
# Regulatory Aspect on Emergency Response Roles, Responsibilities and Preparedness Program for Nuclear Facilities in Indonesia

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TENAGA NUKLIR

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BRIN-JAEA FOLLOW-UP TRAINING COURSE ON RADIOLOGICAL EMERGENCY PREPAREDNESS AND RESPONSE
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# BIODATA

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# Outline

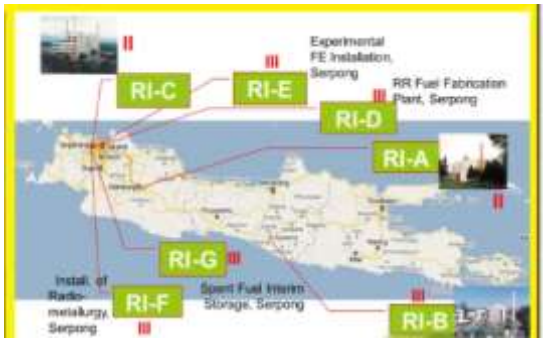
- Abbreviation
- Nuclear Energy Utilization in Indonesia
- Background
- Regulations related to EPR
- EPR Activities
- Challenges & Conclusion

# Abbreviation

- RI: Republic of Indonesia
- GoI: Government of Indonesia
- NERA: Nuclear Energy Regulatory Agency (Bapeten)
- NRIA: National Research and Innovation Agency (BRIN), formerly National Nuclear Energy Agency (BATAN)
- NDMA: National Disaster Management Authority (BNPB)
- NNERO: National Nuclear Emergency Response Organization (OTDNN)
- NCA-A: National Competent Authority Abroad
- NCA-D: National Competent Authority Domestic
- NWP: National Warning Point
- Nuclear Preparedness is a series of systematic and planned activities to anticipate nuclear emergencies by providing infrastructure elements and response function capabilities to carry out nuclear emergency response quickly, precisely, effectively and efficiently.

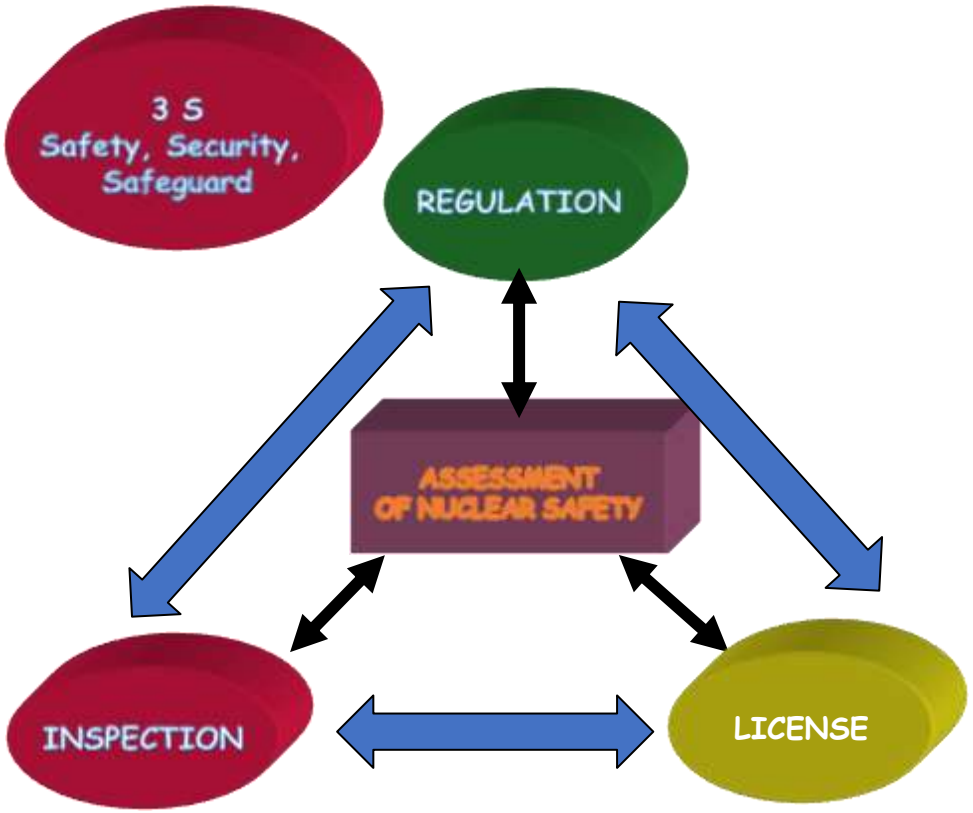
# Nuclear Energy Utilization in Indonesia

- **Indonesia uses radioactive for various purposes:** industrial, medical and research.
- There are 3 nuclear reactors: Kartini Reactor in Yogyakarta (EPC III), Triga Mark II Reactor in Bandung (EPC II), **Multipurpose Reactor *GA* Siwabessy (RSG-*GAS*) in Serpong (EPC II)**, Some nuclear installation: Radioactive Waste Treatment Installation (EPC III), Radioisotope and Radiopharmaceutical Production (EPC III).
- Many radioactive source facilities/activities use in industrial and medical scattered throughout Indonesia (EPC III and IV).
- **Radiation emergency response in Indonesia is a collaboration** among stakeholders in line with the roles and functions of related authority/institution and based on the magnitude of emergency.

