

New Opportunities for Nuclear Security Best Practice

Sharing: The Role of the Centers of Excellence

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1. INTRODUCTION

The Nuclear Security Summits that were held in Washington and Seoul have been very important in many respects. Both gatherings have helped countries to recognize the significant of nuclear terrorism and the importance of international cooperation in preventing and effectively responding to this threat. Several measures for strengthening the international regime of nuclear security were drawn from these summits. One of these measures included enhancing the security culture. Education and training are practical ways to help strengthen the security culture. However, there are few places that provide such programs related to nuclear security. Several countries including the ROK have pledged to establish the center of excellence during the summits. It is expected that Korea's training center will play a significant role in strengthening the security culture by providing education and training for both those who work in nuclear field and the general public. The role of this center is not limited to just training and education. It can be used as a place for sharing past experiences and best practices. In this paper, the objectives and roles of the center will be discussed and suggestions will presented on ways to operate it efficiently.

2. BACKGROUND ON THE ESTABLISHMENT OF THE CENTER

2-1 Pledge at the summit

The two documents that outline the bases of such a center were released during the Washington summit- the communiqué and the work plan. The communiqué included 12 provisions and there is mentioned of the security culture.

The communiqué stated that nations should: “Recognize the continuing role of nuclear industry, including the private sector, in nuclear security and will work with industry to ensure the necessary priority of physical protection, material accountancy, and **security culture**”

In the work plan, more specific provisions relating to security culture, training and the creation of an education center were mentioned. Key points of this proposal are outlined in this excerpt from the plan.

*Participating States will work with the nuclear industry to promote and sustain strong **nuclear security culture** and corporate commitment to implement robust security practices, including regular exercises and performance testing of nuclear security features, consistent with national regulations. Participating States will encourage the creation of and networking among nuclear security support centres for capacity building to disseminate and share best practices and will support IAEA activities in this area*

At the Seoul summit, the communiqué was the sole official document released; and it stressed the importance of the nuclear security culture. It stated that investment in human capacity building is fundamental to promoting and sustaining a strong nuclear security culture; and States are encouraged to share best practices and build national capabilities through bilateral and multilateral cooperation. It also stated that all stakeholders, including the government, regulatory bodies, industry, academia, nongovernmental organizations and the media are encouraged to fully commit to enhancing the security culture and to maintain robust communications and coordination of activities. The communiqué also stressed the importance of promoting human resource development through education and training and welcomed the establishment of these centers as well as other nuclear security training and support facilities. It also mentioned the effort made by the IAEA to promote networking among such centers to share experiences and lessons learned as well as to optimize available resources. At the Washington summit, ten countries (ROK, Japan, China, Kazakhstan, Argentina, Brazil, Chile, South Africa, The Netherlands and India) announced plans to establish their own nuclear security education and training centers. The scope and scale of the centers that each country is planning to establish are different, but their objective is exactly the same.

2-2 Objectives of the center

The purpose of establishing an education and training center is to strengthen the regime of nuclear security domestically and internationally. International cooperation is critical in order to meet the objective of the center since nuclear security issues can affect not only the concerned country, but also

neighboring countries. The overall long time goals of the centers is to promote a high level of nuclear training and support services as a cornerstone in the development of national, regional and global nuclear security. The centers will also facilitate cooperation to optimize the use of available resources and leverage those resources to meet specific needs. These objectives will be achieved through international coordination and collaboration as well as by sharing information and best practices in areas, such as: training program development, training content, teaching methods and instructor training and certifications. The centers should build up their capacities for the provision of training, technical and scientific support services, including establishing links to other relevant centers

3. ROLE OF THE CENTER OF THE EXCELLENCE

The primary role of the training center is to provide education and training programs for enhancing awareness of nuclear security and non-proliferation. However, it can be used for a multitude of other purposes. Sharing of best practices on the implementation of nuclear security is one of the major roles of the center. It is not easy for an emerging country to get reliable information and support to establish its national framework for nonproliferation and nuclear security. The center can play a role in supporting those countries that plan to initiate a nuclear industry. Many countries that have pledged to establish centers during both nuclear security summits outlined their plans for construction of experimental facilities. Its main function focuses on practical exercise, but it can also be used as a test field for R&D (Research and development) purposes.

3-1 Education and Training

There are not many opportunities for training in the nonproliferation and nuclear security area as compared with other nuclear sectors (even though their importance should be explained to the public as well as those who work in these areas through education and training). The IAEA and countries such as the US and Russia have been providing regional and international training programs. Unfortunately, they are not large enough to accommodate the demand from the international community since only 30 people can be accepted as trainees in each course. So it is encouraging that almost 10 countries have pledged to establish the center of their own at the first and second nuclear security summit. International and domestic regimes of nonproliferation and nuclear security can be strengthened through improving the awareness and acquisition of technical skills of those who work in these fields by taking these training programs. Since public awareness of nuclear security is poor, it

is expected that a training program for the general public will greatly contribute to spreading the recognition of the importance of nonproliferation and nuclear security. One of the major tasks of the center is to create specialists in the field of nuclear security and nonproliferation. Currently, there are few educational institutes that offer an official degree program in nonproliferation and nuclear security. If the center operates such a program, with the cooperation of universities and colleges, a highly skilled body of personnel will be available for the nuclear industry.

