

Summary of Country Reports

—Current Status of 11 FNCA Member States*—

7th Workshop on Nuclear Security and Safeguards Project
of Forum for Nuclear Cooperation in Asia (FNCA)

September 20, 2017

*For ROK, data remained as of
October 2016.

Regulatory Authority

Independence of Regulatory Agencies

- ◆ **Independent:** China (CAEA), Indonesia (BAPETEN), Japan (NRA), ROK (NSSC), Mongolia (NEC)
- ◆ **Semi-Independent*:** Bangladesh (BAERA), Kazakhstan (NNC), Malaysia (AELB), Thailand (OAP), Vietnam (VARANS)
*The regulatory agency is under a governmental body or ministry to which a nuclear promotion agency belongs
- ◆ **No Independence:** Philippines (PNRI)

Recent Development

Philippines: The Comprehensive Nuclear Regulation Act, creating an independent regulatory body, “Philippine Nuclear Regulatory Commission” is now the priority bill of the Department of Science and Technology. Expected 2017-2018 to pass the bill.

Vietnam: Developing acts to establish independent regulatory bodies

Safeguards (1)

Implementation of International Treaties and Agreements

- Member of **NPT** (Nuclear Nonproliferation Treaty): 11/11 states
- **CSA** (Comprehensive Safeguards Agreement) in Force: 11/11 states (VOA is in force in China)
- **AP** (Additional Protocol) in Force: 10/11 states
- **IS** (Integrated Safeguards): 5/11 states

	NPT Member	CSA in Force	AP in Force	Integrated safeguards
Bangladesh	○	○	30 Mar. 2001	○
China	○	VOA in force	28 Mar. 2002	n/a
Indonesia	○	○	29 Sep. 1999	○
Japan	○	○	16 Dec. 1999	○
Kazakhstan	○	○	9 May 2007	
ROK	○	○	19 Feb. 2004	○
Malaysia	○	○	(Signed: 22 Nov. 2005)	
Mongolia	○	○	12 May 2003	
Philippines	○	○	26 Feb. 2010	* 1
Thailand	○	○	(Signed: 22 Sep. 2005)	
Vietnam	○	○	17 Sep. 2012	* 2

* 1 Philippines got Broader Conclusion from IAEA in May 2013.

* 2 Vietnam got Broader Conclusion from IAEA in May 2015.

Safeguards (2)

Updates on Safeguards Implementation of 2016-2017

- ◆ **Bangladesh:** Physical Inventory Verification (PIV) in May 2017 for the Atomic Energy Research Establishment (AERE) (BDA-) including book audit, verification of fresh, core and spent fuel using MMCC, ICVD, criticality check of the reactor using MMCH and Design Information Verification (DIV), and on LOFs outside AERE (BDZ-) (Dhaka Medical College Hospital) including book audit, verification of DU material.
- ◆ **China:** Submits safeguards reports annually to the IAEA by December each year for the two civilian nuclear facilities, Qinshan-Phase I and Shaanxi Uranium Enrichment Plant that are placed voluntarily under IAEA safeguards.
- ◆ **Indonesia:** Routine safeguards inspection 2 times for each MBA (Pre PIV & AP, PIV); PIV with IAEA to Jogjakarta and Serpong Site in May 2017; received re-verification and CA to Jogjakarta Site in Jul. 2017; BAPETEN develops own cloud system to receive report of NM safeguards, and Additional Protocol from the operator (-2018); numbers of training completed and planned for 2018.

Safeguards (3)

Updates on Safeguards Implementation of 2016-2017

- ◆ **Japan:** Japan compiled 4,660 material accounting reports from 2,099 licensees for the submission to the IAEA in 2016 with inspectors performed 2,001 person days of in-the-field verification activities; in preparation for the removal of all highly-enriched uranium (HEU) and separated plutonium fuels from the Fast Critical Assembly (FCA) of the Japan Atomic Energy Agency (JAEA), the corresponding safeguards activities were completed at the end of 2016.
- ◆ **Kazakhstan:** Supporting the efforts for nuclear nonproliferation, commissioning new infrasound station to register unauthorized nuclear explosions at the nuclear test sites worldwide; Conversion of research nuclear reactor VVR-K from highly-enriched to low-enriched uranium under project on research reactors conversion.
- ◆ **ROK (as of 2016):** started Unannounced Inspection since May 2016; “Updated SLA “has been applied since 1 Sep 2015; revised implementation procedures; 7 Sector approaches are applied based on the types and status of facilities

Safeguards (4)

Updates on Safeguards Implementation of 2016-2017

- ◆ **Malaysia:** New Atomic Energy bill contained basic requirements for safeguards elements as well as systems for accounting for and control nuclear materials, Additional Protocol information and prohibition of nuclear weapon development; Malaysia has signed the Additional Protocol agreement on 2005, but has yet to ratify it; Workshop on domestic inspection and CSA in May 2016.
- ◆ **Mongolia:** Continuous AP activities based on the Safeguards Agreement signed in May 2003; Yearly and quarterly declaration to IAEA by NEC.
- ◆ **Philippines:** IAEA inspection for the three facilities under safeguards once a year every December; Nuclear Material Accounting Reports are submitted to IAEA through the secure communication.

