developed external event notification system which enables to forecast and monitor natural and human-induced external and internal hazards. In addition, Mr Haddad presented Site and External Events Design (SEED) Review which focused on site and design related services under strict compliance with the IAEA Safety Standards.

Mr Herkko PLIT, Deputy Director General of the Ministry of Employment and the Economy of Finland, presented the development of nuclear power plants in Finland and licensing procedure on Finnish nuclear power facilities. He described a public hearing event arranged by the Finnish Government on 17 October 2013 on Fennovoima's NPP. Mr Plit emphasized the importance of siting and EIA phases of a NPP project and its licensing. As well, he underscored the international conventions and requirements as vital for national nuclear legislation.

Mr As Natio LASMAN, Chairman of Indonesian Nuclear Energy Regulatory Agency (BAPETEN), presented the Indonesian nuclear energy sector highlighting its developed legislation system which has been improved steadily. He argued that after the Fukushima accident certain efforts should have been made to increase responsible development of nuclear energy. In Indonesia, some regulations were revised, paying extra attention to external hazards, e.g. seismicity effects.

Discussion

The IAEA's margin assessment issue was raised. The comprehensive analysis referred to the appropriateness of the methodology. In addition, it should tackle the sensitive issues and recommend problem solving measures.

It was noted that the Fukushima accident was a man-made error that had an adverse impact on public confidence. Therefore the necessity to evaluate periodically the older operating NPPs by IRRS and other review missions, especially in life extension cases, was underscored.

Besides, the IAEA's SEED mission logic was clarified. SEED missions were based on three levels: technical, administrative and practical. This was essential for the IAEA to identify the existing problems of an NPP. In this regard, missions might be beneficial in preventing such accidents as the one in Fukushima. The IAEA was encouraging the SEED missions, however, countries themselves were responsible for inviting this mission. It was noted that any request by a country to invite the SEED mission to a third country was not acceptable by the IAEA. Responsibility of national regulators was highlighted.

The issues of the environmental impact assessment and public hearing were also discussed. Finland emphasized that Espoo convention was of key importance in maintaining the discussion between neighbouring countries on sensitive issues such as new NPPs. It was noted that in order to maintain the acceptance of the public, continual sharing of the information and cooperation was necessary. Finland shared its experience in consulting other states interested in the development of the nuclear projects.

PART 3

INTERNATIONAL INSTRUMENTS FACILITATING IMPLEMENTATION OF NUCLEAR ENERGY PROJECTS IN COMPLIANCE WITH INTERNATIONAL STANDARDS

SESSION 5

EU NUCLEAR SAFETY FRAMEWORK AND INTERNATIONAL COOPERATION

Mr Massimo GARRIBBA, Acting Director for Nuclear Energy and Fuel Cycle, Directorate-General for Energy of the European Commission, overviewed the revision process of the EU Nuclear Safety Framework. He noted that nuclear energy provided nearly 30% of electricity in the EU and ensured reliable electricity supply together with network stability. In this regard, developing the EU legal framework in order to meet the highest standards of safety, security and non-proliferation, and stimulating an open debate and cooperation with stakeholders was essential. Through cooperation under the Instrument for Nuclear Safety Cooperation (INSC), the EU contributed to the improvement of nuclear safety levels and efficient and effective nuclear safeguards in the third countries. After the Fukushima accident the EU legal and regulatory framework was reviewed resulting in the proposal to amend the 2009 Safety Directive, learning from the "stress test" initiative and introducing nuclear safety objectives, topical peer reviews and EU-wide harmonized nuclear safety guidelines. The draft Directive was being discussed in the EU member states.

Mr Philippe JAMET, Chair of the European Nuclear Safety Regulators Group (ENSREG) task force, pointed out that there were two types of general European safety organizations: ENSREG, combining all European Regulators and the European Commission; and Western European Nuclear Regulators Association (WENRA), a private club of nuclear regulators. After the Fukushima accident the European Council requested the European Commission, ENSREG and WENRA to develop stress tests. ENSREG approved the final reports of peer review on 26 April 2012 resulting in final conclusions and recommendations at the European level. In addition, Mr Jamet highlighted the necessity to re-evaluate natural hazards at least every 10 years through a periodic review process. He noted that, although dealing with off-site emergency preparedness was not part of the mandate of the peer review, there was a strong demand from some stakeholder organizations to make it part of a similar process. Mr Jamet concluded that stress tests, action plans and peer reviews resulted in suggestions, recommendations and actions plans focused on preliminary lessons learnt from the Fukushima accident. Besides, they ensured the implementation of tangible measures in order to improve safety of the European NPPs.