# Regulatory Aspect

- Nuclear energy regulation is carried out to ensure the safety, security, and health of workers and the public, and the protection of the environment.
- Act Number 10 of 1997 on Nuclear Energy gives authority to the Nuclear Energy Regulatory Agency (BAPETEN) to carry out the three main pillars of supervision of all nuclear energy application, consist of: the regulations, the license, and the inspections.
- The three main pillars of nuclear power utilization supervision have technical support in the form of nuclear safety assessments which are tasked with providing technical support for the main supervision program (Decision Support System).
- The Directorate of Technical and Nuclear Preparedness (DKKN) has a function of managing supervisory infrastructure, nuclear preparedness and quality assurance in the implementation of nuclear energy supervision.



# Regulatory Objectives

1. Ensuring the welfare, security, and peace of the public;
2. Ensuring the safety and health of workers, and public, also environmental protection;
3. Maintaining legal order in the implementation of nuclear energy application;
4. Increase the legal awareness of nuclear energy users to create a safety culture;
5. Prevent changes in the purpose of using nuclear materials; and
6. Ensuring the maintenance and improvement of officer discipline in the implementation of the use of nuclear energy.

# Background

- Indonesia has ratified Convention on Early Notification of a Nuclear Accident; and Convention on Assistance in Case of a Nuclear Accident or Radiological Emergency through Presidential Decree in 1993.
- Indonesia has designated Contact Points for information exchange in nuclear/radiological emergency (NCA-A, NCA-D, NWP)

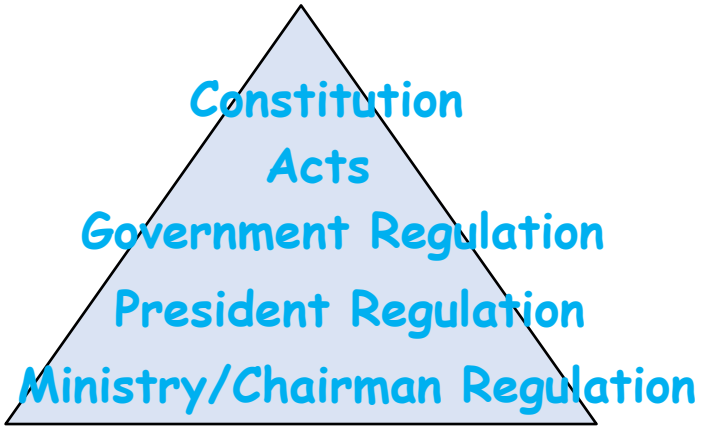
**Emergency Contact Points**

| Organization Name | NWP | CA-A | CA-D | CAOC | Mission |
|---|---|---|---|---|---|
| Permanent Mission of Indonesia to the IAEA | | | | | x |
| Nuclear Energy Regulatory Agency (NERA/BAPETEN) | | x | | | |
| Nuclear Energy Regulatory Agency (NERA/BAPETEN) | | | x | | |
| Nuclear Energy Regulatory Agency (NERA/BAPETEN) | x | | | | |

# Regulations related to EPR

# Hierarchy of Law

- Act No. 10/1997 on Nuclear Energy
- Government regulation No. 45/ 2023: Safety of Ionizing Radiation and Radioactive Sources Security
- Government regulation No. 58/ 2015: Radiation Safety and Security in Transport of Radioactive Material
- Government regulation No. 2/ 2014: Licensing of Nuclear Installation and Utilization of Nuclear material
- Government regulation No. 61/2013: Radioactive Waste Management
- Government regulation No. 54/ 2012: Safety and Security of Nuclear Installation
- Presidential decree No. 82/ 1993: Ratification of Convention on Assistance in the Case of a Nuclear Accident or Radiology Emergency
- Presidential decree No. 81/ 1993: Ratification of Convention on Early Notification of a Nuclear Accident
- Presidential Instruction (INPRES) Number 4 of 2019 concerning Increasing Capacity in Preventing, Detecting and Responding to Disease Outbreaks, Global Pandemics and Nuclear, Biological and Chemical Emergencies
- BAPETEN Chairman Decree No. 1/2010 on Nuclear Emergency Preparedness and Response → being revised to be in line with GSR part 7.
- BAPETEN Chairman Decree No. 1/2015 on Emergency Response Management



# Government Regulation No 54 Year 2012 on Safety and Security of Nuclear Installation

## Scope

Nuclear safety and security in facilities consist of:

a. Technical of nuclear installation safety;
b. Technical of nuclear installation security;
c. Safety and security management; and
d. Nuclear preparedness and emergency response.

**Article 3**

G.A.- SIWABESSY-SERPONG
Since 1983 (30 MWth)

TRIGA-BANDUNG
Since 1965 (2 MWth)

KARTINI-YOGYAKARTA
Since 1974 (100 KWth)

PERATURAN PEMERINTAH REPUBLIK INDONESIA

NOMOR 54 TAHUN 2012

TENTANG

KESELAMATAN DAN KEAMANAN INSTALASI NUKLIR

DENGAN RAHMAT TUHAN YANG MAHA ESA

PRESIDEN REPUBLIK INDONESIA,

Menimbang : bahwa untuk melaksanakan ketentuan Pasal 16 ayat (2) Undang-Undang Nomor 10 Tahun 1997 tentang Ketenaganukliran, perlu menetapkan Peraturan Pemerintah tentang Keselamatan dan Keamanan Instalasi Nuklir;

Mengingat : 1. Pasal 5 ayat (2) Undang-Undang Dasar Negara Republik Indonesia Tahun 1945;
2. Undang-Undang Nomor 10 Tahun 1997 tentang Ketenaganukliran (Lembaran Negara Republik Indonesia Tahun 1997 Nomor 23, Tambahan Lembaran Negara Republik Indonesia Nomor 3676);

MEMUTUSKAN:

Menetapkan : PERATURAN PEMERINTAH TENTANG KESELAMATAN DAN KEAMANAN INSTALASI NUKLIR.

