EU High-level Event

International Cooperation to Enhance Nuclear Security Culture

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Commissioner
Nuclear Regulation Authority
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Topics

I  Enhancing Nuclear Security and Nuclear Security Culture in Japan

II  Japan’s Efforts to Enhance Nuclear Security Culture through International Cooperation
I - Enhancing nuclear security and nuclear security culture in Japan

1 Lessons and implications of Fukushima accident
   - What happened?
   - Implications
   - Post-Fukushima improvements made to enhance nuclear security (and safety)
   - Further action

2 Measures to strengthen physical protection
I What happened?

- Earthquake (M9.0) and Tsunami (15 meter)
- Station Black Out (SBO)
- Cooling failure
- Core damage/Containment failure
  - (Fuel meltdown)
  - (Hydrogen explosions)
- Release of radioactive substances
  The worst “complex disaster”
Ⅰ  Fukushima accident  
(Implications and lessons)

- Showed how a natural event can cause a loss of control at NPP, leading to severe accident and extensive damage to lives, society and the environment
- Serves a reminder of the risks and offers lessons to be learned for nuclear security as well as for safety
  - Combination of non-NPP and terrorism (9.11, 2001)
  - Combination of NPP and natural event (3.11, 2011)
  - Combination of NPP and terrorism (?)
I Post-Fukushima: Improvements

• Establishment of New Regulatory Body (NRA)

Independence

- Clear separation of Regulation from Promotion
- An Independent Commission
  (5 Commissioners; 1000 staff)

Integration

- 3 S (Safety, Security, Safeguards)
- Radiation Monitoring
- RI regulation

Transparency
Independence and Integration

AEC : Atomic Energy Commission
METI : Ministry of Economy, Trade and Industry
MEXT : Ministry of Education, Culture, Sports, Science and Technology
MOE : Ministry of the Environment
NISA : Nuclear and Industrial Safety Agency (abolished)
NSC : Nuclear Safety Commission (abolished)
I Post-Fukushima: Improvements/Further action

• Strengthened requirements for safety and security (severe accident)
  - Enhanced measures of equipment and facilities essential for safety/security (against terrorism, air crash, etc.)

• Further Action
  - Receiving IPPAS mission (2014-15)
    IPPAS Workshop (December 2013)
  - Ratifying Amended CPPNM (in parliamentary process)
  - Addressing pending issues (insider threats, transport nuclear security, etc.)
I Enhancing Nuclear Security Culture

• Law and ordinances
  - Clear stipulation of NSC as licensee management responsibility

• Awareness Development
  - Leadership, Management system, Personal behavior
  - NSC workshop/Outreach activity
  - Education/training video
  - Self-assessment formula

• A top-down and a bottom-up approach for a strong and effective NSC
Nuclear Security Culture Workshop
(10 March, 2014, Japan)
Panel discussion
IAEA Consultancy Meeting to discuss Nuclear Security Culture (20-24 January, 2014 @Vienna)
I Strengthening Physical Protection

- Amended Reactor Regulation Law (2005)
  - Design Basis Threat (DBT)
  - Physical Protection Inspection
  - Confidentiality
- INFCIRC/225/Rev.5 published (2011)
- Ministerial Ordinance amended (2011)
  - Restricted area, Barriers, Cyber Security, etc.
- Other supplemental enhancement measures (2012)
  - Backup alarm system, secure power supply, protection against monitoring, etc.
  - Insider threats, access control (two-person rule)
International Cooperation

• Human resource development/capacity building
  
  - Training at ISCN* - Asia’s first CoE

    * Integrated Support Center for Nuclear Non-proliferation and Nuclear Security
    * Capacity building, Assistance for infrastructure development, Technology development
    * More than 700 Asian and other participants joined ISCN’s training courses
    * ISCN-WINS joint workshop

• Collaboration/coordination among the world CoEs

    * US (DOE, NNSA), EC(JRC), ROK/China and others
Establishment of ISCN


Establishment of an integrated support center for nuclear nonproliferation and nuclear security (ISCN), in the Japan Atomic Energy Agency (JAEA)

Full operation in 2011
ISCN - Nuclear Security Course

Physical Protection
- RTC for Physical Protection for Nuclear Material and Facilities
- Workshop in NSS13 (INFCIRC/225/Rev.5)
- Physical Protection Detection System Performance Testing
- PP Inspector Training

Nuclear Security Culture
- IAEA/JAEA Regional Workshop on Nuclear Security Culture
- ISCN-WINS Workshop

Bilateral Cooperation
- Seminar on Nuclear Security

Others

<For Effective Learning>

Lectures  Group Exercises  PP Exercise Field  Virtual Reality System

Activity Results of 2011-February 2014
Total 789 participants to 29 courses
Training Field for Physical Protection System

- Gate
- Monitoring and tracking Camera
- PP Fence
- IR sensor
- Microwave sensor
- Nuclear regulations for people and the environment
Workshop for Japanese operators and governmental agencies

**Theme:**

**JFY2011:** Nuclear Security and Corporate Governance in Post-3/11 Japan

**JFY2012:** Collaboration with Outside Organizations for Strengthening Nuclear Security

**JFY2013:** Information Disclosure, Assurance, ”Insider Threat”

**Theater-based Session:** Professional actors perform a nuclear-security-event scene based on a specific scenario, followed by discussion among participants
Nuclear Security Course

Bilateral Cooperation (Examples)

• Vietnam
Seminar on Nuclear Security (2011)
Co-hosted by: Vietnam Agency for Radiation and Nuclear Safety (VARANS)
Topics: CPPNM requirements and Japan’s experience

• Kazakhstan
Seminar on Nuclear Security (2012)
Co-hosted by: Atomic Energy Agency of Republic of Kazakhstan
Topics: International instruments, INFCIRC/225/Rev.5

• Lithuania
Workshop on Nuclear Security ~ for the enhanced nuclear security across the borders~ (2013)
Co-hosted by: Lithuania Nuclear Security Centre of Excellence (NSCOE) and EC Joint Research Centre (EC JRC)
Cooperated by: US Department of Energy/ National Nuclear Security Administration (DOE/NNSA)
Topics: Boder security monitoring, exercises
International Cooperation

• Japan-US Nuclear Security WG (Since 2011.11)
  9 areas, including
  - Research and development of nuclear forensics
  - Measurement and detection technologies
  - Sharing best practices for nuclear security in new facility design
  - Transport security, etc.

• IAEA
  - IPPAS mission in 2014/2015
    (IRRS mission in 2015)
  - Security Trust Fund
## Nuclear Facilities in Japan (as of March 2011)

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<th>Operation</th>
<th>Construction</th>
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