3-2 Sharing of Best Practice

Trial and error can be reduced if we refer to the experience and mistakes of others. The gap between advanced countries and emerging countries in the field of nonproliferation and nuclear security are so wide that it is not easy for an emerging country to catch up to that of an advanced one. Best practices of an advanced country can provide vital information for emerging countries. This will allow them to create a solid foundation for their nuclear industry. The role of the center is very important in terms of that information will continue to be shared well after the establishment of a nuclear infrastructure in an emerging country. Best practice can be shared during training and education or in a workshop in which various countries, with different experiences, are participating. Emerging countries can establish their own national regime of nonproliferation and nuclear security that matches international standards within short a period of time by applying the best practice of the advanced countries. This in turn can lead to strengthen the international regime of nonproliferation and nuclear security.

3-3 Technical Support

New technologies are being developed in order to cope with the attempt by some countries to acquire nuclear weapons, as well as with the potential of theft of nuclear materials and the increasing threat of terrorist attacks against nuclear facilities. R&D activities can be carried out by only a few countries that already possess well qualified technical personnel as well as the financial ability to carry out research. It is difficult for the countries that have no nuclear infrastructure to develop this technology by themselves, especially in a short period of time. The center is able to provide the opportunity for those countries to obtain the technology through either regular training and education programs or customized courses. Another important task of the center is to assist emerging countries in establishing their legal and regulatory framework. The communiqué released after the 2012 Seoul Nuclear Security Summit stressed the need for international cooperation to assist States. These centers

can be a useful means to accomplish this task. Eventually, these efforts will play a significant role in strengthening the international regime of nonproliferation and nuclear security

3-4 R&D activities

Many countries that have pledged to establish training centers (including the ROK, Japan and China) also plan to construct experimental facilities near by these centers. These facilities can be used as a place for developing new equipment as well as for training purpose. In case of the center that will be established in the ROK, a large scale test field composed of four sectors is scheduled to be constructed simultaneously, as a way of stimulating R&D. The vulnerability of physical protection systems installed in nuclear facilities can be evaluated through testing under various conditions as well carrying out performance tests on newly developed technologies using the test field. The performance data collected by the test will be used to develop evaluation tools and more advanced technology. Cooperation among industry, academia and research institutes is critical for technical development and it can be established through the use of the experimental facility in the center.

4. COOPERATION ON THE CENTER

4-1 Important of the cooperation through the center

Compared with other related topics, nuclear security and nonproliferation are very sensitive issues in relation to cooperation since they deal with matters of nuclear materials and confidential information. In this regard, it is not easy to cooperate directly in a civilian basis. Political decisions at the highest level are required before any actions can take place. The security summit provided momentum for cooperation but details still need to be worked out before there can be any practical results. Joint declarations or statements among the countries would be necessary to promote cooperation. A political declaration for cooperation would be the driving force for the initial steps, but it takes time and it is not easily achievable. Trust building among countries is the prerequisite for government level cooperation and it can be done through the centers. The centers could be a focal point for where nations could work together on various programs range from training and education to research. There have been many attempts made to find an appropriate way to coordinate the centers internationally and regionally. The IAEA has been playing an active role in formulating a network for cooperation between nations. Thanks to the agency's efforts, the International Network for Nuclear Security

Training and Support Center was officially launched in February, 2012. It is expected that practical measures will be initiated through this network. Regional cooperation is also an important factor in operating these centers. There have been several attempts to figure out ways to work with the various regional centers; unfortunately there have been no substantial result yet. This is due in large part to conflicting national interests. Cooperation among the centers is so essential that it should be pushing ahead vigorously.

4-2 IAEA effort for the cooperation of the center

Effective nuclear security requires the provision of capabilities to prevent, detect and respond to criminal or unauthorized acts with nuclear security implications, involving nuclear or other radioactive material. If the established capabilities are to remain effective, they should be developed systematically and should be self-sustaining over a long period of time. The IAEA gives particular attention to supporting States in their efforts to establish national nuclear security support centers that aim at building-up a cadre of highly qualified persons. This support extends to the training of nuclear security personnel and at providing specific technical support required for the effective use, and maintenance of instruments and other nuclear security technical systems, as well as providing scientific support for the detection of and the response to nuclear security events in a country.

