

Indonesia Nuclear Energy Regulatory Agency

NPP Programme, Regulatory Framework and Licensing Process for Nuclear Facilities in INDONESIA



Regional Workshop on Review and Assessment of Nuclear Power Plant License Applications by the Regulatory Bodies

Manila, Philippines – 13-16 November 2023

PRBN



B@LIS

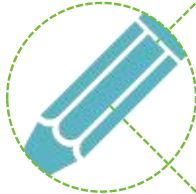


Je-KEREN

CONTENT OF THE PRESENTATION



ORGANIZATION



RANGE OF LICENSING



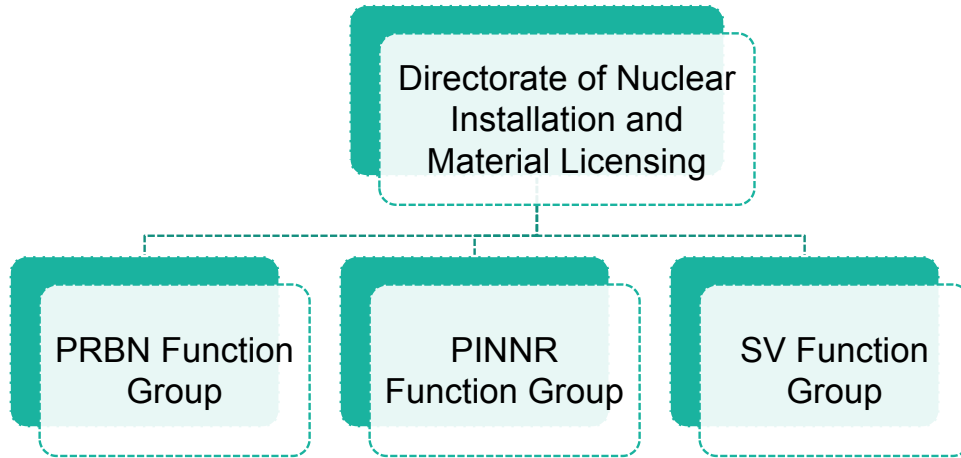
LICENSING PROCESS

BAPETEN

Tasked with carrying out government duties in the field of nuclear energy supervision in accordance with the provisions of applicable laws and regulations.

Energy supervision ensures that nuclear power in Indonesia is very necessary for the safety, security and health of worker and the public, as well as protection of the environment

ORGANIZATION



Carrying out the formulation of implementation of technical policies in the field of licensing nuclear installations and nuclear materials, testing and issuing personnel work permits and validation of packages

VISION: The realization of quality and professional licensing system for nuclear installations and materials, in accordance with nuclear safety, security and safeguards standards

MISSIONS

PRBN Group

Preparing a nuclear power plant site and construction permit system

Improving standards and licensing services for Reactors and Nuclear Materials

PINNR Group

Improving INNR licensing standards and services, including TENORM producing facilities radioisotope production installations, and radioactive waste management installations