Safeguards (5)

Updates on Safeguards Implementation of 2016-2017

- ◆ **Thailand:** AP in force currently under the cabinet approval process (Preparation to ratify AP by adding safeguards section of the Nuclear Energy for Peace Act, which will enter into force in the near future); cooperation with IAEA, NNSA, U.S. DOE for AP preparation and outreach, including export control regulation of dual use goods, outreaching to the stakeholder concerned with AP, and technical support for the subsidiary regulation related to safeguards.
- ◆ **Vietnam:** 4th year of AP implementation (2017); 87 declarations submitted to the IAEA and 9 complementary access (CA) including 2-hour notice CA; receive the Broader Conclusion from the IAEA; Implemented State Level Approach since May 2017; Installation of safeguards information management system (VIMS) to handle accounting reports, AP declaration and other safeguards related information (in consultation with INSEP/USDOE experts); Outreach activity relating to Annexes I and II of the AP for industries in Aug. 2017 (INSEP/DOE); Workshop on national SG inspection in Sep. 2017 (INSEP/DOE).

Nuclear Security (1)

Implementation of International Treaties and Conventions

- **CPPNM** (Convention on the Physical Protection of Nuclear Material): 10/12 states
- **CPPNM Amendment***: 7/12 states
 - *IAEA Recommendation INFCIRC 225/Rev5 consistent with the Amendment
- **Nuclear Terrorism Convention** (International Convention for the Suppression of Acts of Nuclear Terrorism):
 - Ratification: 6 states, Accession: 2 state, Acceptance: 1 state, Signature: 3 states

	CPPNM	CPPNM Amendment	Nuclear Terrorism Convention
Bangladesh	10 Jun 2005 in force	Ratification process is in progress	Accession 07 Jul 2007
China	09 Feb 1989 in force	Ratification 14 Se. 2009	Ratification 08 Nov 2010
Indonesia	08 Feb 1987 in force	Ratification 27 May 2010	Ratification 19 March 2014
Japan	27 Nov 1988 in force	Ratification 17 Jun 2014	Acceptance 02 Oct 2007
Kazakhstan	02 Oct 2005 in force	Ratification 26 Apr 2011	Ratification 31 Jul 2008
ROK	08 Feb 1987 in force	Ratification 29 May 2014	Ratification 29 May 2014
Malaysia			Signature 16 Sep 2005
Mongolia	08 Feb 1987 in force		Ratification 06 Oct 2006
Philippines	08 Feb 1987 in force	Already in the Senate for ratification	Signature 15 Sep 2005
Thailand	Preparation to accession	Included in new draft regulation	Signature 14 Sep 2005
Vietnam	03 Nov 2012 in force	Ratification 03 Nov 2012	Accession Sept 2016

Nuclear Security (2)

Updates on Nuclear Security Implementation of 2016-2017

- ◆ **Bangladesh:** An expert mission on national detection strategy, a national training course on NMAC and a national workshop on DBT in 3Q of 2017 based on the INSSP approved in Dec. 2016; upgraded PPS of BAEC facilities and other government and private radiation facilities under the Global Threat Reduction Initiative (GTRI) of US DOE; participation in three CRP of IAEA on nuclear security assessment methodologies, nuclear security culture enhancement solution, and factors that influence culture for safety, organizational culture human performance at nuclear and other facilities.
- ◆ **China:** Cyber Security Law released in Nov 2016; Nuclear Safety Law released in Aug 2017; Atomic Energy Law (draft) as a direct upper-level legislation of nuclear security, is in the process of review and approval; Regulations on Nuclear Security under development; Center of Excellence on Nuclear Security (COE) came into operation in Mar 2016, to provide all-around support to the nuclear security governmental management and capacity building in China; successful completion of the Ghana MNSR HEU conversion Project in Aug. 2017; Completed IAEA IPPAS mission in Sep. 2017.