Mr José MOTA, Programme Manager - EU policies, Instrument for Stability, Nuclear Safety, Directorate-General for Development and Cooperation – Europe Aid of the European Commission, presented the EU instruments for nuclear safety cooperation. He noted that nuclear accidents have highlighted the need for improvement in design and operational safety, emergency preparedness, responsible waste management, decommissioning and restoration of legacy sites and safeguards of nuclear materials. Mr Mota explained the wide spectrum of the EU response instruments to strengthen nuclear safety: TACIS Nuclear Safety Programme; PHARE Nuclear Safety Programme; and Instrument for Nuclear Safety Cooperation (INSC) under which nuclear safety cooperation was extended globally to non-EU countries. He elaborated further on Instrument for Stability targeted at, among others, fighting against illicit trafficking of chemical, biological, radiological and nuclear (CBRN) materials (border control programme), reinforcing export control of dual-use goods and improving capabilities against CBRN threats (eight EU Centres of Excellence in Morocco, Algeria, Jordan, Georgia, Philippines, Kenya, United Arab Emirates and Uzbekistan).

Discussion

A review on the origin of stress test process was made, emphasizing that the political decisions were extremely important. Politicians wanted the results as soon as possible, with all possible threats covered and in maximum transparency. However, this would have made the process almost impossible to implement according to the schedule imposed by the leaders of the EU member states. Therefore the number of tasks had to be limited. For the sake of transparency and independence, the process was carried out in the national regulatory framework, but the peer review was done at the European level, under the coordination by ENSREG. All the EU countries, including those without nuclear projects, were invited to send experts to peer review missions. Thus the assessment by national regulators was reviewed by regulators of other countries. This was the key for confidence building and ensuring maximum transparency. No doubt the process was difficult and very resource intensive but compromise solutions have been found. The European participants advised their Asian partners to take lessons from the European experience if Asia wished to arrange a similar assessment process on its NPPs, as the European exercise proved to be a good example of building confidence in the region.

However, nuclear safety that was at the heart of the stress-test process and was covered by ENSREG, should be considered in the wider context. It was noted that security was considered

solely a national competence. Therefore ad hoc working group on nuclear security was established and identified six fields such as physical security, plane crash, cyber attack etc. Each operator contributed to the public reports in these fields.

It was also pointed out that interpretation of the results differed by countries and was not consistent in some of them.

SESSION 6

IMPLEMENTING THE PROVISIONS OF GLOBAL SAFETY REGIME

Mr André-Claude LACOSTE, President of the Sixth Review Meeting of the Contracting Parties of the Convention on Nuclear Safety (CNS), outlined the objectives of the Sixth Review Meeting which will be held in 2014. He noted that the Meeting would focus mainly on consequences and the lessons learnt from the Fukushima accident. It has already been decided to establish the Effectiveness and Transparency Working Group with the aim to strengthen the CNS and propose the amendments to the Convention. However, the responsibility to decide what actions and tools to improve the Convention regarding nuclear safety would be given to the Contracting Parties.

Mr Jonas EBBESSON, Chair of Compliance Committee under the Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (the Aarhus Convention), overviewed the general features, scope, objectives and principles of the Aarhus Convention. Mr Ebbesson emphasised that the Aarhus Convention is fully applicable to nuclear activities, including nuclear power plants and installations for final disposal of nuclear wastes. The Convention aims at contributing to the protection of the right of every person of present and future generations to live in environment adequate to his/her well-being. In order to reach this objective, the Convention guarantees the principles of non-discrimination, access to information, public participation and access to justice. The role of the Compliance Committee (ACCC) was also mentioned. Several examples of ACCC role in complaint handling were presented. Among them was the Belarus failure to comply with the Aarhus Convention by restricting access to information, not informing the public about the complete EIA Report, limiting the possibility of the public to make comments etc. Moreover, Mr Ebbesson provided other examples of Czech Republic, UK and Germany illustrating the transboundary context of the Aarhus Convention and nuclear issues per se. In repeating that all the Aarhus Convention requirements were relevant to nuclear installations, Mr Ebbesson concluded that it was an excellent opportunity to be able to present the convention for the ASEM Seminar on Nuclear Safety.

