

# Summary of Country Reports

## —Current Status of 11 FNCA Member States\*—

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8<sup>th</sup> Workshop on Nuclear Security and Safeguards Project  
of Forum for Nuclear Cooperation in Asia (FNCA)

September 12, 2018

\*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 and General Agency for Specialized Inspections(GASI))
- ◆ **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” will be deliberated in the Plenary Session in the Congress this September.

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
<b>Bangladesh</b>	○	○	30 Mar. 2001	○
<b>China</b>	○	VOA in force	28 Mar. 2002	n/a
<b>Indonesia</b>	○	○	29 Sep. 1999	○
<b>Japan</b>	○	○	16 Dec. 1999	○
<b>Kazakhstan</b>	○	○	9 May 2007	
<b>ROK</b>	○	○	19 Feb. 2004	○
<b>Malaysia</b>	○	○	(Signed: 22 Nov. 2005)	
<b>Mongolia</b>	○	○	12 May 2003	
<b>Philippines</b>	○	○	26 Feb. 2010	○* 1
<b>Thailand</b>	○	○	17 Nov. 2017	
<b>Vietnam</b>	○	○	17 Sep. 2012	* 2

\* 1 Philippines got Broader Conclusion from IAEA in May 2013 and implementing IS in 2017.

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

## Safeguards (2)

### Updates on Safeguards Implementation of 2017-2018

- ◆ **Bangladesh:** No further safeguards-related activities took place during Oct. 2017 - Aug. 2018
- ◆ **China:** Submits safeguards reports annually to the IAEA by December each year for the two civilian nuclear facilities, the Shandong Shidao Bay 200MWe High-Temperature Gas-Cooled Reactor Pebble-Bed Module Demonstration Power Plant 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 2017-2018

- ◆ **Japan:** As a result of cooperation between the GOJ(Government of Japan) and the IAEA, the successful implementation of safeguards has enabled the broader conclusion for 2017, first reached for the 2003 calendar year; For Fukushima Daiichi Nuclear Power Plant, strengthening of the existing monitoring systems for damaged reactor Units 1 to 3 was conducted in 2016 and random inspection regime has been resumed at Units 5, 6 and Common Spent Fuel Storage Facility in 2017.
- ◆ **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 2017-2018

- ◆ **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.
- ◆ **Mongolia:** Continuous AP activities based on the Safeguards Agreement signed in May 2003; Yearly and quarterly declaration to IAEA by NEC; Trying to use State declaration portal; received advance notice from IAEA and CA to Central geology laboratory in September 2018; Developing regulations related to safeguards in cooperation with EU /INSC MN3.01/12/.
- ◆ **Philippines:** Since Integrated Safeguards is implemented in 2017, the frequency of inspection will vary. NM accounting reports are submitted annually through the Secure Communication. AP reports will be sent as per AP Agreement.

# Safeguards (5)

## Updates on Safeguards Implementation of 2017-2018

- ◆ **Thailand:** AP ratification on 17 November 2017 and 2 Complementary Access in 2018; Experience sharing on implementation of AP with Sri Lanka at NNSA workshop. Constant cooperation with IAEA, NNSA, U.S.DOE and JAEA for AP outreach, including export control, regulation of dual use goods, stakeholder communication, and technical support for the subsidiary regulation related to safeguards.
- ◆ **Vietnam:** 5th year of AP implementation (2018); 102 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/U.S.DOE 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
<b>Bangladesh</b>	10 Jun 2005 in force	Entry into force since 04 Jul 2017	Accession 07 Jul 2007
<b>China</b>	09 Feb 1989 in force	Ratification 14 Se. 2009	Ratification 08 Nov 2010
<b>Indonesia</b>	08 Feb 1987 in force	Ratification 27 May 2010	Ratification 19 March 2014
<b>Japan</b>	27 Nov 1988 in force	Ratification 17 Jun 2014	Acceptance 02 Oct 2007
<b>Kazakhstan</b>	02 Oct 2005 in force	Ratification 26 Apr 2011	Ratification 31 Jul 2008
<b>ROK</b>	08 Feb 1987 in force	Ratification 29 May 2014	Ratification 29 May 2014
<b>Malaysia</b>			Signature 16 Sep 2005
<b>Mongolia</b>	08 Feb 1987 in force	Preparing to join	Ratification 06 Oct 2006
<b>Philippines</b>	08 Feb 1987 in force	Re-submitted for ratification since it was not acted upon in 16 <sup>th</sup> Congress	Signature 15 Sep 2005
<b>Thailand</b>	27 Mar 2018 in Force	Ratification 27 Mar 2018	Signature 14 Sep 2005
<b>Vietnam</b>	03 Nov 2012 in force	Ratification 03 Nov 2012	Accession Sept 2016