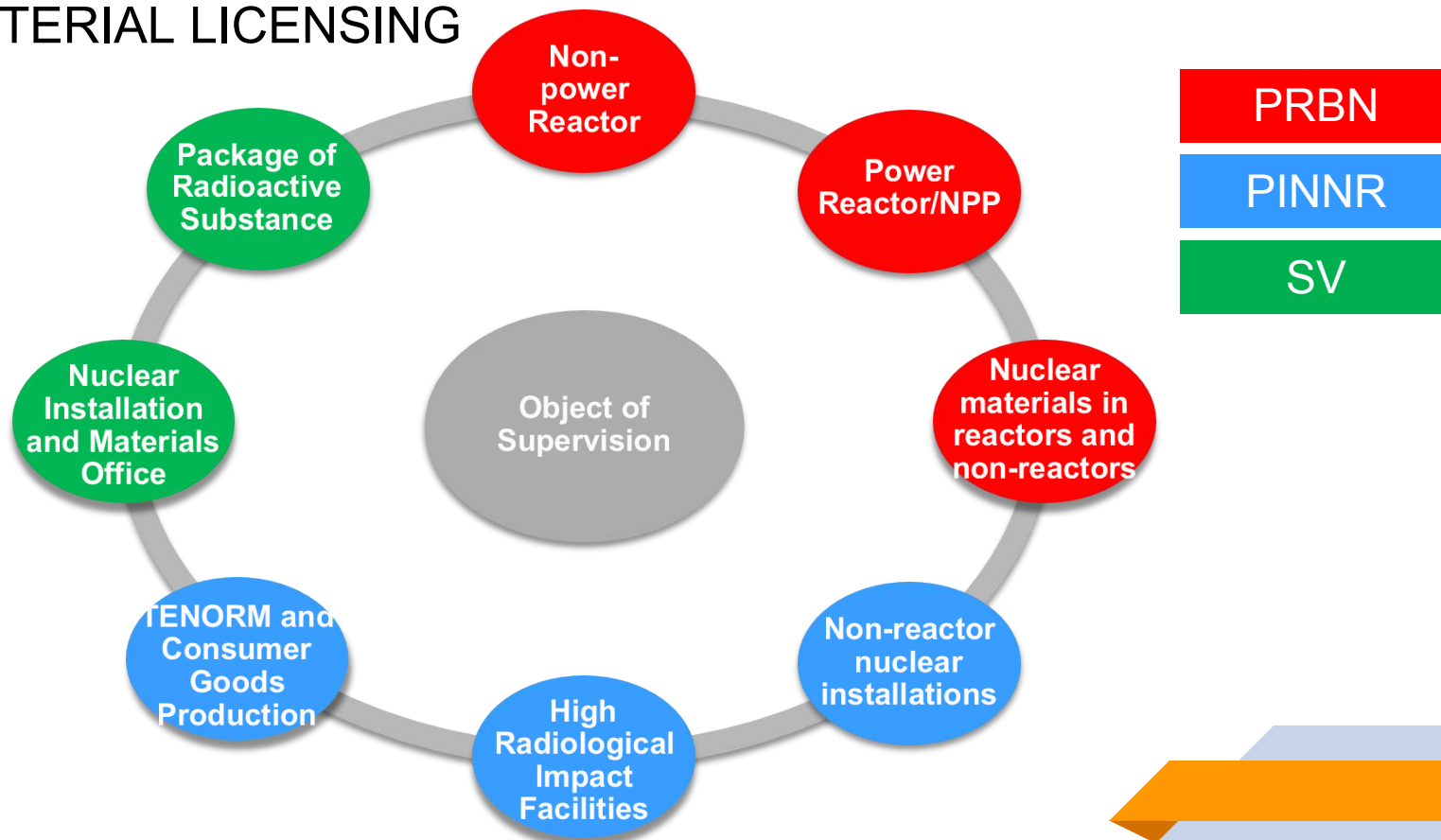
SV Group

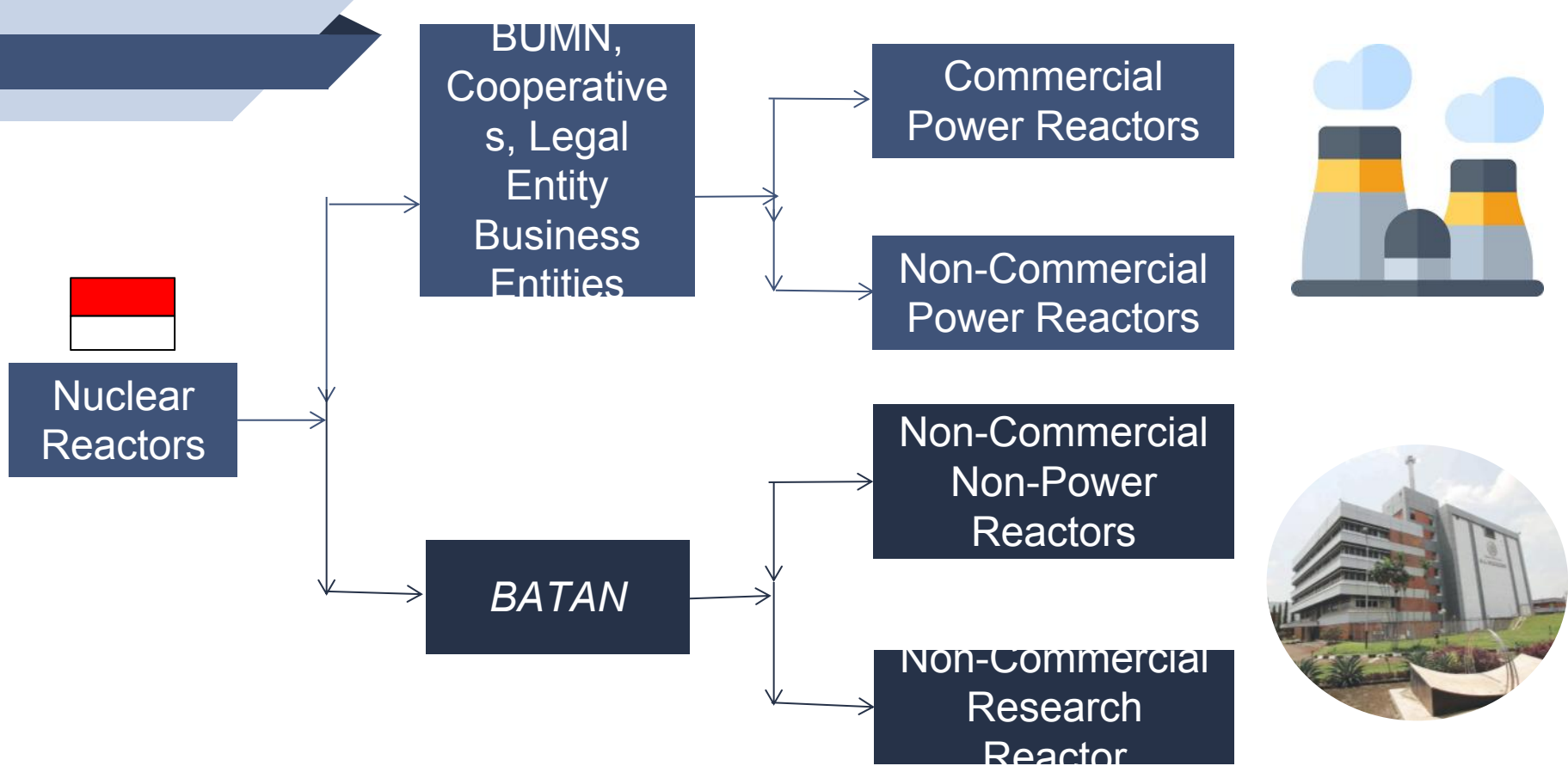
Improving standards and certification services for nuclear installation and material officers

