

National Report: Indonesia



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IAEA

International Atomic Energy Agency

Independent regulatory body

- All nuclear activities using or relating to nuclear energy in Indonesia are controlled by the Nuclear Energy Regulatory Agency (BAPETEN).
- BAPETEN is an independent regulatory body, which is chaired by a Chairman who reports directly to the President of Rep. of Indonesia.
- BAPETEN was established in 1998 based on the Act No 10 Year 1997 on Nuclear Energy.

Legal and Regulatory Framework (1/2)

- The decommissioning of research reactors are mainly based on the following legal and regulatory framework:
 - Act No. 10/1997 on Nuclear Energy,
 - Gov. Reg. no 43/2006 on Reactor Licensing, and
 - BAPETEN Chairman Regulation (BCR) No. 4/2009 on Decommissioning of Research Reactors.
- General provisions and licensing requirements of decommissioning are specifically stated in:
 - Act No. 10/1997, article 17, clause (2)
 - Gov. Reg. No. 43/2006, articles 24 – 29

Legal and Regulatory Framework (2/2)

- The detailed requirements and guidelines for preparing the decommissioning plan and license applications are available in BCR No. 4/2009 on the Decommissioning of Nuclear Reactor.
- BCR No. 4/2009 was developed based on the adoption and adaption from the IAEA Safety Guide, WS-G-2.1: “Decommissioning of NPPs and RRs”.

License / authorisation

- Currently, there are three research reactors under operation (operated by BATAN):
 - MPR-30, Serpong (since 1987)
 - Triga-2000, Bandung (since 1971)
 - Kartini Reactor, Yogya (since 1979)
- All operating reactors are licensed by BAPETEN.
- The validity of each license is as follows:
 - MPR-30, Serpong : 6 December 2020
 - Triga-2000, Bandung : 3 December 2016
 - Kartini Reactor, Yogya : 30 October 2010 –
(to be extended)

Decommissioning planning / implementation (1/2)

- Initial Plans for Decommissioning of RRs are available as parts of their SARs (Chapter 19 of SAR) – (Format and content of SAR refer to BCR No. 06-P/1999).
- The decommissioning plans shall be made in details, suitable with the BCR No 4/2009, for obtaining the decommissioning license.
- The detailed decommissioning plan shall be submitted to BAPETEN as early as possible, at least 3 years before the operating license ends, as it is stated in Gov. Reg. No. 43/2006, article 24.

Decommissioning planning / implementation (2/2)

- National Nuclear Energy Agency (BATAN) as an operating organization has established a special team for preparing decommissioning assessment of research reactors.
- The tasks of the team are, inter alia:
 - to identify all the needs for decommissioning;
 - to identify and assess the problems and challenges, which will be possibly encountered in decommissioning implementation; and
 - to prepare the assessment results and recommendations, which could be referred by the operators in setting up the decommissioning plans.
- The team reports to Chairman of BATAN.

Decommissioning cost calculation / funding

- In the Initial decommissioning plan, the cost calculation has not been carried out yet.
- However, the cost calculation shall be conducted and its results shall be in place when the application of decommissioning license is submitted to BAPETEN.
- The scheme of decommissioning cost is particularly addressed in article 13 of the BCR No. 4/2009 on Decommissioning of Nuclear Reactor.
- Since, all research reactors in Indonesia are owned and operated by the government's institution, the decommissioning funding will be provided by the Government, based on the relevant regulations.

Progress and Achievements (1/2)

- **Some aspects of decommissioning, which have been successfully addressed to date, are:**
 - **Regulation:** BAPETEN, as a regulator, has set up all regulations relevant to decommissioning of research reactors.
 - **Communication:** In developing the regulations, BAPETEN has involved the representatives from operating organizations. Through this kind of way, regulators and operators could communicate and exchange experiences from each other.
 - **Decommissioning team:** BATAN, as an operating org., has established a decommissioning team for preparing decommissioning assessment of research reactors.

Progress and Achievements (2/2)

- **Aspects that could be share:**
 - Communication between operators and regulators is important. Involvement of operators in setting up the regulations could be a kind of communications.
 - Through this communication, the operators can share their experiences that may be important to be accommodated in the regulations. Furthermore, they may be more aware on the importance of safety, and particularly, the importance of early planning for decommissioning.
 - In the same time, regulators can disseminate the information of regulations, as well as, the licensing requirements and mechanism for decommissioning.

Issues / Challenges

- Many issues / challenges are faced in developing the decommissioning plan. But, the following ones might be more prominent among others:
 - Technical challenges:
 - to develop decommissioning method and clearance level; and
 - to conduct cost calculation and set up the schedule of decommissioning activities.
 - Administrative challenges:
 - lack of experiences;
 - ageing of experienced human resources; and
 - leadership for decommissioning implementation.

Thank you for your attention