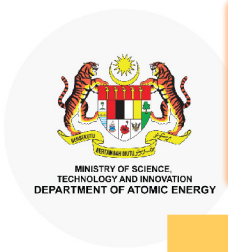


NPP Programme, Regulatory Framework and Licensing Process for Nuclear Facilities in Malaysia

ANSN - Regional Workshop on Review and Assessment of Nuclear Power Plant Licence Applications by the Regulatory Bodies

13-16 November 2023





Content

01

Malaysia NPP
Programme



02

Regulatory
Authority



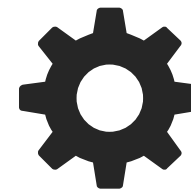
03

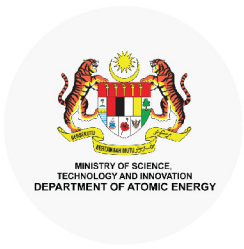
Nuclear
Activity in
Malaysia



04

Legislation &
Licensing
Requirements





1) Malaysia NPP Programme



Malaysia Nuclear Power Corporation (MNPC) was established under the Prime Minister's Department.

1982

PUSPATI
TRIGA Mark II
Research
Reactor (RTP)

The corporation originally planned to build two nuclear power plants in Malaysia by the year 2030.



Dr M: World needs non-polluting renewable energy, Malaysia not ready for nuclear power



Tun Dr Mahathir Mohamad answers questions at the dialogue session with the French business community in Cyberview Lodge Resort, Cyberjaya February 10, 2020. — Picture by Choo Choy May

2020

Malaysian Government Cancels Plan For Nuclear Power Plant Construction

BY BERHAN LAY NOVEMBER 22, 2018

MNPC was
Shutdown

Malaysia
consider the
potential of
SMR

But.... Malaysia
don't have any
Policy for NPP

2023

Rafizi: Malaysia mulls nuclear in energy mix, but further consideration needed

BY BERHAN LAY NOVEMBER 22, 2018



Economy Minister Rafizi Ramli speaks at a press conference in Putrajaya August 29, 2023. — Picture by Choo Choy May

2. REGULATORY AUTHORITY

Main Acts

Atomic Energy Licensing Act 1984 (Act 304)

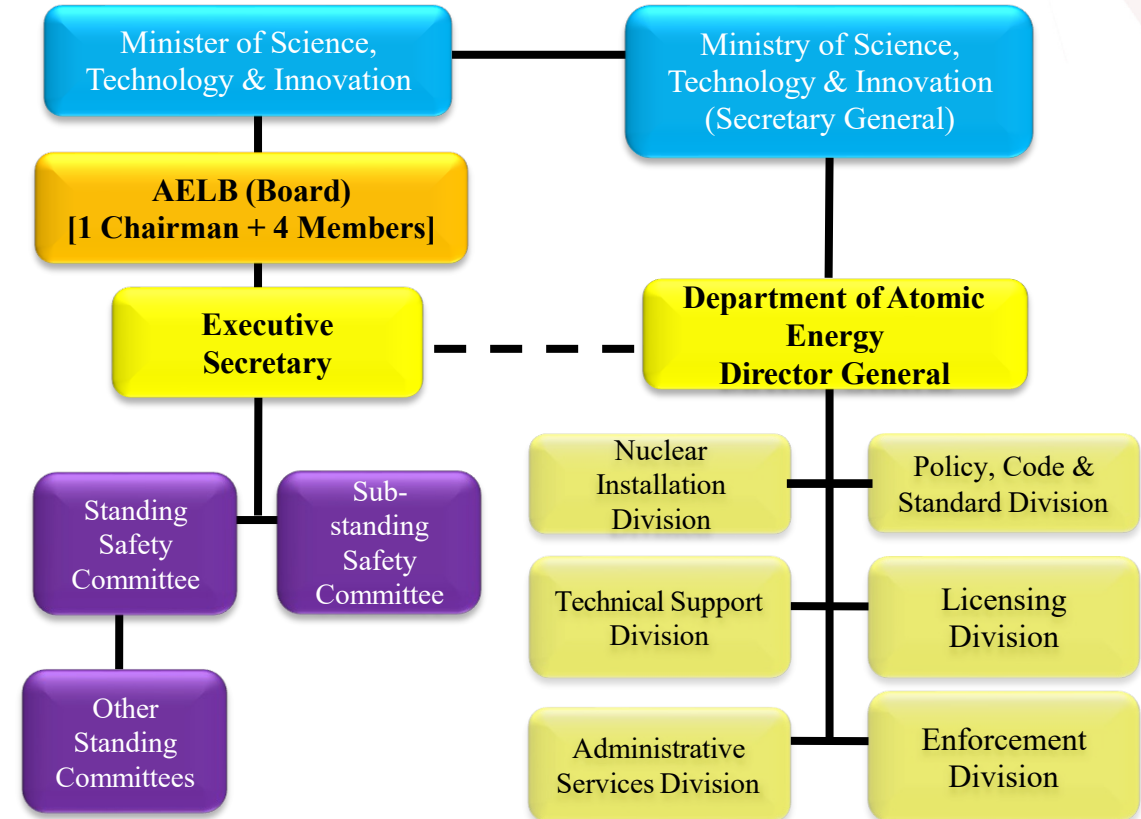
- To provide for the regulation and control of atomic energy
- For the establishment of standards on liability for nuclear damage.
- For matters connected therewith or related thereto.