Improving standards and services for certification and validation of radioactive substance packages

DPIBN Supervision Object

OBJECTS OF NUCLEAR INSTALLATION AND MATERIAL LICENSING





Licensing Supervision Non-Power Reactor (RND)



KARTINI Reactor (TRIGA Type) operated by BATAN

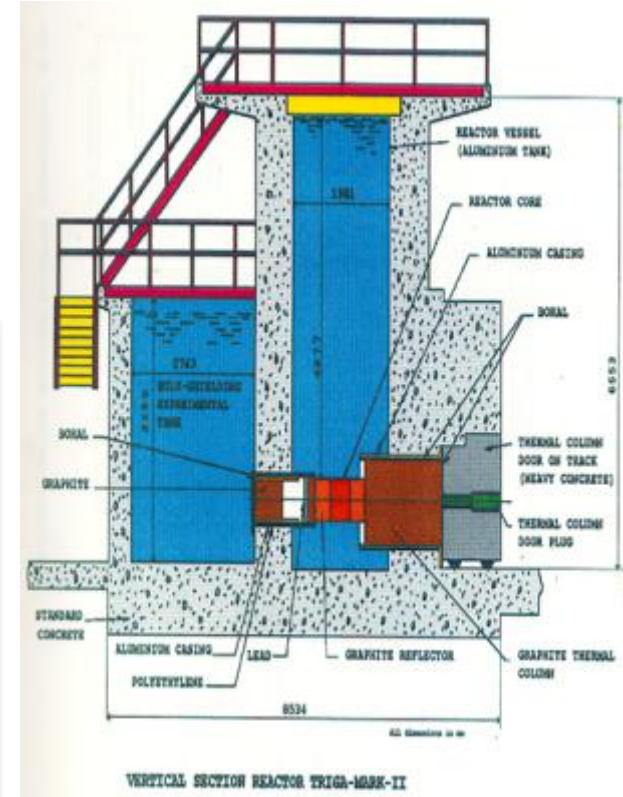
Location: Yogyakarta

Operating since 1979

Purposes: Education, Training, Research/R&D,
Radioisotope Production

100 kW Operation License (December 2018 ~ 10
years)

Utilization Approval: BNCT & SAMOP



Licensing Supervision RND (2)