Experimental Fuel Element Installation

Installation of Radiometallurgy

Research Reactor Fuel Fabrication Installation (PT. INUKI)

Center for Radioactive Waste Management

# Nuclear Preparedness and Emergency Response

Nuclear Preparedness and Emergency Response consists of:

a. Nuclear preparedness;
b. Nuclear emergency; and
c. Nuclear emergency response.

Nuclear Preparedness consists of:

a. Nuclear preparedness in installation level;
b. Nuclear preparedness in province level; and
c. Nuclear preparedness in national level.

Nuclear preparedness is carried out based on Nuclear Preparedness Program, which is one of the license requirement

# Nuclear Preparedness Arrangement

Nuclear preparedness program is arranged by:

a. License holder, for installation level;

b. Head of Regional Disaster Management Agency, for province level; and

c. Head of National Disaster Management Agency, for national level.

- For province nuclear preparedness program arrangement, the Head of Regional Disaster Management Agency coordinates with the license holder, BAPETEN, and other related agencies. The provincial nuclear preparedness program is part of the provincial disaster preparedness program.
- For national nuclear preparedness program, arrangement, as referred to paragraph (3) letter c, the Head of National Disaster Management Agency coordinates with the license holders, BAPETEN, and other ministries and/or non-ministerial institutions. The national level nuclear preparedness program as referred in paragraph (3) letter c is part of the national disaster preparedness program.

# Potential Radiological Hazard Category

- Nuclear preparedness programs are structured continuously, non-conflicting, and based on the category of potential radiological hazards.

- ✓ Category I:

  nuclear installations with a very large potential hazard that are able to produce radioactive releases outside the nuclear installations so that they have a serious deterministic impact on health

  Serious deterministic impact is the impact of radiation hazards with acute radiation dose levels

- ✓ Category II:

  Nuclear installations with potentially hazardous properties capable of producing radioactive releases and causing an increase in public doses, requiring immediate protective measurement

- ✓ Category III:

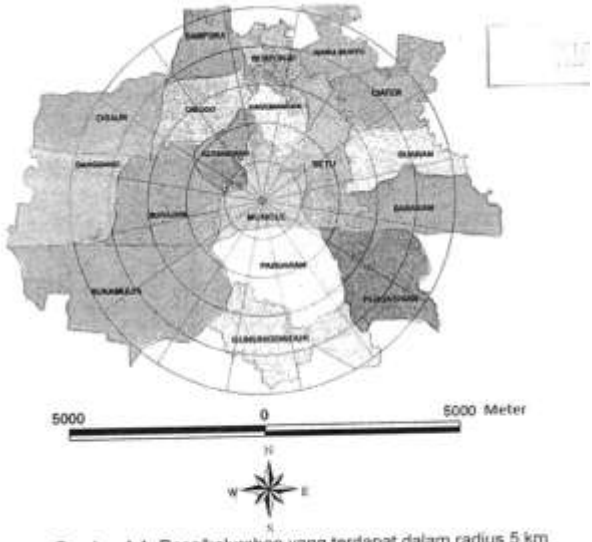
  Nuclear installations without external potential hazards but require immediate protective measurement onsite the nuclear installation

# Potential Hazard of Multipurpose Reactor *Reaktor Serba Guna GA. Siwabessy* (RSG-GAS)

*Nuclear Prepadenss Facility Program RSG-GAS, No : 001.001/KN 01 02/RSG 4

- (RSG-GAS) is a 30 MW research reactor which is categorized as EPC II
- RSG-GAS is administrate located in Muncul, Setu District, South Tangerang Regency, Banten Province. The straight line distance to Jakarta is approximately 27 km south-west of Jakarta, 36 km north of Bogor City, 22 km south of South Tangerang City and 30 km from the northern coastline of Banten Province.

**G.A.- SIWABESSY-SERPONG**
**Since 1983 (30 MWth)**




Gambar 1.1. Desa/kelurahan yang terdapat dalam radius 5 km dari Kawasan Nuklir Serpong