Nuclear Security (3)

Updates on Nuclear Security Implementation of 2016-2017

- ◆ **Indonesia:** BAPETEN updates Physical Protection regulation that accommodate Physical Protection, NMAC and safety (2016-2018); BAPETEN to conduct Table Top Analysis together with BATAN and Security related entities to evaluate PPS implementation in BATAN Jogjakarta (2017); number of trainings completed and planned.
- ◆ **Japan:** Introduction of system to determine trustworthiness of personnel in 2016; enhancing security of radioactive sources; Japan and the United States announced during 2016 Nuclear Security Summit that they would work together toward the removal of HEU from Kyoto University Critical Assembly (KUCA).
- ◆ **Kazakhstan:** Completing construction and opening of the International Low Enriched Uranium Bank to support development of world nuclear energy and reinforcing nuclear non-proliferation regime in Aug. 2017; Establishment of Regional Nuclear Security Training Center in May 2017.

Nuclear Security (4)

Updates on Nuclear Security Implementation of 2016-2017

- ◆ **ROK (as of 2016):** revised DBT considering newly emerged threats such as cyber and drone attack; conducted 4 IAEA-ROK Regional Workshops on physical protection inspection, nuclear forensics, cyber security and 3 INSA International Training Courses.
- ◆ **Malaysia:** Part V of the new bill of Atomic Energy describing basic principle of nuclear security, threat assessment and design basis threat as well as physical protection requirements is under review of AGC; IPPAS mission in April 2016; use of Trust Fund to develop and implement trainings for FLOs and licensee under the NSSC initiatives; Malaysia–Thailand Table Top and Field Exercise at National Border in Nov. 2016; National University of Malaysia develops Master program on nuclear 3S (planned in 2017)

Nuclear Security (5)

Updates on Nuclear Security Implementation of 2016-2017

- ◆ **Mongolia:** Revision of the basic regulation on Radiation Protection and Safety in 2016 to strengthen security of radioactive sources; Nuclear Security Detection Systems Assessment Mission of IAEA in June 2016 to be reviewed detection capability; RPMs installed at major ports in cooperation with US/DOE; IAEA Physical Protection and Security Management Course in April 2017. Workshop on DBT in Aug. 2017.
- ◆ **Philippines:** Inauguration of Training Center for FLOs in April 2016; PPS installation for the research reactor completed in Mar. 2017 under the project of the Global Partnership with the Canadian government; INSSP fully utilized in the nuclear security activities especially in Major Public Events including the ASEAN Summit in 2017.

Nuclear Security (6)

Updates on Nuclear Security Implementation of 2016-2017

- ◆ **Thailand:** Cooperation with IAEA and AELB for the Malaysia-Thailand Cross Border Nuclear Security Exercise in Nov. 2016; conducted ASEANTOM Workshop on Capacity Building and Strengthening the Nuclear and Radiation Safety and Security Network in the ASEAN Region including the nuclear forensics workshop in practical level in Mar. 2017; The subsidiary regulation under Nuclear Energy for Peace Act are in the process of the ordinance committee reviewing (CPPNM, prevention and suppression of the financial support of terrorism, and the proliferation of weapons of mass destruction).
- ◆ **Vietnam:** Pilot Project for Radioactive Source Location Tracking System (RADLOT) in completion stage with distributed tracking devices to facilities with mobile sources in Sep. 2017; Provided IAEA supported handheld equipment for security of the APEC Summit 2017; Domestic workshop on Cyber Security in Jun. 2017; Workshop on Performance Testing provided for VARANS in Aug. 2017.

Nuclear Security Culture (1)

Methods and Plans to Foster Nuclear Security Culture

- ◆ **Bangladesh:** participation of national/international training courses/workshops/meetings in collaboration with FNCA, IAEA, US/DOE, Russia; undertaken nuclear safety and security culture awareness programs through poster display; participation in IAEA CRPs in safety and security culture.
- ◆ **China:** organize/ participate in the national/regional/international training courses/workshops in collaboration with IAEA, US/DOE; publish magazine titled “China Nuclear Security”; develop curriculums on nuclear security culture to improve the awareness of nuclear security culture for domestic nuclear-related personals.
- ◆ **Indonesia:** Introduction of the concept and terms of nuclear security culture to all stakeholders in 2018; develop nuclear security practical pocket book, describing the roles of individual/managers to enhance/improve nuclear security culture at nuclear facilities (2019); universities to develop curriculum on nuclear security culture (UGM’s master programme in nuclear security in 2017; and UNHAN’s programme in 2018); BINUS, UNHAN and UGM as International Nuclear Security Education Network (INSEN) members to collaborate establishing a research centre on nuclear security issues in 2019 (proposal to be submitted in the end of 2017).