TRIGA 2000 Reactor operated by BATAN

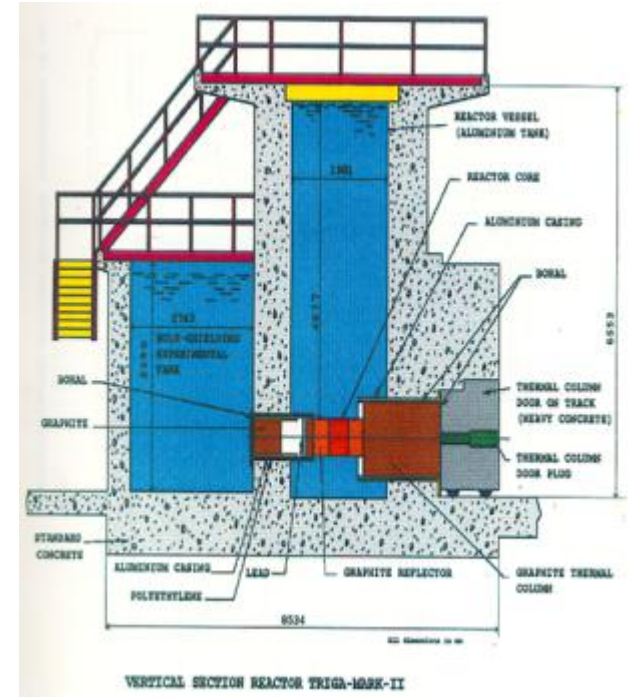
Location: Bandung

Operating since 1964

Purposes: Education, Training, Research/R&D,
Radioisotope Production

1000 kW Operation License (2017 ~ 10 years)

BKRTTBB Modification Approval



Licensing Supervision RND (3)



GA Siwabessy Multi-purpose reactor,
operated by BATAN

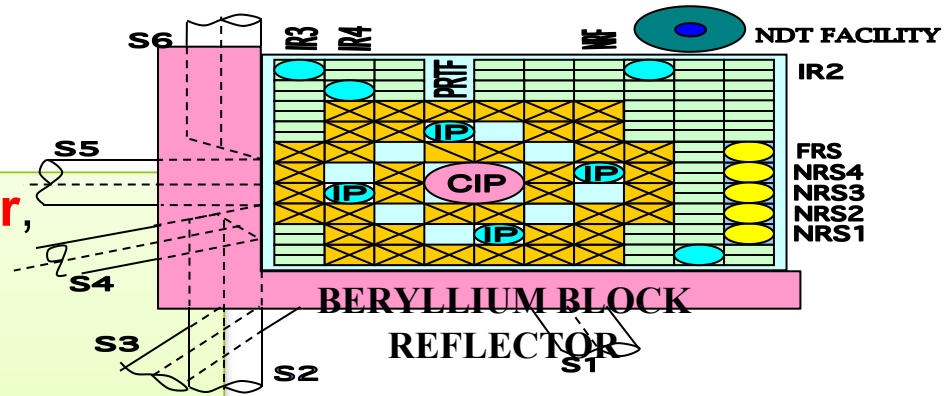
Location: Serpong, South Tangerang

Operating since 1987

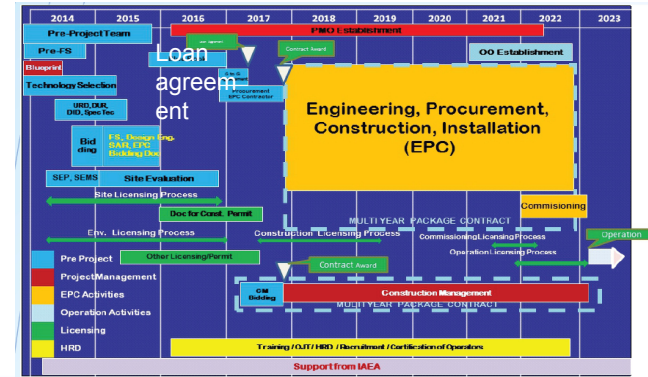
Purpose: Education, Training, Research/R&D,
Irradiation, Radioisotope Production, Material
Testing

30 MW Operation Licensor (2020 ~ 10 years)

Approval of Utilization of Burn Element Plates



Supervision of Power Reactor Licensing



Experimental Power Reactor (10 MWth),
concessionaire by BATAN

Type: High Temperature Gas-Cooled Reactor (HTGR)

Location: Serpong, South Tangerang

2015 Site Evaluation Approval

2017 Site Permit (~4 years)

Power Reactor Licensing

- Licensing Consultation:
 - Copenhagen Atomics
 - PT Pertamina Power Indonesia and Denmark's Seaborg
 - PLN with Nu Scale
- Pre-Site Licensing and Reactor design plans
 - PT Thorcon Power Indonesia

BAPETEN Receives Consultation Request for Nuclear Power Plant Development

← Kembali 📅 13 Desember 2022 | 📰 Berita BAPETEN



BAPETEN has received a request for consultation on the construction of a nuclear power plant (NPP) from PT ThorCon Power Indonesia as an effort to encourage the use of nuclear power for low-carbon energy. As a first step, BAPETEN invited PT ThorCon Power Indonesia to submit an NPP development plan and supporting studies on December 13, 2022, at the BAPETEN office. On that occasion, the consultation framework concept was also discussed, which includes a roadmap for the development and safety of the NPP design, which will be implemented in 2023.

