

The Education and Training Activities and Future Challenges of INSA in ROK

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1. Introduction

Domestic safeguards implementation activities of ROK are implemented based on the Nuclear Safety Act. It emphasize the importance of education and training with respect to nuclear non-proliferation. ROK has used education and training activities as an important means to strengthen international nuclear non-proliferation regime and cooperate with the international community and implement domestic safeguards activities effectively. With the establishment of International Nuclear Non-proliferation and Security Academy (INSA), ROK started an international and domestic education and training regarding nuclear non-proliferation in earnest.

2. ESTABLISHMENT OF INSA, AND ITS MISSION

On the occasion of the first Nuclear Security Summit (NSS) in 2010, ROK pledged to contribute to the international community through the establishment of "Center of Excellence (COE)", which was established in 2014 under KINAC, named INSA.

INSA has strength in its capabilities of conducting education and training activities due to being capable of utilizing experienced national safeguards inspector as instructor.

INSA organized an education and training

program to support the establishment and reinforcement of safeguards system in newcomer countries and strengthening of domestic safeguards system in Korea. In particular, it is based on systemic approach to training (SAT) which is composed of five elements such as analysis, design, development, implementation, and evaluation (ADDIE) [1,2].

3. INTERNATIONAL AND DOMESTIC TRAINING COURSE OF INSA

INSA has international and domestic education and training program regarding nuclear non-proliferation.

Firstly, INSA has two kinds of program; INSA-initiated course and INSA-IAEA International/Regional Training Course (ITC/RTC).

INSA-initiated course have been developed in cooperation with Department of Energy (DOE) / National Nuclear Security Administration (NNSA) of U.S.A. and IAEA; Fundamentals of Nuclear Safeguards (Introductory, 5 days); Provision of Safeguards Information to the IAEA (Specialized, 5 days); Strengthening State Safeguards Regulatory Authority (Specialized, 5 days).

With close cooperation between ROK and IAEA, the first INSA-IAEA RTC was held from 6-17 October in 2014 which was titled "Regional Training Course on State System of Accounting for and Control of Nuclear Material (SSAC)". It is mainly targeted to Small Quantities Protocols (SQP)

countries and not only IAEA experts but also KINAC and other domestic experts were participated in the lectures. It became significant corner stone for close and strong cooperation between INSA and IAEA in order to enhance international nuclear non-proliferation regime especially for the countries which wish to start nuclear energy program.

Secondly, INSA has domestic course such as nuclear non-proliferation course for facility operators and project managers on nuclear fuel cycle research, nuclear safeguards inspector course, and awareness program. Nuclear non-proliferation course for facility operators and project managers on nuclear fuel cycle research and nuclear safeguards inspector course are legally mandated, which are based on Nuclear Safety Act.

Regarding awareness program which is not legally mandated, INSA tried to expand it for the strengthening of a nuclear non-proliferation culture of the public [3].

4. Conclusion

Recently, INSA has developed Substitutional Reality (SR) based Field Training Exercise (FTX) for physical protection training programs by using virtual reality (VR) technology. It might be modified and could help to provide very realistic situation-based safeguards training exercise as if trainee visited real site. This will help overcome constraints for education and training such as safety and cost, and maximize trainee's immersion in the training [4].

INSA also need to consider preparing tailored program with IAEA for full nuclear fuel cycle of next generation reactor such as sodium-cooled fast reactor (SFR), high temperature gas reactor (HTGR).

For strengthening INSA's HRD capacities, even though INSA has experienced experts as instructor who are in charge of safeguards implementation on

site, still INSA is required to have more excellent faculty in terms of having good foreign language ability and availability. Recently INSA has supplemented four full-time professors.

Finally, INSA will keep accomplishing its original mission to strengthen international nuclear non-proliferation regime by providing international and domestic education and training with active utilization of new technology. INSA will keep its sustainability by means of two measures; development tailored education and training program for newcomer countries; enhancing INSA's outreach program, which result in not only strengthen international nuclear non-proliferation regime but also continuously contribute to international society.

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