There is also a need to coordinate the training centers since about 30 countries have announced their intentions to establish one. Concerns on reducing the duplication of development of programs have been raised and there is a strong demand for cooperation internationally among the centers. The IAEA Secretariat has proposed the establishment a national nuclear security support center that can be utilized by any State. This concept has been carried out successfully in several States that have been willing to share their experiences with the international community. In order to coordinate current and future efforts in States or regions in establishing and maintaining such centers, the IAEA had organized a meeting under the subject of 'Establishment of self-sustaining Nuclear Security Support Center' at their headquarters in January 31, 2012. There were 47 participants from 30 Member States, including: two participants from the European Union, one participant from the United Nations Office for Disarmament Affairs and the 1540 Committee, two participants from the United Nations Office on Drugs and Crime and two from the World Institute of Nuclear Security as well as three IAEA staff members. The objectives of the meeting focused on discussion of the establishment of a network based on terms of reference proposed by the IAEA and to develop tangible action plans. The participating countries at the meeting agreed on the necessity of a network and approved the terms of reference. The second meeting took place on February of 2012 at IAEA Headquarters. The aim of this

meeting was to establish a network of collaboration among the different operators of such centers and other relevant stakeholders. The new network was named the ‘International Network for Nuclear Security Training and Support Center’ (NSSC). The vision statement of this network is ‘Excellence in nuclear security worldwide’ and its mission is to contribute to the global efforts of enhancing nuclear security through an effective and collaborative network of nuclear security training and support centers. There was consensus among the participants that there is a need for three working groups. All three working groups will cooperate on issues such as: coordination and collaboration, best practices and information management and other emerging issues. The IAEA coordinates the activities of the Network and acts as its Secretariat as well. The role of the agency includes convening annual Network meetings, putting together the subjects for discussion, supporting activities of the Network (subject to the availability of resources), coordinating the activities of the Network working groups and facilitating collaboration among all members. In order to accelerate the operation of the Network, the IAEA will organize meetings to support the establishment and coordination of the different working groups. In addition, the agency will facilitate the Network hub through the provision and maintenance of the NUSEC (which is a portal for nuclear security established by the IAEA). It is expected that the networks will contribute to harmonizing and strengthening the role of the center.

4-3 Regional Cooperation

During the nuclear security summits, Korea, Japan and China pledged to establish training centers that have similar functions. Even though the scale and purpose of each center are different, the centers that reside in the same region will work together in order to maximize their effectiveness and efficiency. Many efforts have been made to build cooperation, but there have been no substantial results on trilateral cooperation yet. In order to facilitate regional cooperation, the scope of this collaboration should be narrowed to technical and other practical matters at the initial stage of development. Holding regular workshops on nuclear security or non-proliferation at these centers is the most practical way to begin cooperation. Each center can alternate hosting these workshops annually. The subject and participants selected for the workshop can be determined by a working committee that is assembled with representatives from each country. Substantial results can be achieved in the field of education and training. The regional countries that coordinate the training plans can help to ensure proper allocation of resources so as to minimize duplication and to ensure the quality of training. Common curricula and teaching material can be developed jointly with the support of the NSSC. Lectures and even trainees can be exchanged under the framework of cooperation. As explained, most

of the countries that have plans to establish training center will also construct experimental facility where joint research can hopefully be performed.

4-4 Cooperation with other nuclear area

In the area of nuclear safety and nuclear power, many countries have already established education and training programs. As many experiences have been accumulated in these fields, infrastructure for training and education is well furnished. Good quality training materials have already been developed and there are many competent lecturers. Many countries with nuclear power plants have organizations only focusing on training and education in terms of nuclear safety and nuclear power. The lessons gained from the experiences of operating these organizations can be applied to the centers so as to speed up their establishment. Therefore, it is needed to have a close relationship with them. There are several items to cooperate such as; exchanging of lecturers on the common subjects and sharing best practices on the training skills.

5. CONCLUDING REMARKS

With the increasing threat of terrorism, the nuclear security culture has become very important. The nuclear security culture is defined as the level of awareness of security issues by government public and the private sectors. This culture is comprised of a mixture of characteristics, attitudes and behaviors of individuals, organizations and institutions which serve as a means to support and enhance nuclear security. Nuclear security awareness can be improved through continuous training and education. Nuclear security education and training centers can play a central role in enhancing this security culture. It is very significant that many countries had promised to establish their own centers during the nuclear security summit. Along with its basic function of education and training, the centers have additional roles such as: a place for sharing best practices, a center for R&D and technical support. It is essential for these centers to cooperate in order to improve their efficiency and effectiveness as well as to minimize the duplication of resources. The IAEA sponsored a meeting to help establishing a system of collaboration between these centers called the 'International Network for Nuclear Security Training and Support Center.' The NSSC was launched in February of 2012. It is expected that cooperation can be achieved through this network. Regional cooperation is important, so a great deal of effort is still needed to help build this framework.