The meeting was led by BAPETEN Deputy Chairman for Nuclear Safety Assessment Dahlia Cakrawati Sinaga, and attended by PT Thorcon Power Indonesia Operations Director Bob S. Efendi and his staffs, as well as heads of work units at BAPETEN, including the Directorate of Licensing for Nuclear Installations and Materials (DPIBN), the Directorate of Inspection of Nuclear Installations and Materials (DIIBN), the Center for Regulatory Assessment System and Technology Assessment for Nuclear Installations and Materials (P2STPIBN), the Directorate of Regulation of Nuclear Installations and Materials (DP2IBN), and the Bureau of Legal Affairs, Cooperation and Public Communication (BHKK).



Tautan BAPETEN



Feedback



PUAS



BIASA

GPR Kominfo

ThorCon begins pre-licensing consultation in Indonesia

05 April 2023



PT ThorCon Power Indonesia - a subsidiary of USA-based ThorCon - has signed an agreement with Indonesia's Nuclear Energy Regulatory Agency (Bapeten) to officially start a safety, security and safeguards consultation in preparation for licensing a demonstration 500 MWe floating ThorCon molten salt reactor (TMSR-500).



The signing of the agreement between Bapeten and ThorCon (Image: Bapeten)

"The goal of the consultation is to prepare the regulator, the applicant, and the stakeholders for the formal licensing process and to create a roadmap that contains schedules, roles and responsibilities, applicable laws and regulations, scope and format of the technical and administrative documents in the licence applications, and evaluations of the design readiness," ThorCon said.

The consultation includes: a review of the master plan document for the construction of the TMSR500;

Most read

Repair work under way at **Krško** nuclear power plant

US unit cleared to use **higher-enriched fuel**

Another **Zaporizhzhia** unit to be put into hot shutdown

Ukraine brings in new **pre-licensing assessment** for nuclear projects

IAEA warning after explosions heard near **Khmelnytsky**

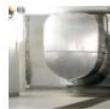
CNSC renews licences for Cameco **uranium operations**

Sendai units to operate for another 20 years

Atucha 1 extension: Environmental impact study submitted

IAEA staff get access to roof of **Zaporizhzhia unit 2**

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ENERGY

PLN partners with NuScale Power to develop small-scale modular nuclear reactor by 2030

August 18, 2023

Reading Time: 3 minutes

Save Article

**Journalist IBP**
Journalist**Mahinda Arkyasa**
Editor

Interview

PT Pembangkit Listrik Negara (PLN) (Persero) will develop a nuclear power plant through its subsidiary PLN Indonesia Power (PLN IP) in cooperation with NuScale Power from the US and several other entities.

NuScale Power Corporation is a publicly traded US company that designs and markets small modular nuclear reactors.

PLN IP will conduct a study on small-scale nuclear modular reactor technology in collaboration with the Coordinating Ministry for Economic Affairs, the National Research and Innovation Agency (BRIN), the United States Trade and

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for Economic Affairs**

How can we help you?



Kunjungan Copenhagen Atomics ke BAPETEN dalam rangka Konsultasi Peraturan Perizinan Pembangunan PLTN Tipe Modular Molten Salt Reactor (MSR) di Bontang Kalimantan Timur

[← Kembali](#)  19 Januari 2023 |  Berita BAPETEN



BAPETEN menerima kunjungan Copenhagen Atomics beserta perwakilan dari PT Pupuk Kaltim Bontang di Kantor Bapeten pada Kamis, 19 Januari 2023. Kegiatan kunjungan ini bertujuan untuk memperkenalkan desain reaktor MSR serta rencana pengembangan desain dan pembangunannya. Selain itu bagi BAPETEN untuk membina para pemangku kepentingan calon pemohon izin pelaku usaha dan pengenalan peraturan terkait izin pembangunan PLTN.

Acara diawali dengan pembukaandari Kepala Pusat Pengkajian Sistem dan Teknologi Pengawasan Instalasi dan Bahan Nuklir (P2STPIBN) Yudi Pramono yang menyampaikan apresiasi dan terima kasih BAPETEN atas kedatangan perwakilan dari *Copenhagen Atomics* serta telah menyiapkan materi dan memberikan informasi terkait peraturan terkini dalam pembangunan PLTN.