Nuclear Security Culture (2)

Methods and Plans to Foster Nuclear Security Culture

- ◆ **Japan:** Nuclear security culture workshop in Indonesia conducted with BATAN and BAPETEN in May 2016.
- ◆ **Kazakhstan:** Peace initiatives of Mr. Nursultan Nazarbayev in nuclear disarmament and nonproliferation presented in Manifesto “Peace. XXI century” at the Nuclear Security Summit in Washington DC.
- ◆ **ROK (as of 2016):** developed the self-assessment framework for nuclear security culture based on IAEA guideline, and would conduct a pilot program at a nuclear facility in 2016; has conducted an annual survey on Nuclear Security Awareness since 2010.
- ◆ **Malaysia:** Nuclear Security Culture workshop for senior managers in Oct. 2016; Training on Tools and Analysis for Security Culture Self Assessment and Support for the Analysis for Survey Results held at 2 major medical institutions in Feb 2016.

Nuclear Security Culture (3)

Methods and Plans to Foster Nuclear Security Culture

- ◆ **Mongolia:** continuous training.
- ◆ **Philippines:** Conducted national security culture in practice in cooperation with IAEA in August 2014 and participated with licensees and staff of PNRI. Plan to include in the syllabus for licensees.
- ◆ **Thailand:** continuous training
- ◆ **Vietnam:** Conducted a Project “Nuclear security foundation and self-assessment methodology” in 2016, at nuclear and radiation facilities. Under the project, questionnaires (68 questions) distributed to facilities: 4 groups of questions (Attitudes and belief, Facility operational and management systems relating to nuclear security, Management activities, Nuclear security officer actions).

Capacity Building (1)

Nuclear Security (and Safeguards) Training Centers

This chart identifies the existing training centers in the FNCA member countries, which provide trainings to practitioners in the areas of nuclear security and safeguards, and training functions of the centers. Educational programs are not included on the chart.

	Training Center/ Training Provider	Status of Training Center	Target	Training Topics			Cooperation with
				Security	SG	Others	
Bangladesh	TBD / BAEC, BAERA	Planned	International/ Domestic	○	○	Border control	IAEA, US/DOE, Russia, JAEA, FNCA
China	SNSTC(COE)/ SNSTC(COE)	In operation	International/ Domestic	○	○	Border control	IAEA, US/DOE
Indonesia*¹	BAPETEN ETC, BATAN CET / BAPETEN, BATAN	In operation	International/ IAEA courses	○	○		IAEA, US/DOE, APSN, PNS, JAEA
Japan	ISCN / ISCN	In operation	International /Domestic/ IAEA courses	○	○		IAEA, US/DOE, EC/JRC
Kazakhstan	TC of INP/ TC of INP	In operation	International /Domestic/ IAEA courses	○	○		US/DOE, Japan

*1 Gajamada University in Indonesia launched master course on nuclear security in 2017.

Capacity Building (2)

Nuclear Security (and Safeguards) Training Centers

Cont.

	Training Center/ Training Provider	Status of Training Center	Target	Training Topics			Cooperation with
				Security	SG	Others	
ROK	INSA / INSA	In operation	International /Domestic/ IAEA courses	○	○	Export control	IAEA, US/DOE
Malaysia	NSSC / AELB	Training class and Testing Lab in operation		○		Border control	IAEA, ANSTO, US/DOE
Mongolia	TBD / NEC			○		Border control Modified SQP	US/DOE, IAEA
Philippines	PNRI	NSSC still in planning	Licensee, FLO and other government agencies	○			IAEA, US/DOE
Thailand	TBD / OAP,DFT*1	Under Consideration	Domestic Competence Authorities	○	○	Border control	IAEA, ASNO, US/DOE, JAEA
Vietnam	TSCNSS / VARANS	Planned		○	○	Rad Detection	IAEA, US/DOE, JAEA

*1 Chulalongkorn University in Thailand has master course on nuclear security and safeguards for international/domestic students.

Capacity Building (3)

Nuclear Security (and Safeguards) Training Centers

Cont.

List of the Training Centers

Bangladesh: TBD

China: State Nuclear Security Technology Center (Center of Excellence on Nuclear Security)

China Customs Training Center for Radiation Detection (border control)

Nuclear Safeguards Technical Research Laboratory (Safeguards)

Indonesia: Nuclear Energy Regulatory Authority Education and Training Center (BAPETEN ETC), National Nuclear Energy Agency Center for Education and Training (BATAN CET)

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

Kazakhstan: Nuclear Security Training Center (Institute of Nuclear Physics, Almaty)

ROK: International Nuclear Security Academy (INSA)

Malaysia: Nuclear Security Support Center (NSSC)

Mongolia: TBD (Executive Office of the NEC is responsible to strengthening human resources in a nuclear and radiation field.)

Philippines: Philippine Nuclear Security Support Center (to be established)

Thailand: TBD

Vietnam: Technical Support Centre for Nuclear Security and Safeguards (TSCNSS)