



INDONESIA-CENTER OF EXCELLENCE ON NUCLEAR SECURITY and EMERGENCY PREPAREDNESS

*Langkah Strategis
Untuk Membangun Sistem Keamanan Nuklir dan
Kesiapsiagaan Nuklir INDONESIA*

Untuk menjamin
KEAMANAN NUKLIR NASIONAL



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DKKN - BAPETEN

Konferensi Informasi Pengawasan BAPETEN
Jakarta, 12 Mei 2016



NAWA CITA



NAWA CITA

JOKO WIDODO - JUSUF KALLA
2014 - 2019

1. MENGHADIRKAN KEMBALI NEGARA UNTUK MELINDUNGI SEGENAP BANGSA DAN MEMBERIKAN RASA AMAN PADA SELURUH WARGA NEGARA
2. MEMBUAT PEMERINTAH TIDAK ABSEN DENGAN MEMBANGUN TATA KELOLA PEMERINTAH YANG BERSIH, EFEKTIF, DEMOKRATIS, DAN TERPERCAYA
3. MEMBANGUN INDONESIA DARI PINGGIRAN DENGAN MEMPERKUAT DAERAH-DAERAH DAN DESA DALAM KERANGKA NEGARA KESATUAN
4. MENOLAK NEGARA LEMAH DENGAN MELAKUKAN REFORMASI SISTEM DAN PENEGAKAN HUKUM YANG BEBAS KORUPSI, BERMARTABAT DAN TERPERCAYA
5. MENINGKATKAN KUALITAS HIDUP MANUSIA INDONESIA
6. MENINGKATKAN PRODUKTIVITAS RAKYAT DAN DAYA SAING DI PASAR INTERNASIONAL
7. MEWUJUDKAN KEMANDIRIAN EKONOMI DENGAN MENGGERAKAN SEKTOR STRATEGIS EKONOMI DOMESTIK
8. MELAKUKAN REVOLUSI KARAKTER BANGSA
9. MEMPERTEGUH KE-BHINEKAAN DAN MEMPERKUAT RESTORASI SOSIAL INDONESIA



SIAPKAH KITA?!



KILAS DUNIA: NSS



- Indonesia berperan aktif dalam keamanan nuklir global, melalui Nuclear Security Summit (NSS)
- NSS : Kerja sama global dalam peningkatan keamanan nuklir menghadapi bahaya terorisme dan penyalahgunaan zat radioaktif dan bahan nuklir.
 - ❑ NSS-I, 2010 di Washington: dihadiri Wapres RI, diikuti oleh 47+ negara dan 4 organisasi internasional
 - ❑ NSS-II, 2012 di Seoul: dihadiri Presiden RI.
 - ❑ NSS-III, Maret 2014 di Den Haag, Belanda, dihadiri Wapres RI .
 - ❑ NSS-IV, Maret 2016, Washington, dihadiri Wapres RI
- **Kutipan pidato Presiden RI dalam NSS 2012:**
 - *While Indonesia has had a good and proven record in arresting and disrupting terrorist cells in our country, a scenario where nuclear weapons were to fall into the hands of terrorists would lead to catastrophe. To pre-empt this, apart from national measures, we need regional and multilateral cooperation.*
 - *As for Indonesia, we have undertaken significant measures, among others: **We are installing numerous radioactive portal monitors in our ports.***



POTENSI ANCAMAN NASIONAL



PETA PEMANFAATAN TENAGA NUKLIR DI INDONESIA



Potential Nuclear Security Events

Nuclear Security Events may involve:

- Threats, scams and hoaxes
- Sabotage of a nuclear or radiological facility
- Sabotage of a shipment of radioactive material
- Contamination of food, water, air
- Illicit trafficking
- Theft of nuclear or radioactive material
- Radiological Dispersal Device (RDD)
- Improvised Nuclear Device (IND)
- Radiological Exposure Device (RED)



Spent fuel storage



Nuclear missile warhead



Plutonium-gallium alloy ingot



FAKTA KEJADIAN (1)