# Nuclear Preparedness Program

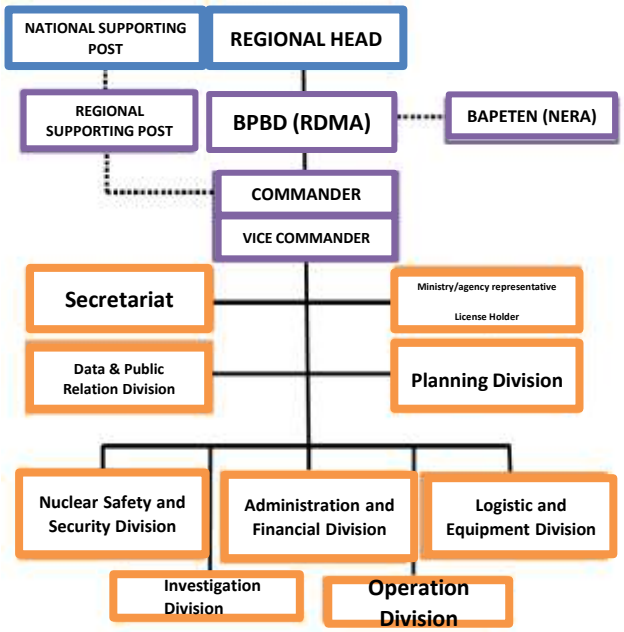
- The nuclear preparedness program includes infrastructure and response functions.
- The infrastructure consists at least the following elements:
  a. organization;
  b. coordination;
  c. facilities and equipment including early warning and alarm equipment;
  d. response procedures; and
  e. nuclear emergency training and drill.
- Response functions consist of at least:
  a. Identification, reporting, and activation;
  b. mitigation measurement;
  c. immediate protective measurement;
  d. protective measures for nuclear emergency response personnel, workers, the public, and the environment; and
  e. providing information and instructions to the public.

# Nuclear Preparedness in Installation Level

- Installation-level nuclear preparedness must be implemented by the license holder based on the installation-level nuclear preparedness program.
  To ensure that the installation-level nuclear preparedness program can be implemented, the license holder must organize installation-level nuclear emergency training and drills at least 1 (one) time in 1 (one) year.

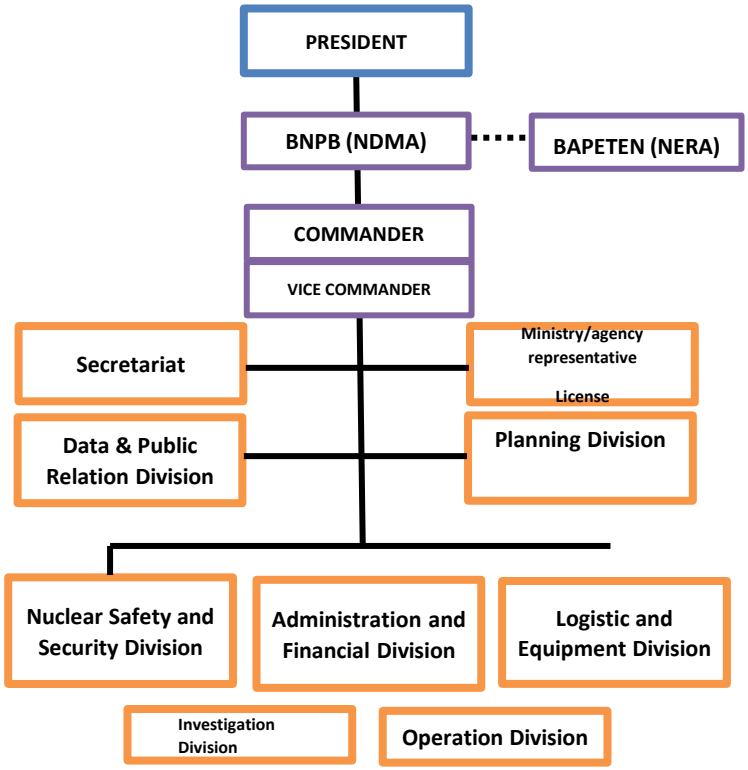
# Nuclear Preparedness in Province Level

- Provincial nuclear preparedness is coordinated by the Head of Regional Disaster Management Agency and implemented together with license holders and related agencies based on the provincial nuclear preparedness program.
- The term "related agencies" includes the fire department and health department.
- The Head of Regional Disaster Management Agency coordinates nuclear emergency training and drills in an integrated manner in accordance with the provincial nuclear preparedness program.
- License holders and related agencies are required to participate in provincial nuclear emergency training and drills. By implementing nuclear emergency training and drills conducted at the provincial level, permit holders can be deemed to have implemented nuclear emergency training and drills for the nuclear installation level in the year in which the provincial nuclear emergency training and drills are implemented.
- Nuclear emergency training and drills are held at least 1 (one) time in 2 (two) years.



# Nuclear Preparedness in National Level

- National level nuclear preparedness by the Head of The National Disaster Management Agency and implemented together with license holders and related ministries and/or non-ministerial institutions in accordance with the national level nuclear preparedness program.
- The National Disaster Management Agency coordinates nuclear emergency training and drills as referred to in Article 67 paragraph (2) letter e in an integrated manner in accordance with the national level nuclear preparedness program.
- License holders and related ministries and/or non-ministerial institutions are required to participate in national level nuclear emergency training and drills. By implementing nuclear emergency training and drills conducted at the national level, license holders can be deemed to have implemented nuclear emergency training and drills for the installation level in the year in which the national level nuclear emergency training and drills are implemented.
- Nuclear emergency training and drills are held at least 1 (one) time in 4 (four) years.



# Nuclear Emergency

- Nuclear emergency consists of:
  a. Nuclear emergency in installation level;
  b. Nuclear emergency in province level; and
  c. Nuclear emergency in national level.

- Installation nuclear emergency is determined if the condition is exceeding the design based.
- Nuclear emergency in installation level is declared by the license holder.