# Nuclear Security (2)

## Updates on Nuclear Security Implementation of 2017-2018

- ◆ **Bangladesh:** According to the country's Integrated Nuclear Security Support Plan (INSSP), an expert mission on national detection strategy, a national training course on NMAC and a national workshop on DBT were scheduled to be held in Dhaka last year. But unfortunately, all the events were postponed to a later time, Since the issue of the Agreement on the Privileges and Immunities of the IAEA was not resolved yet. BAEC has been trying its level best to resolve this issue so that these events can be hosted in Dhaka this year.; An expert team from the Office of Radiological Security (ORS) visited all nuclear and/or radiological facilities in Dhaka to verify the physical protection enhancement works that have been completed under the Global Threat Reduction Initiative (GTRI) of U.S. Department of Energy (U.S. DOE). ; BAEC and Bangladesh Atomic Energy Regulatory Authority (BAERA) arranged meetings with the expert team of ORS to discuss and identify the areas for future cooperation on radiological and nuclear security, especially within the scope of the International Nuclear Security (INS) program of DOE/NNSA. Bangladesh has been participating in a CRP of IAEA titled 'Development of Nuclear Security Culture Enhancement Solutions.'

# Nuclear Security (3)

## Updates on Nuclear Security Implementation of 2017-2018

- ◆ **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.
- ◆ **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. BATAN Serpong (2018; training course on the implementation of physical protection of nuclear material and facility and training course on the performance testing of the physical protection evaluation); National DBT revised in 2018; BAPETEN and IAEA supported major public event for ASIAN games in 2018. BATAN and BAPETEN conducted cyber security WS supported by U.S.DOE.

# Nuclear Security (4)

## Updates on Nuclear Security Implementation of 2017-2018

- ◆ **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.
- ◆ **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.

# Nuclear Security (5)

## Updates on Nuclear Security Implementation of 2017-2018

- ◆ **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; Conduct several workshop {National Workshop to Build Instructor for Train the Trainers of Front Line Officer – May 2017, National Workshop: Pilot Completion Of Standard Operating Procedure For Interior Detection 6-10 Nov 2017 (Assessment of tools and responsibilities for Standard Operating Procedures (SOPs) between AELB and RMP in prevention, detection and response for nuclear security)}; Operational Management For Detection Of Nuclear And Radioactive Materials In Preparation For SEA Games 2017 (KL 2017), on September 2017- Equipment supply by IAEA; 2 Technical Visit to Observe the Establishment of National Detection Capability In Malaysia.

# Nuclear Security (6)

## Updates on Nuclear Security Implementation of 2017-2018

- ◆ **Mongolia:** Radiation Portal Monitors (RPMs) installed at new international airport in cooperation with U.S.DOE; Organized “Train the trainer” course on border control in cooperation with DOE; participated in the United States and China jointly hosted a regional workshop on Counter Nuclear Smuggling from July 10 - 12, 2018.
- ◆ **Philippines:** Review and updated the INSSP in April 2018. IAEA NSSC mission was conducted in July 2018 for assessment and gap analysis with stakeholders in order to establish a National Nuclear Security Support Center. PNRI mobile expert support team participated in the 2 major public events 2017.

# Nuclear Security (7)

## Updates on Nuclear Security Implementation of 2017-2018

- ◆ **Thailand:** Hosting International Tabletop Exercise on Nuclear Forensics “Destiny Elephant” on 5 - 8 March 2018; National Crisis Management Exercise (CMEX-18) March – June 2018; The subsidiary regulations under Nuclear Energy for Peace Act were approved by the ordinance committee reviewing (CPPNM, prevention and suppression of the financial support of terrorism, and the proliferation of weapons of mass destruction). Enactment of CTBT Act on 27 July 2018. INSSP submission to IAEA in 2018.
- ◆ **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; International Response Training Course on Nuclear Plan for Radiation facility in Apr. 2018, Security Plan for Radiation facility in May. 2018; Workshop on Contingency Plan, Site Security Plan Development in Jul. 2018.