Nuclear Security Events involving Nuclear and Radioactive Material out of Regulatory Control

2656 incidents were confirmed to the IAEA from 1993 to 2014:

- 439 involved unauthorized possession (32 of which involved HEU or Pu)
- 710 involved theft or loss of materials,
- 1455 involved other unauthorized activities and events

- Moldovan authorities arrest suspects attempting to sell **HEU** (*June 2011*)
- Georgian authorities halt the sale of ~14 grams of **HEU** (*March 2010*)
- Argentine authorities recovered a 74 GBq (~2.5 Ci) **caesium-137** well-logging source stolen at gunpoint from a storage facility (*February 2009*)
- **Cobalt-60** source in scrap yard in India (*April 2010*)





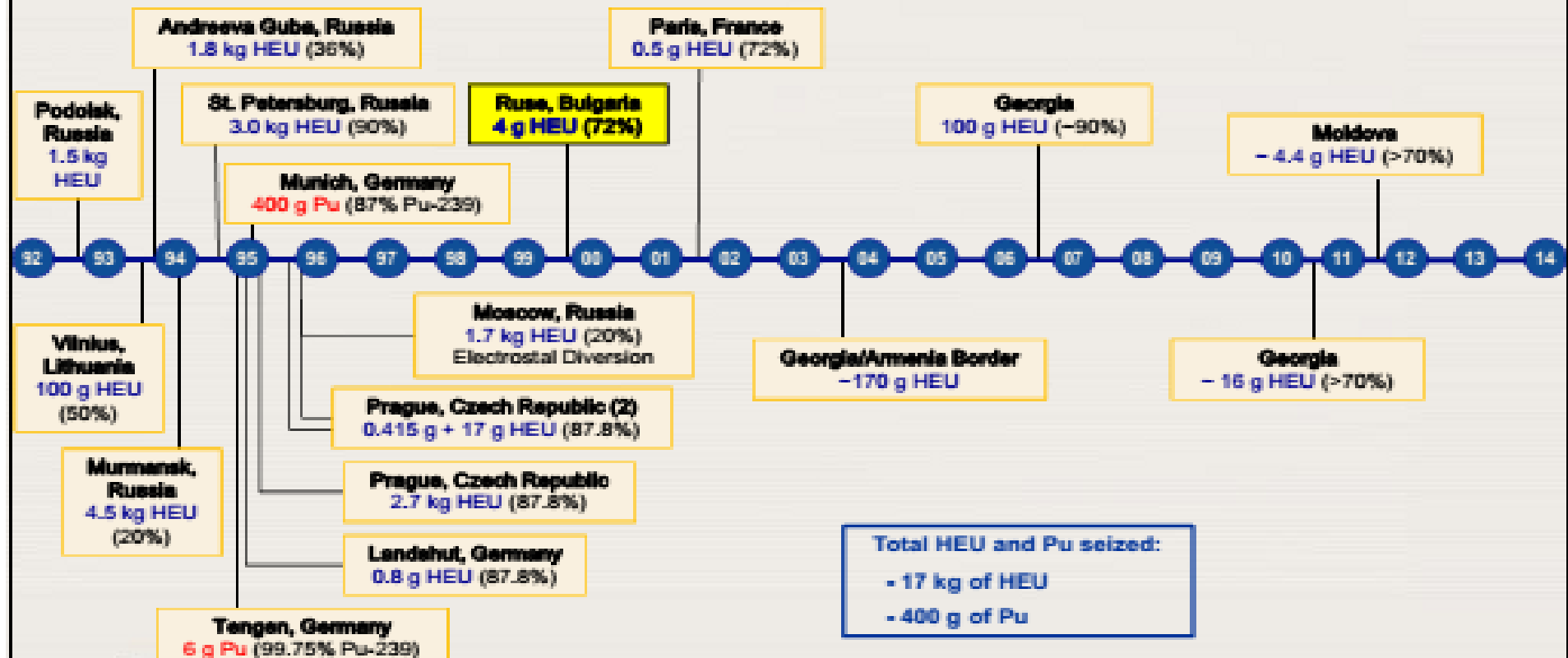
FAKTA KEJADIAN (2)