# Nuclear Emergency in Province Level

- The condition for nuclear emergency in province level:
  a. Dose rate 5 μSv/jam (five mikro Sievert per hour) or more for 10 (ten) minutes or more on the installation boundary; and/or
  b. Abnormal radioactive release with air activity concentrations equal to or exceeding a dose rate of 5 μSv/hour (five micro Sieverts per hour) at the installation boundary detected from the normal release path.

- In the event of a condition as referred to in paragraph (1), the governor shall declare a provincial nuclear emergency status based on the recommendation of the Head of BAPETEN

# Nuclear Emergency in National Level

- The condition for nuclear emergency in province level:
  a. Dose rate 500 μSv/jam (five hundred mikro Sievert per hour) or more for 10 (ten) minutes or more on the installation boundary; and/or
  b. Abnormal radioactive release with air activity concentrations equal to or exceeding a dose rate of 500 μSv/hour (five micro Sieverts per hour) at the installation boundary detected from the normal release path.

- In the event of a condition as referred to in paragraph (1), the President shall declare a provincial nuclear emergency status based on the recommendation of the Head of BAPETEN

# Nuclear Emergency Responses

- Nuclear emergency response consists of:
  - nuclear emergency response at the installation level;
  - nuclear emergency response at the provincial level; and
  - nuclear emergency response at the national level.
- Nuclear emergency response includes the following activities:
  - identification of nuclear emergencies, determination of nuclear emergency status, response level, reporting to relevant agencies, and activation of the nuclear emergency response team;
  - actions to limit and reduce the impact of radiation, radiation exposure conditions, and/or contamination in the event of a nuclear emergency;
  - actions to provide temporary shelter, evacuation, and/or provision of iodine tablets;
  - use of radiation protection equipment, monitoring the radiation dose received and controlling contamination of radioactive substances so that it always complies with acceptable limit values, actions for response officers who are exposed to excessive exposure, and providing instructions not to consume food suspected of being contaminated with radioactive substances; and/or
  - providing information and instructions to workers and the surrounding community quickly and accurately and providing information to the media.
- In implementing nuclear emergency response, permit holders are required to prioritize human safety.
- Nuclear emergency response activities are carried out in accordance with the nuclear preparedness program.

# Nuclear Emergency Responses in Installation Level

- In the event of a nuclear emergency at the installation level, the license holder is required to carry out nuclear emergency response activities at the installation level.
- The implementation of response activities must be reported in writing and periodically every day by the license holder to the Head of BAPETEN until the termination of nuclear emergency at the installation level is declared.

# Nuclear Emergency Response at The Provincial Level

- In the event of nuclear emergency in province level:
  a. The Head of Regional Disaster Management Agency initiates and leads the nuclear emergency response; and
  b. the license holder is obliged to participate in nuclear emergency response.
- The mechanism for responding to nuclear emergencies at the provincial level is implemented in accordance with laws and regulations.
- The governor declares that the provincial nuclear emergency response has ended.
- The provincial nuclear emergency response is declared terminate by the governor based on considerations from the Head of BAPETEN.
- In the event that the nuclear emergency response has been declared terminate, the governor declares that the provincial nuclear emergency status has terminated based on a written recommendation from the Head of BAPETEN.

# Nuclear Emergency Response at The National Level

- In the event of a national nuclear emergency:
  a. the Head of The National Disaster Management Agency initiates and leads nuclear emergency response; and
  b. license holders are required to participate nuclear emergency response.
- The mechanism for national nuclear emergency response is implemented in accordance with laws and regulations.
- The President declares that national nuclear emergency response has terminated.
- National nuclear emergency response is declared terminate by the President based on considerations from the Head of BAPETEN.
- In the event that nuclear emergency response has been declared terminate, the President declares the status of national nuclear emergency to have terminated based on a written recommendation from the Head of BAPETEN.
- In the event that provincial nuclear emergency and national nuclear emergency are declared to have terminated, environmental recovery is implemented in accordance with laws and regulations.

# Special Event

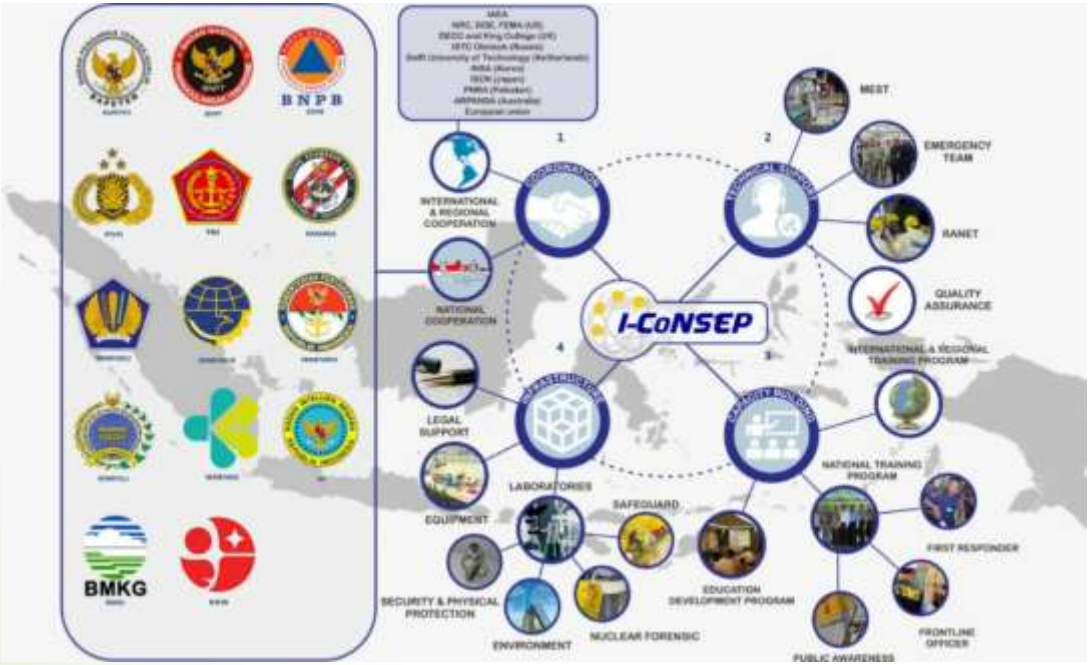
- For the special event, the Head of BAPETEN leads the response action.
- Special incidents include:
  a. Orphan radioactive sources or nuclear materials found; and
  b. release of radioactive substances and contamination from other countries.
- The term "release of radioactive substances from other countries" means radioactive substances released from nuclear installations that passing through the borders of the country where the nuclear installation is located.
- In mitigation action, the Head of BAPETEN may request assistance from and/or coordinate with National Disaster Management Agency and/or related agencies.
- Special events response are carried out in accordance with the technical guidelines established by the Head of BAPETEN.

