

ISCN's Activities to Promote Universalization of INFCIRC/225/Rev.5 (NSS 13)

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*Integrated Support Center for Nuclear
Nonproliferation and Nuclear Security*

Japan Atomic Energy Agency



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Vienna, Austria**

ISCN: Nuclear Security COE in Japan



Integrated Support Center for
Nuclear Nonproliferation and Nuclear Security (ISCN)

Japan Atomic Energy Agency



Establishment and Activities

Establishment: December 27, 2010

Purpose: Strengthening nuclear non-proliferation and nuclear security mainly in Asian nuclear emerging countries

Human Capacity Building Support:
Capacity building assistance through human resource development including training and education



Nuclear Security

Safeguards and SSAC

International Nuclear Nonproliferation Framework

Capacity Building Assistance through Human Resource Development including Training and Education

Three Courses

1. Nuclear security course
2. Safeguards and SSAC* course (* State system of accounting for and control of nuclear material)
3. International nonproliferation framework course

Objective

To help ensure that all existing nuclear material is used exclusively for peaceful purposes and is used sufficiently protected against theft and sabotage through:

- Knowledge-sharing,
- Experience-sharing,
- Support for legal development , and
- Hands-on training for safeguards and security.

Needs Oriented Approach:

Different Target Participants for Different Programs

- International/Regional Course
- Bilateral Support or Dispatching Course
- Domestic Course



Nuclear Security Course

Topics of Courses

- ◆ Design and Evaluation of Physical Protection System for Nuclear Material and Facilities
- ◆ **IAEA guidelines: INFCIRC/225/Rev.5 (NSS 13)**
- ◆ Physical Protection Detection System Performance Testing
- ◆ Scenario Development
- ◆ Tabletop Exercise
- ◆ Nuclear Security Culture
- ◆ Hosting of IAEA courses: Insider Threat, PP Measures against Sabotage, Security of Radioactive Sources, Computer Security, Nuclear Security Culture, Transport Security, NS for Major Public Events

Bilateral Courses

- ◆ Basics of physical protection
- ◆ Nuclear security assessment
- ◆ Nuclear security at borders
- ◆ Nuclear Security Culture
- ◆ Nuclear security culture

<For Effective Learning>

Lectures



Group Exercises



PP Exercise Field



Virtual Reality System



ISCN'S Contribution to Universalization of NSS 13

1. Development of Training Curriculum on NSS 13

- ISCN-SNL workshop → IAEA NSS 13 training course

2. Development of Practical Training Courses on Nuclear Security – implementation of NSS 13 recommendations

- Training materials in compliance with NSS 13 recommendations
- Regional/Domestic courses
- Development of training tools

3. Complementing IAEA's Efforts to Support Member States

- Hosting IAEA training courses
- Dispatching courses
- COE collaboration

Development of NSS 13 Course (1)

Sept. 2011: Domestic workshop (2 days)

- Jointly conducted by ISCN and US DOE/NNSA, SNL
- Curriculum and lecturers from SNL
- Lecture, individual/group exercise, discussion



Oct. 2011: Regional workshop (2 days)

- Jointly conducted by ISCN and US DOE/NNSA, SNL
- The first regional training course on NSS 13 in Asia
- Held back-to-back with ISCN's physical protection regional training course

Workshop Contents:

- Background of the development of Rev.5
- Changes from Rev. 4
- Definition of terminologies
- Objectives of a State's physical protection regimes
- Elements of physical protection regime
- Recommendations for PPS for nuclear materials against theft, sabotage, and during transport

Development of NSS 13 Course (2)

Transfer of ISCN-SNL workshop curriculum to IAEA

Oct. 2012: IAEA Regional Workshop on NSS 13 (2 days)

- Co-organized by IAEA and ISCN
- Lecturers: International experts (hired by IAEA), ISCN and SNL
- Course materials with IAEA slide format