Known Criminal Acts

- **France: La Hague reprocessing plant (1978)**
 - An employee tried to kill his employer with **radioactive discs** which he placed under the seat of his employer's car
- **Russia: Izmailovo Park Moscow (1995)**
 - A television reporter receives a tip off that a **radioactive weapon** had been hidden in Izmailovo Park, eastern Moscow
 - Following an extensive search, a container containing Caesium-137 strapped to sticks of dynamite was discovered
- **Germany: WAK- small scale reprocessing plant in Karlsruhe (2001)**
 - A man **stole plutonium** from his work site and was suspected of attempting to poison his ex-wife
- **England: London (2006)**
 - The **poisoning** of Alexander Litvinenko with Polonium-210

HEU and Pu, intercepted and seized: *The Threat is Real*



Nuclear Security



Prevention



Detection



Response

... to theft, sabotage, unauthorized access, illegal transfer or other malicious acts involving nuclear material, other radioactive substances or their associated facilities.



STRATEGI IMPLEMENTASI



1. Melengkapi dan mencukupkan infrastruktur, SDM, SOP
2. Program pelatihan terpadu
3. Operasi terpadu (cegah, tangkal, tangkap/lumpuhkan) dengan system PERTAHANAN BERLAPIS (*DEFENCE IN DEPTH*):
 - a) Intelejen
 - b) Pengamanan maritim
 - c) Pengamanan daerah perbatasan
 - d) Pengamanan daerah kepabeanaan
 - e) Pengamanan Obyek Vital
 - f) Penegakan Hukum
4. Koordinasi dan kerjasama Nasional, Regional dan Internasional.



STATUS TERKINI (1)



1. Organisasi Tanggap Darurat Nuklir Nasional (NERO) dan NERHQ
2. Office I-CONSEP (diresmikan Menristek RI, Desember 2015)
3. MoU BAKAMLA-BAPETEN
4. MoU DJBC-BAPETEN (sedang proses)
5. Koordinasi Notifikasi dg IAEA:
 - a) *NCA-A (National Competent Authority-Abroad)*
 - b) *NCA-D (National Competent Authority-Domestic)*
 - c) *NWP (National Warning Point)*
 - d) *ITDB (Incident Trafficking Data Base)*
6. Sistem RDMS/EWS dan RPM:
 - a) 9 RDMS-EWS,
 - b) 7 RPM (dari 4 pelabuhan Utama 14 Pelabuhan Kelas I) /172
 - c) Bandara dan perbatasan belum terpasang
7. Detasemen KBR, POLRI
8. Kompi Nubika, TNI-AD
9. Program pelatihan untuk FLO dan FR



STATUS TERKINI (2)



**Peraturan Menteri Perhubungan No. KM. 9 Tahun 2008
Ttg Organisasi dan Tata Kerja Kantor Administrator Pel..**

No.	Nama Pel. Utama	RPM	Keterangan
1.	Pel Tanjung Priok, Jakarta.	1	DJBC
2.	PelTanjung Perak, Surabaya.	1	DJBC
3.	Pel Belawan, Medan.	1	Syahbandar
4.	Pel Soekarno – Hatta, Makasar	1	2015

Jenis Pelabuhan	Jumlah
Pelabuhan Utama	4
Pelabuhan Kelas I	13
Pelabuhan Kelas II	11
Pelabuhan Kelas III	15
Pelabuhan Kelas IV	16
Pelabuhan Kelas V	40
Wilayah Kerja	73
Total	172

