Current Status on NPP Program in INDONESIA

BPTC on Nuclear Safety
Tunis, 4-15 May 2015

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General Information

- An archipelago with 17,508 islands (6000 inhabited)
- 4.92 million sq. km total area (the water area is about 2/3)
  - Java → 132.107 km²
  - Sumatera → 473.606 km²
  - Kalimantan → 539.460 km²
  - Sulawesi → 189.216 km²
  - Papua → 421.981 km²
- The fourt most populous country in the world 238.4 million peoples
- (2010 census). 1.49 % growth rate
- 59 % population reside in Java Island, in a 7 % total area
- 400 volcanoes, 100 active, 112 in Java Island
- Air temperature : 27.60 to 36.80 °C (day) and 14.60 to 24.60 °C (night)
- Humidity : 63 – 83 %
Map of Indonesia
Electricity Demand Projection

Source: DGEEU-MEMR
Presidential Regulation No. 79 Year 2014

- Less fossil fuel
- Reduce oil
- Increase gas
- Increase use of renewable energy source
- Use of other sources
- Possibly NPP
NPP Plan

- According to the present scenario, BAPETEN must prepare its regulatory infrastructure
  - by 2012 for Site Licensing Process
  - by 2014 for Construction Licensing Process
- Feasibility study is done by BATAN
BASIC REGULATION

Hierarchy

Act
- Nuclear Energy Act

GR
- Gov. Regulation on Radiation Safety
- Gov. Regulation on Nuclear Installation Licensing, etc.

BCR
- BCR on Operator Licensing
- BCR on Inspector qualification, etc.
Article 4

(1) The Government establishes a Regulatory Body, under and directly responsible to the President. The Regulatory Body shall have the task to control any activity using nuclear energy.

(2) To accomplish the task under clause (1), the Regulatory Body establishes regulations, conduct licensing processes and inspections.
BAPETEN Main Functions

1. Establishing regulations
2. Conduct licensing
3. Doing inspections
4. Nuclear technology socialization
There are two kinds of object or facility to be controlled by BAPETEN:
- Radioactive Materials and Radiation Facilities
- Nuclear Installations and Materials

- **Radioactive Materials and Radiation Facilities** consists of all radiation facilities and radioactive materials, that are used in areas of:
  - **Public Health:**
    - Diagnostic,
    - Therapy, etc.
  - **Industry:**
    - Radiography,
    - Gauging/Logging
    - Tracer, etc.
## Government Regulations

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Nuclear Installations and Materials comprises:

- **Nuclear reactor:**

  - **Triga Mark, Bandung**
    - Research Reactor
    - Built in 1965
    - 250 kW – 1965
    - 2 MW - 2000

  - **Kartini, Yogyakarta**
    - Research Reactor
    - Built in 1979
    - 250 kW – 1979
    - 100 kW - max

  - **MPR-GAS, Serpong**
    - Multi Purposed Research Reactor
    - Built in 1987
    - 30 MW – 1987
Other Nuclear Cycle Facilities:
- RR Fuel Element Production Installation
- Experimental Fuel Element Installation
- Radiometallurgy Installation
- Transfer Channel–Interim Spent Fuel Storage Facility.
1. BAPETEN – Nuclear Energy Regulatory Agency
2. BATAN – National Nuclear Energy Agency (Promoting Body)
3. TSO – Bandung Institute of Technology (ITB), Gadjah Mada University (UGM), University of Indonesia (UI)
Indonesia has planned to build Multi-purposed Power Reactor with HTGR system

BATAN would be the Operating Body with a certain goals:
1. Research Support
2. Electrical Transmission for PUSPIPTEK Area
3. Increase Public Acceptance
4. Etc.
BAPETEN Activities

Priority: Regulatory Strengthening
- Human Resources Development
- National and International Co-operation

Education and Training
- Doing TNA processes (Identification (Mapping), Gap analysis, E&T development)
  - TNA for Reviewer (Licensing Directorate)
  - TNA for Inspector (Inspection Directorate)
  - TNA for Regulation Drafter (Regulation Directorate)
  - TNA for Administration Staff
BAPETEN Activities (cont.)

- 2011: OJT for Review and Inspection during Site Stage of NPP Codes and Standards Training courses
  - Workshop on Siting of NPP with Related National Institution (e.g. Seismic aspect, external events aspect, meteorological assessment)
- 2012-2013: OJT for Review and Inspection during Construction Stage of NPP Computer Codes Training (e.g. RELAPS, PC-COSYMA, “Structure Analysis Program”)
- 2014: Workshop on NPP Safety Assessment
- 2014: Workshop on Waste Management
- 2015: Workshop on HTGR Evaluation (April)
- 2015: Workshop on SMR Safety System
Indonesia: Possible Sites

- Archipelago country
- Consists of over than 17,000 islands
- Many living creatures (various species)
NPP Challenges

• Public Perception
As it generally happens in the public around the world, most of people in Indonesian have negative perception to nuclear-related programs. ‘Nuclear’ is always associated to nuclear bomb, or at least perceived as something dreadful. Public perception to nuclear risk is generally unproportional to the facts.

• Political Situation
Political situation in Indonesia is now quite stable; however, it is vulnerable to changes. Direct legislative and presidential elections in every five year-period have the potential to create significant political changes. Both the elected legislative representatives and government (the President and Vice President) will always consider the chance to be re-elected in the next election period, hence they tend to highly consider the groups of people who have vocal voice regardless the benefit of the opinion for short and long-term to the country. In other words, they tend accommodate such a voice in order to win the support from the people for the next election instead of trying to convince the people or voters to collectively reach advancement and wealth in the future (long-term vision)
Leuser Mountain (Sumatra Island)
Bunaken Ocean Park (Sulawesi Island)
Merapi Mount., Temples, Flowers, Ethnic handicrafts (Java Island)
Hindu culture, Sea, traditional dance (Bali Island)
- Senggigi Beach (Lombok Island)
- Komodo Island
Thank You

- Papua Island, Mount Jayawijaya