# 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, U.S.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, U.S.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.

# Nuclear Security Culture (2)

## Methods and Plans to Foster Nuclear Security Culture

- ◆ **Indonesia:** Introduction of the concept and terms of nuclear security culture to all stakeholders in 2018, CSCA/BATAN: conducting self-assessment on nuclear security culture for radioactive source facility in Pasar Jumat (2018); develop nuclear security practical pocket book (in progress), 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); Indonesia shared experience on self assessment of nuclear security culture at research reactor, the report submitted to the TECDOC CRP on nuclear security culture enhancement solutions.
- ◆ **Japan:** NRA Commissioner holds nuclear security culture briefings for executives of operators and conducts interviews to executives of operators individually.
- ◆ **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.



# Nuclear Security Culture (3)

## Methods and Plans to Foster Nuclear Security Culture

- ◆ **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:** National Workshop on Nuclear Security Culture and Self-Assessment – Oct 2017; Train the Trainers Workshop on Nuclear Security Culture and Self-Assessment – Nov 2017; Seminar for Senior Managers On Nuclear Security Culture and National Workshop on Nuclear Security Culture – Mar 2017 (Workshop involve Various Agency: Universiti Kebangsaan Malaysia, Ministry of Health, Fire Briged, AELB, Universiti Teknologi Malaysia); Malaysia shared experience on self assessment of nuclear security culture at Ampang hospital in kuala Lumpur, the report submitted to the TECDOC CRP on nuclear security culture enhancement solutions; In March 2018, expert mission to support nuclear security culture self assessment conduct.

# Nuclear Security Culture (4)

## Methods and Plans to Foster Nuclear Security Culture

- ◆ **Mongolia:** continuous training
- ◆ **Philippines:** Incorporation of nuclear security culture in all security trainings for licensees.
- ◆ **Thailand:** Continuous training, stakeholder communications, and revision of regulations and guidelines under the Nuclear Energy for Peace Act.
- ◆ **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	
<b>Bangladesh</b>	TBD / BAEC, BAERA	Planned	International/ Domestic	○	○	Border control	IAEA, US/DOE, Russia, JAEA, FNCA
<b>China</b>	SNSTC(COE)/ SNSTC(COE)	In operation	International/ Domestic	○	○	Border control	IAEA, US/DOE
<b>Indonesia*<sup>1</sup></b>	BAPETEN ETC, BATAN CET / BAPETEN, BATAN	In operation	International/ IAEA courses	○	○		IAEA, US/DOE, APSN, PNTR, JAEA
<b>Japan</b>	ISCN / ISCN	In operation	International /Domestic/ IAEA courses	○	○		IAEA, US/DOE, EC/JRC
<b>Kazakhstan</b>	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.

\*2 BAPETEN ETC will be hosted 3<sup>rd</sup> regional school on nuclear security in October 2018.

# 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	
<b>ROK</b>	<b>INSA / INSA</b>	In operation	International /Domestic/ IAEA courses	○	○	Export control	IAEA, US/DOE
<b>Malaysia</b>	<b>NSSC / AELB</b>	Training class and Testing Lab in operation		○		Border control	IAEA, ANSTO, US/DOE
<b>Mongolia</b>	<b>TBD / NEC</b>			○		Border control	US/DOE, IAEA
<b>Philippines</b>	<b>PNRI</b>	Establishing a NSSC	Licensee, FLO and other government agencies	○			IAEA, US/DOE
<b>Thailand</b>	<b>TBD / OAP, ILEA,DFT*1</b>	Under Consideration	Domestic Competence Authorities	○	○	Border control	IAEA, ASNO, US/DOE, JAEA
<b>Vietnam</b>	<b>TSCNSS / VARANS</b>	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 is underway.

**Thailand:** Office of Atoms for Peace (OAP), International Law Enforcement Academy Bangkok (ILEA), Chulalongkorn University.

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