No.	Nama Pel. Kelas I	RPM	Keterangan
1	Pel. Dumai	-	
2.	Pel. Batu Ampar Batam	1	BP Batam
3.	Pel. Teluk Bayur Padang	-	
4.	Pel. Palembang	-	
5.	Pel. Panjang Lampung	-	
6.	Pel. Banten Cilegon	-	
7.	Pel. Tanjung Emas, Semarang	-	2016
8.	Pel. Benoa Bali	-	
9.	Pel. Pontianak Kal Bar	-	
10.	Pel. Banjarmasin Kal Sel	-	
11.	Pel. Balikpapan Kal Tim	-	
12.	Pel. Bitung Sul Ut	1	2014
13.	Pel. Ambon Maluku	-	
14.	Pel. Sorong Papua	-	

NKRI vs ASEAN

Country	Total	
	Site	RPMs
Cambodia	4	26
Indonesia	7	7
Malaysia	4	48
Philippines	2	16
Singapore	1	?
Thailand	2	32
Vietnam	3	8?



STATUS TERKINI (3)



PROGRAM PELATIHAN:

I. GLADI LAPANG:

Gladi Lapang Nasional penanggulangan kedaruratan nuklir/radiologi :

1. Terorisme Bom-Kotor (Radiological Dispersal Device/RDD), Jakarta-2004
2. Sabotase Reaktor Nuklir, Serpong-2010
3. Sabotase Reaktor Nuklir, Serpong-November 2016
4. Kejahatan transportasi ZRA: Yogya, Surabaya, Bandung
5. Kejahatan/penyelundupan ZRA (Latihan Bersama BAKAMLA -BAPETEN):
 - ✓ Ambon, Desember 2015
 - ✓ Batam, Maret 2016

II. PENDIDIKAN DAN LATIHAN:

- ✓ Front Line Officer (FLO): Bea Cukai, POLRI, dan otorita Pelabuhan
- ✓ First Responder (FR): POLRI, TNI-AD, PMK, KemenKes