Development of the 5-day IAEA training course on NSS 13

- ISCN and SNL joined consultancy meetings to develop course material



Aug. 2013: 1st IAEA Training course on NSS 13 (5 days) at ISCN

- Co-organized by IAEA and ISCN
- Lecturers: International experts (hired by IAEA), ISCN and SNL
- IAEA adopted same material format as ISCN/SNL workshop: slides and workbook, with more exercises

Development of Practical Training

Training courses in compliance with NSS 13 recommendations

- Implementation of recommendations
- Practical tools and hands-on exercises

Regional Training Course on Physical Protection of Nuclear Material and Facilities (PP RTC): 2 weeks

- Performance-based approach for design and evaluation of physical protection system
- Threat assessment and Design Basis Threat
- Risk-based protection: risk management, graded approach, defense-in-depth
- Insider threat
- Special topics lecture on computer security/nuclear security culture
- Use of training tools and exercises



Domestic Training Course on Physical Protection of Nuclear Material and Facilities: 3 segments, total 8 days

- Participants with more knowledge and experience in PP
- Including the lecture on performance testing



Training Tools: Physical Protection Exercise Field

Provide practical exercises in the realistic environment

- Equipment used at the real nuclear facilities
- Function of PP equipment
- Performance testing exercise

- Intrusion Detection
- Alarm Assessment
- Alarm communication and display
- Entry Control
- Contraband Detection
- Access Delay



Exterior Detection Sensors, Cameras, Delay Elements



Contraband Detection Equipment

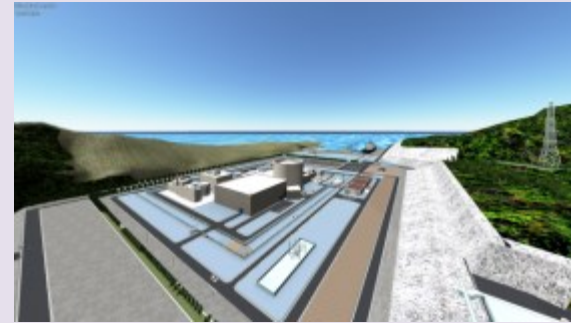


Access Control System

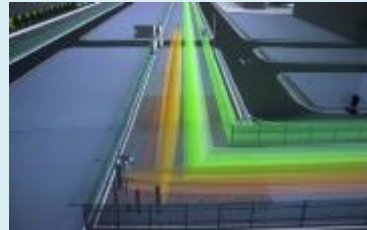
Training Tools: Virtual Reality (VR) System

virtual experience of observing the inside/outside of a nuclear facility

- Construct a virtual nuclear power plant (NPP) in the cyberspace
- Display a NPP on the three-sided screen in 3-D
- walk-through/fly-through of a NPP



Learning the characteristics of a facility and its physical elements by examining a three-dimensional view of the facility



Verify monitoring functions and image features of cameras and sensors



Learning skills for handling contingency in a virtual central alarm station



Verify installation and functions of security tools



Complementing IAEA's Activities (1)

Increase training opportunity enhance quality of training in the region

Hosting IAEA courses at ISCN

- ISCN hosts two IAEA courses per Japanese Fiscal Year
- Financial support to IAEA from the Japanese government
- Select course topics based on the regional needs
- Use ISCN's training tools for maximizing course effectiveness
- Sharing experience and good practices of Japan

Dispatching Course

- Tailored training course at the target country
- Reach out to wider local audience than training courses in Japan

Complementing IAEA's Activities (2)

COE Collaboration

1. Asia Regional Network (ARN): Japan (ISCN), ROK (INSA), China (SNSTC)
 - Sharing training schedules to avoid conflict
 - Sharing instructors to cover limited resources at each COE
 - Sending participants to learn from each other
2. Support capacity building of other COEs
 - Japan-Indonesia cooperation
 - ✓ Accepting visiting researchers from Indonesia
 - ✓ Joint curriculum development
 - ✓ Follow-up training in Indonesia
 - ✓ Nuclear security culture
 - Japan-US-Kazakhstan cooperation
 - ✓ Assistance for the establishment of the COE in Kazakhstan
 - ✓ Train-the-trainer of Kazakh instructors
 - ✓ Joint implementation of courses



Thank you for your attention.



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