# Supervision and Reporting

- BAPETEN supervises the nuclear preparedness program at the installation, provincial, and national levels.
- License holders are obliged to report to the Head of BAPETEN if there are anticipated operational events, basic design accidents, and nuclear emergencies.
- The report must be submitted to the Head of BAPETEN verbally immediately no later than 1 (one) hour and in writing no later than 2 (two) times 24 (twenty-four) hours since the anticipated operational event, basic design accident, and nuclear emergency occurred.
- License holders are required to report activities to the Head of BAPETEN to the Head of BAPETEN to implement the response to anticipated operational events, basic design accidents, and nuclear emergencies in their installations.
- The Head of National Disaster Management Agency together with the Head of BAPETEN report the national-level nuclear emergency response activities to the President in accordance with laws and regulations regarding disaster management.
- The Head of BAPETEN provides early notification to the International Atomic Energy Agency and/or to the governments of other countries regarding the occurrence of a nuclear emergency.

# Response Assistance

- National or/and Regional Disaster Management Agency, and BAPETEN may obtain international assistance from international organization, other countries, or non-goverment organization in order to respond the nuclear emergency according to the laws and regulations regarding disaster management.

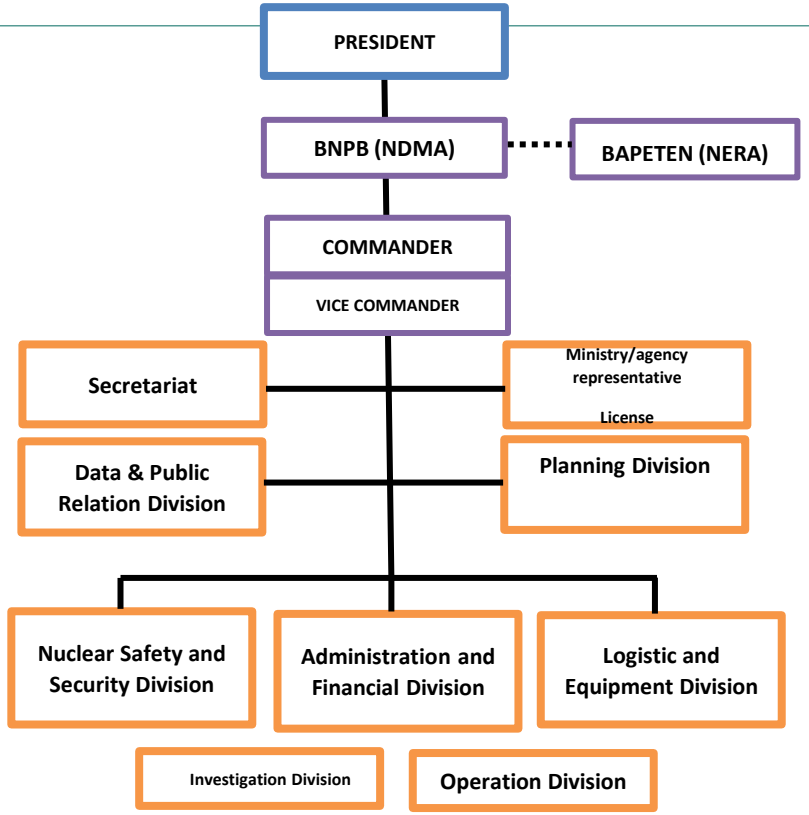


# National Nuclear Emergency Preparedness and Response Guideline

- **The Guideline** was established in 2021. It refers to the IAEA **GSR Part 7** Preparedness and Response for a Nuclear or Radiological Emergency.
- The guideline **revitalized the NNERO structure to be in line with the command and control system of the Disaster Management**.
- **The NNERO consists of various ministries and agencies** that have roles and responsibilities in responding to nuclear/radiological emergencies