Kegiatan dilanjutkan dengan sambutan Deputy Pengkajian dan Keselamatan Nuklir, Dahlia Cakrawati Sinaga dalam sambutannya memberikan informasi terkait tugas dan fungsi BAPETEN selaku Badan Pengawas Pemanfaatan Tenaga Nuklir di Indonesia khususnya terkait tanggung jawab dalam menyusun regulasi, memproses perizinan, melakukan inspeksi dan juga menjelaskan mengenai perizinan penggunaan dan pemanfaatan zat radioaktif pada instalasi nuklir di industri. Selain itu, disampaikan juga amanah dari Undang-Undang Nomor 11 Tahun 2020 Tentang Cipta Kerja yang memperkuat wewenang BAPETEN dalam menerbitkan izin, sehingga BAPETEN dalam hal ini memiliki tanggung jawab untuk mengevaluasi dari sisi teknis. "Kegiatan kunjungan ini merupakan kesempatan yang sangat baik untuk berdiskusi terkait

BAPETEN Link



Feedback



PUAS



BIA SA

GPR Kominfo

Danish Consortium to Build Nuclear-Powered Ammonia Plant in Kalimantan

By Editorial Team · 14/06/2023



Editors' Choice

Prabowo's National Food Barn Ambition, What's New?

Fossil Fuel Surge Imperils Climate Goals, Doubling Production

Social Aid Galore in Indonesia: Economic Bumper or Political Ploys?

Business Figures in Prabowo-Gibran Winning Team May Calm Businessmen

S'pore Help to Justify Salim Group's Infrastructure Ambition

JETP Indonesia's Billion-Dollar Energy Transition Plan: Key Insights

Summary



Construction of Commercial Nuclear Power Plants



Commercial Nuclear Power Plant Construction



Determined by Government (Ministry of Energy and Mineral Resources)



After consulting with the Parliament



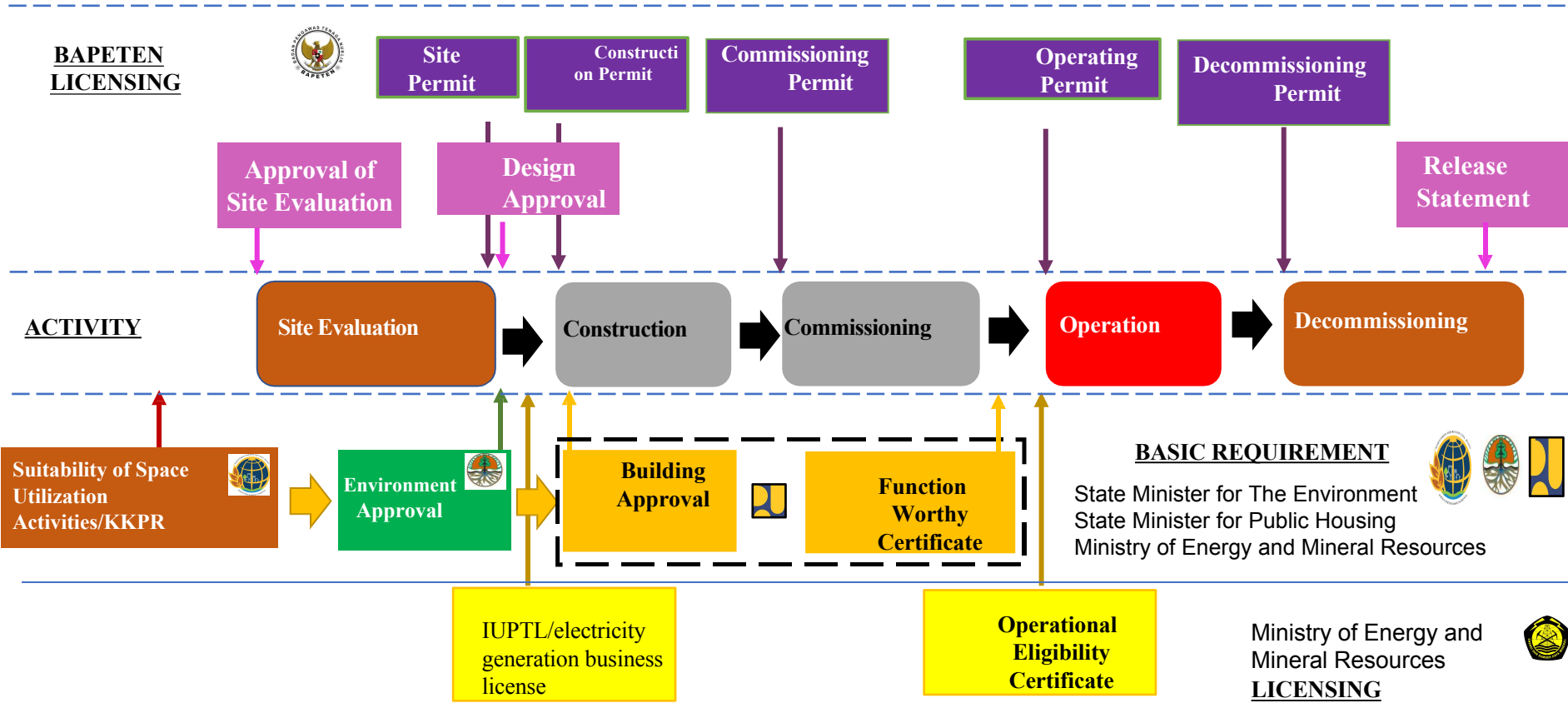
All SSKs that are important for safety have been tasted in relevant environments/according to operating conditions and implemented in prototypes