Ms Vesna KOLAR-PLANINŠIČ, Chair of Implementation Committee of the Convention on Environmental Impact Assessment in a Transboundary Context (the Espoo Convention), overviewed the scope and role of the Espoo Convention as well as the Protocol on Strategic Environmental Assessment (SEA). The main objective of the Convention was to provide the high level of protection of the environment, including health, and ensure public participation and consultation of the plan and projects including nuclear related activities. Ms Kolar-Planinšič presented activities of Implementation Committee and the fact that there were more submissions and information gathering cases on nuclear activities, also due to some specific in programme/plan/project preparation. There were also some difficulties in notification, quality of environmental reports when safety was one of the issues to be assessed, and public participation. The implementation committee task was to assist parties in proper implementation by preparing

findings and recommendations to the parties of origin and affected parties. She noted that the Convention provided for a certain sequence in developing a nuclear power plant and that site location alternatives and technical alternatives had to be prepared and discussed in transparent transboundary procedures, SEA and EIA. She emphasized that the key for good implementation was good-will cooperation between the parties concerned, including the public and that there was a possibility to strengthen cooperation between the international conventions and organizations to ensure safety.

Discussion

Clarification was sought whether the Aarhus Convention had to be applied when modernizing NPPs, e.g. while implementing national action plans in relation to stress tests carried out after the Fukushima accident, or a plan like Germany's to phase out nuclear energy. Concern was raised that the swift implementation, when required, should not be hindered by unnecessarily lengthy procedures. The Aarhus Convention Compliance Committee members explained that decisions taken on national level were subject to public participation, while the ones related to a company's internal decisions were not. In general, the main concern by the Committee was that public participation was ensured with all options open. It was noted that both conventions were dealing with all energy projects, however, most of them did not have transboundary impact, while nuclear installations, by definition, did and therefore were the most visible cases. It might seem frustrating from the operator's point of view, but would pay off in the long term perspective as far as the public interest was concerned. It was concluded that transparency could contribute to better public support to energy projects.

WORKING DISCUSSION

Towards the Global Perception of the Required High Level Nuclear Safety: Are International Instruments Sufficient, or Do We Need Additional National or Regional Initiatives?

It was noted that there were two types of international instruments available – binding and non-binding. Also, international instruments were more like acts of compromise. However, sometimes legally binding instruments are non-enforceable (e.g. CNS). So could one achieve nuclear safety via voluntary approach, or should this require a legal approach?

Besides, nuclear safety respects no borders.

Also, one observes a lack of global convergence of understanding of what nuclear safety is. How safe is safe enough? How can one achieve sufficient safety culture? Should new investment go for the best technology? There should be a distinction between the best available and proven technologies. Safety should not be put into quantified legal provisions – that is what the operators would say. Newcomers should have access to the best technologies. The participants underscored that a constant improvement process had to be ensured in regards to safety standards.

On one hand, enhancing nuclear safety should be paramount, so perhaps one should resort to legal instruments. However, legal instruments take several years to finalise, therefore voluntary action would be more effective in bringing in early improvements. But on the other hand, can political commitments be as good as conventions? Can they be translated into powerful tools?

One should have a system of binding legislation to ensure the enforceability – this was the European example and message for Asia. In the EU, in case of deviation from the procedures there were infringement measures. Therefore legislation and infringement were the points to make things enforceable.

Industry should be strong and growing together with national regulator. There should be both strong, but strong industry should come first.

Peer reviews are often referred to as instruments to improve nuclear safety, but it had to be an effective instrument to cover a rather wide array of issues. They had to be applied to both operating and new plants. Besides, they also related to changing the existing nuclear safety culture. Stress tests review was an effective exercise as it focused on clear set of parameters.

Responsible development of nuclear energy should be based on a good balance between transparency, safety and security. Member states have to translate global perception into their local situation. Infrastructure should be in place before installing a technology.

Wrap-up session

Participants noted that nuclear safety was a global challenge as nuclear accidents could have a broad transboundary impact on human health, environment and food safety. There was a broad agreement that ensuring compliance of nuclear power development with the international nuclear safety standards was a common responsibility. No compromising on nuclear safety should serve as the underlying principle in this regard.

In addition to international conventions governing nuclear safety, other tools e.g. cooperation between operators were available. Participants noted that conventions had limits because of their incentive nature.

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Participants expressed interest in continuing the dialogue on nuclear safety in ASEM format and welcomed the Indonesian offer to host the third ASEM Seminar on Nuclear Safety in May or November 2014.