# National Nuclear Emergency Preparedness and Response Guideline

| Division | Agency/Ministry |
|---|---|
| Data & Public Relation | BNP'B; BAPETEN; Ministry of Communication and Information |
| Planning | BNPB; BAPETEN; National Research and Innovation Agency; Meteorology, Climatology, and Geophysical Agency; National Development Planning Agency |
| Nuclear Safety and Security | National Army (NBC); Police (CBRNE, Local Police); BAPETEN; National Research and Innovation Agency (Radiological Assessor); Meteorology, Climatology, and Geophysical Agency; National Counter Terrorism Agency |
| Operation | Local Government; Local Emergency Services; National Army; Police; National Search and Rescue Agency; MoH, Ministry of Transportation; Ministry of Environment and Forestry; Ministry of Agriculture; Ministry of Public Works and Housing; Food and Drug Authority; Ministry of Trade |
| Investigation | Police |
| Logistic and Equipment | BNPB; Ministry of Social Welfare; Ministry of Home Affairs; Ministry of Public Works and Housing |
| Administration and Finance | BNPB, Ministry of Home Affairs, Ministry of Finance |



# Presidential Instruction No. 4 of 2019

In order to increase the national resilience in public health emergencies and/or non-natural disasters due to CBRN emergencies, the President instructs Bapeten to:

- strengthen surveillance and improve technical policies, facilities and infrastructure for **monitoring the use of nuclear energy**
- **improve detection and response capabilities for nuclear emergencies** that may arise from safety issues (such as nuclear/radiation accidents) or nuclear security issues (such as sabotage, theft, or misuse of radioactive materials)

# Activity on Enhancing Radiation Emergencies Capacity

- To implement regulations relevant to nuclear emergency preparedness and response as well as Nuclear Security, Bapeten established:

**The I-CoNSEP - INDONESIA CENTRE OF EXCELLENCE ON NUCLEAR SECURITY AND EMERGENCY PREPAREDNESS**

**Consists of 4 Pillars**

(inaugurated in 2014, in collaboration with relevant ministries/agencies)

- Collaboration of relevant stakeholders is crucial in emergency in order to ensure a timely, effective and coordinated emergency response.

# Activity on Enhancing Radiation Emergencies Capacity

**1st Pillar, Coordination:**

Develop and enhance collaboration and synergy with national, regional and international stakeholders

# Activity on Enhancing Radiation Emergencies Capacity

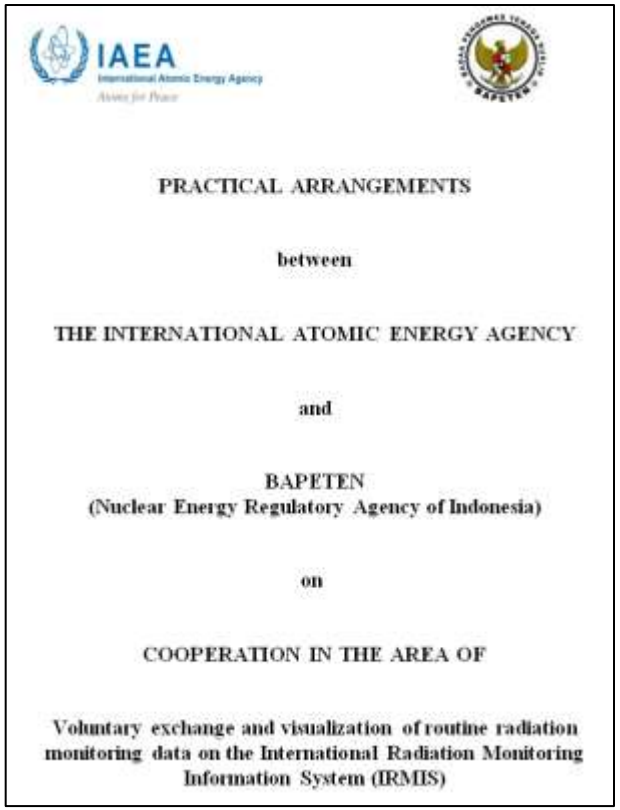
At the international level, coordination can be implemented through several IAEA tools, such as:

- USIE (Unified System for Information Exchange in Incidents and Emergencies)
- IRMIS (International Radiation Monitoring Information System)
- EPRIMS (Emergency Preparedness and Response Information Management System)



# Joining the IRMIS

- In November 2016, the practical arrangement on cooperation in the area of voluntary exchange and visualization of routine radiation monitoring data on the International Radiation Monitoring Information System (IRMIS) between BAPETEN and IAEA has been signed
- Indonesia has been participated in 2 Consultancy Meeting (in November 2016 and April 2017) to support the implementation of this arrangement
- Challenges are:
  - to convert data (automatically) from the user format to the IRIX format
  - to configure the secure file transfer protocol (SFTP) in order to provide an automatically access to the IEC-IAEA to take the IRIX format data



IAEA
International Atomic Energy Agency
Atoms for Peace

PRACTICAL ARRANGEMENTS

between

THE INTERNATIONAL ATOMIC ENERGY AGENCY

and

BAPETEN
(Nuclear Energy Regulatory Agency of Indonesia)

on

COOPERATION IN THE AREA OF

Voluntary exchange and visualization of routine radiation monitoring data on the International Radiation Monitoring Information System (IRMIS)

# Activity on Enhancing Radiation Emergencies Capacity

**2nd Pillar, Technical Support:**

BAPETEN has an Emergency Response Team (ERT) and Mobile Expert Support Team (MEST) to respond to nuclear/radiological emergencies or requests for assistance from stakeholder

**#ALERT: 24/7**

# Activity on Enhancing Radiation Emergencies Capacity

## Government regulation No. 54/ 2012: Safety and Security of Nuclear Installation

Part Five
Special Event

Article 86

(1) If there is Special event, Chairman of BAPETEN will lead the implementation of response measure.
(2) A special event as stipulated in paragraph (1) consists of the existing of :
    a. Orphan sources; and
    b. Transboundary Release of radioactive material and contamination.
(3) In the implementation of response measures, Chairman of BAPETEN may request any assistance to and/or coordinates with NDMA and/or related institution.
(4) Response measures as a result of a special event are performed according to the technical guidance that is established by the Chairman of BAPETEN.