Has been granted a commercial operating permit by the regulatory body of the country that has built the nuclear power plant



POWER REACTOR (NPP) LICENSING SCHEME





BASIC REQUIREMENTS



Suitability of Space
Utilization
Activities

Environment
Approval

Building Approval
Ministry of Public Works
and Housing

Government Regulation No.
21 of 2021 concerning
Implementation of Spatial
Planning

Government Regulation
No. 22 of 2021
concerning
Implementation of
Environmental Protection
and Management

Government
Regulation No. 16 of
2021 concerning
Implementing
Regulations of Law No.
28 of 2002 concerning
Building

Government Regulation No.
23 of 2021 concerning
Forestry Implementation

Commercial NPP Construction

Requirements

Safety:

- Safety analysis report
- Radiation protection and safety program
- Care and aging program

Security:

- Physical protection program

Based on stages:

- Site evaluation program
- Site evaluation report
- Detailed design
- Construction program
- Commissioning program
- Decommissioning program

Safeguard:

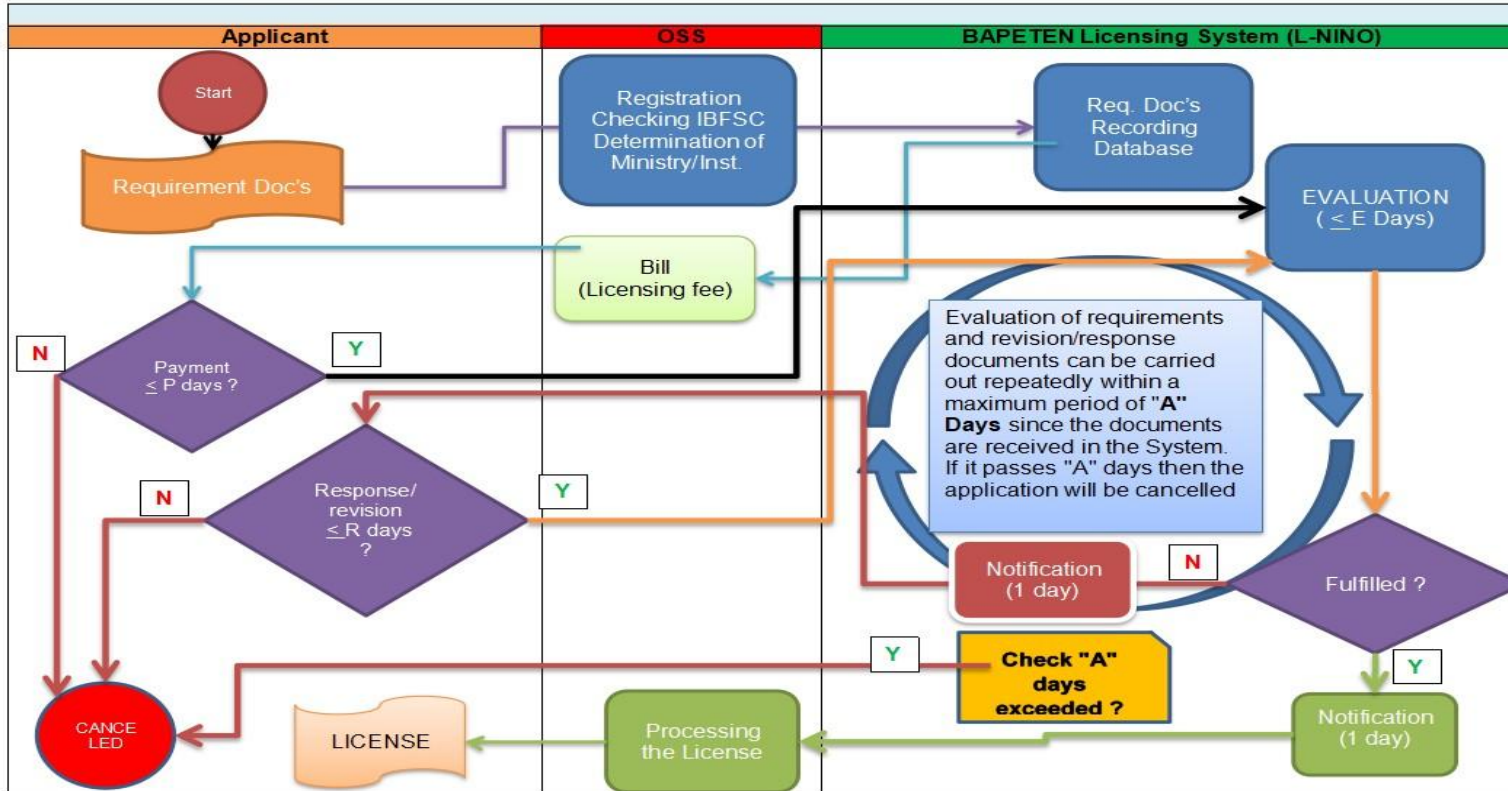
- List of design information
- Safeguards document