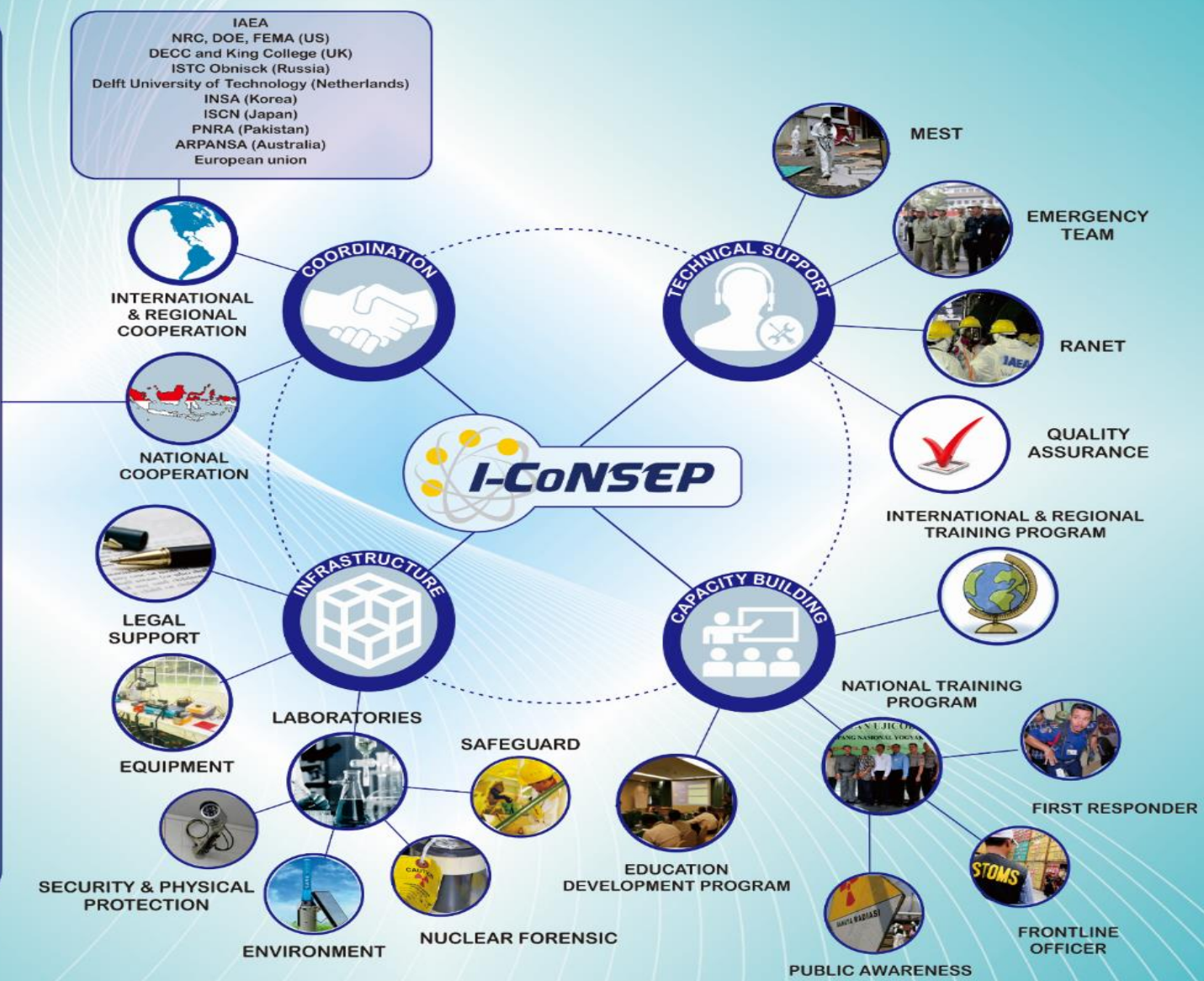


I-CONSEP : SOLUSI STRATEGIS



BAPETEN	BNPT
MINISTRY OF FOREIGN AFFAIRS	MINISTRY OF FINANCE
POLICE	BATAN
TNI AD	BAKAMLA
MINISTRY OF DEFENSE	MINISTRY OF HEALTH
BNPB	METEOROLOGY, CLIMATOLOGY AND GEOPHYSICS AGENCY
MINISTRY OF TRANSPORTATION	STATE INTELLIGENCE AGENCY

IAEA
NRC, DOE, FEMA (US)
DECC and King College (UK)
ISTC Obnisk (Russia)
Delft University of Technology (Netherlands)
INSA (Korea)
ISCN (Japan)
PNRA (Pakistan)
ARPANSA (Australia)
European union



SINERGI KEMENTRIAN/LEMBAGA



UU.NO.10 / 2014

PENGESAHAN KONVENSI
INTERNASIONAL PENANGGULANGAN
TINDAKAN TERORISME NUKLIR

UU.NO.10 / 1997

ttg
KETENAGANUKLIRAN



- GR No. 02 year 2014 on licensing of nuclear Reactor
- GR No. 54 year 2012 on Safety and Security of nuclear instalation
- GR No. 33 year 2007 on ionizing radiation Safety and Security of radioactive sources
- GR No. 29 year 2008 on licensing of utilization of radioactive sources and nuclear material
- BCR No. 1 year 2009 on Physical Protection System of Nuclear Material and Installation
- BCR No. 7 year 2007, on Security of Radioactive Source
- BCR No. 4 year 2011 on Safeguards System
- BCR No. 9 year 2006 on Implementation of Additional Protocol to the Safeguards Agreement



KERJASAMA INTERNASIONAL



NKRI





KESIMPULAN



1. **The Threat is Real**
2. Perlu segera memperkuat Sistem Keamanan Nuklir Nasional yang handal dengan:
 - a) Penguatan aspek hukum
 - b) Peningkatan dan penguatan kerjasama dan sinergi lintas Kementrian/Lembaga
 - c) Peningkatan kemampuan infrastruktur, SDM
 - d) Pemasangan dan operasi peralatan pengawasan on-line atau EWS secara terpadu (RPM, RDMS) di berbagai titik/area penting/obyek vital.
 - e) Pelatihan SDM
3. Peningkatan kerjasama Nasional, Internasional

TERIMA KASIH



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