BAPETEN
Emergency Response Team
Regulated on BAPETEN Chairman No 1 Year 2015
on Emergency Response Team Management

# Activity on Enhancing Radiation Emergencies Capacity

**3rd Pillar, Capacity Building:**

- Develop and enhance the ability of First Responder (POLICE, Fire Brigade) and Front Line Officer (FLO) personnel
- Methods: presentation, discussion, simulation, Table Top Exercises (TTE) and Field Exercises(FE)

# Activity on Enhancing Radiation Emergencies Capacity

**Health Radiation Emergencies Capacity Building:**

- Workshop on Radiation Medical Emergency Response for Jakarta Emergency Ambulance in 2016
- National Workshop on Radiation Medical Emergency Response for National Police Center of Medical and Health (PUSDOKKES POLRI) in 2018
- Workshop on Radiation Medical Emergency Response for Ministry of Defense in 2019
- Workshop on Radiation Medical Emergency Response for the Port Health Office in 2019
- Workshop on Radiation Medical Emergency Response for the Health Battalion of National Armed Force in 2020


# Activity on Enhancing Radiation Emergencies Capacity

**Radiation Medical Emergencies Response Simulation**

In order to evaluate the capability of the referral hospitals, the **MoH carried out radiation medical emergency response simulation at Referral Hospitals**. The events were involved medical and radiation protection practitioners.

- In 2021, the simulation was conducted at Fatmawati Hospital in Jakarta, focusing on intra-hospital management services.

# Activity on Enhancing Radiation Emergencies Capacity

**Radiation Emergencies Response Simulation**

- In 2023, a joint emergency exercise was conducted in Yogyakarta with more comprehensive scenario of a nuclear emergency at the BRIN Kartini nuclear reactor, and a managing medical response (pre-hospital and intra-hospital management services)
- The simulation was carried out in collaboration of MoH, BAPETEN and BRIN.
- MoH invited medical EPR expert of the Incident and Emergency Center, IAEA (Hideo Tatsuzaki MD PhD) to provide presentation by webinar

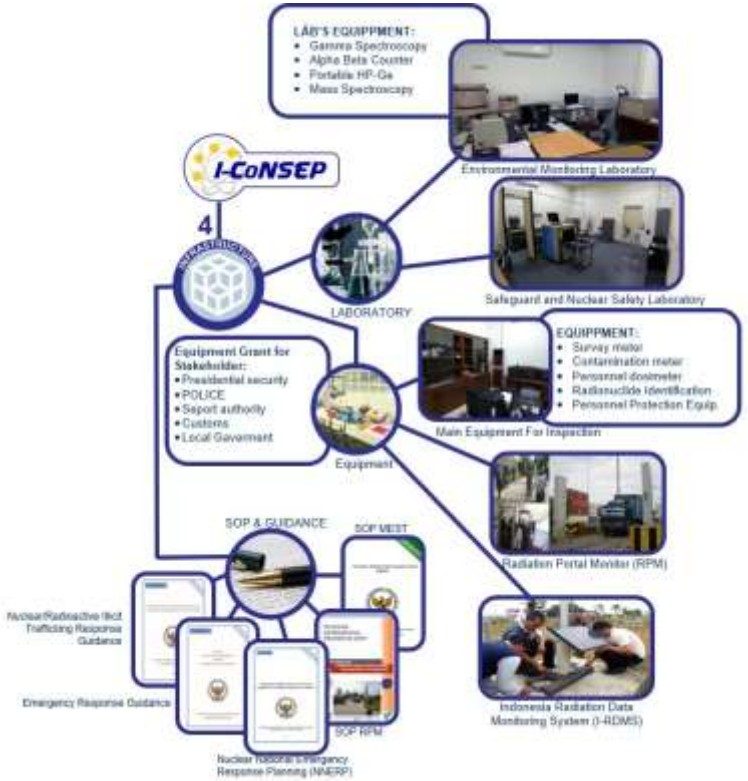





# Activity on Enhancing Radiation Emergencies Capacity

**4th Pillar, Infrastructure:**

The capability of a reliable human resource must be supported by adequate infrastructure, such as equipment and SOPs



# Activity on Enhancing Radiation Emergencies Capacity

## Off-Site Radiological Monitoring Stations

### Fixed Stations

Serpong

Bandung

Yogyakarta

Presidential Palace

### Mobile Station

# Activity on Enhancing Radiation Emergencies Capacity

**Indonesia Radiological Monitoring System (I-RDMS) to detect transboundary release**

# Conclusion

- As part of the international/regional community, we believe that technical cooperation and information sharing to strengthen and build our capacities and arrangements in EPR is important and necessary.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- Any questions???

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