- Management system
- Nuclear Emergency Preparedness and Response Program

Financial guarantee:

- Construction
- Decommissioning
- Liabilities

General Licensing Process Diagram



Time line:

P : Payment

E : Evaluation (Bapeten)

R : Revision/Response (applicant)

A : Total Time Allowed

LICENSING STAGES

Government Regulation Number 2 of 2014 concerning
Licensing for the Installation and Utilization of Nuclear
Material



Licensing Requirements:

1. Administrative
2. Technique
3. Financial*)

*) Financial requirements for obtaining permits for construction and commissioning of commercial power reactors and commercial non-power reactors

LICENSING STAGES

Government Regulation Number 2 of 2014 concerning
Licensing for the Installation and Utilization of Nuclear
Material



SITE



KONSTRUKSI



KOMISIONING



OPERASI



DEKOMISIONING

Administrative Requirements:

1. Proof of Establishment of a Legal Entity
2. Suitability to spatial planning
3. Proof of payment of permit application fees
4. Requirements in accordance with other provisions

LICENSING STAGES

Government Regulation Number 2 of 2014 concerning
Licensing for the Installation and Utilization of Nuclear
Material



Site Evaluation Licensing Document

1. Site Evaluation implementation report;
2. SM Site Evaluation implementation report
3. DID
4. Nuclear Reactor main data document

Site Evaluation Approval Document:

1. Site Evaluation Program
2. Site Evaluation Management System

LICENSING STAGES

Government Regulation Number 2 of 2014 concerning
Licensing for the Installation and Utilization of Nuclear
Material



**Design
Approval**

Construction Permit Technical Requirements:

1. Safety Analysis Report
2. Document limitations and operating conditions
3. Management system documents;
4. List of Design Information;
5. Radiation protection and safety programs;
6. Safeguards system documents;
7. Physical protection plan document;
8. Aging management program
9. Decommissioning program;
10. Nuclear preparedness program;
11. Construction program;
12. And environmental permit

Consent Requirements Design

1. Desain Detailed
2. Detailed Design Analysis Report Safety

LICENSING STAGES

Government Regulation Number 2 of 2014 concerning
Licensing for the Installation and Utilization of Nuclear
Material



Technical Requirements:

1. Safety analysis report;
2. Document limitation and operating conditions
3. Commissioning program
4. Maintenance program
5. Personal protection and safety program
6. Safeguards system document;
7. Physical protection plan document
8. Management system document
9. Aging management program;
10. Decommissioning program;
11. Nuclear preparedness program;
12. Environmental permit implementation report

LICENSING STAGES

Government Regulation Number 2 of 2014 concerning
Licensing for the Installation and Utilization of Nuclear
Material



Technical Requirements:

1. Safety analysis report;
2. Document limitation and operating conditions
3. Maintenance programs;
4. Radiation protection and safety program
5. Safeguards system documents;
6. Physical protection plan document
7. Management system documents
8. Decommissioning program;
9. Nuclear preparedness program;
10. Environmental permit implementation report

LICENSING STAGES

Government Regulation Number 2 of 2014 concerning
Licensing for the Installation and Utilization of Nuclear
Material



Technical Requirements:

1. Decommissioning Program
2. Radiation protection and safety program
3. Nuclear preparedness program
4. Management system documents

4 PILLARS OF NUCLEAR LAW

SAFETY

- Prevent accidents that have the potential to cause radiation/contamination hazards
- Mitigation of consequences/impacts

SECURITY

- Prevent loss, theft, transfer of nuclear materials and radioactive substances; and sabotage
- Rediscovery and mitigation

SAFEGUARDS

- Prevent the use of nuclear materials for non-peaceful purposes
- Mitigation

LIABILITY

- Reimbursement of nuclear losses to third parties

**INSPECTION
LICENSING
REGULATION
S**

**LAW
ENFORCEMENT
LIABILITY
RESPONSE
READINESS**

THANK YOU

DIRECTORATE OF NUCLEAR INSTALLATION AND MATERIAL LICENSING



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