REGULATORY POLICY STATEMENT AND
STRATEGIES FOR NUCLEAR AND
RADIATION SAFETY

Regulatory Body

- Atomic Energy Licensing Board (AELB) was established under Section 3 of the Act 304 in 1 Feb 1985.
- Ensuring safety, security and safeguarding peaceful Nuclear Activities.

NATIONAL POLICY STATEMENT FOR
RADIOACTIVE WASTE AND SPENT NUCLEAR
FUEL MANAGEMENT

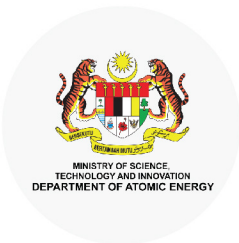


Atomic Energy Licensing Board

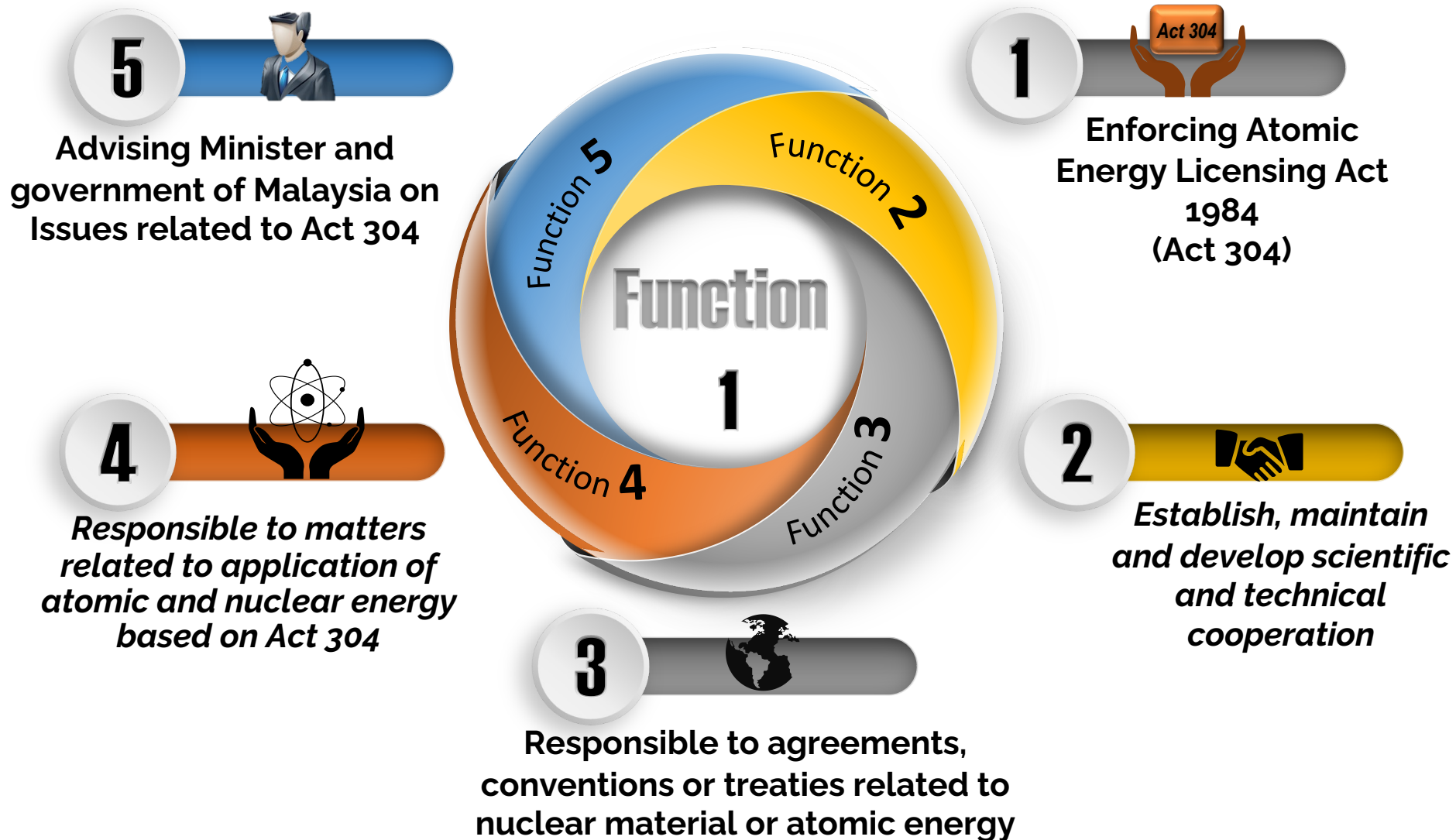
Department of Atomic Energy Malaysia

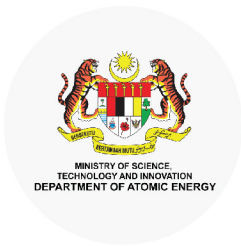
AELB Offices in Malaysia





AELB Function under the Act 304





Code Business of ATOM MALAYSIA

Implementation of Act 304 in regards to Licensing & Enforcement of Atomic Energy Activities



Implementation of International & national cooperation on regulatory aspects



National & Regional Nuclear Security Support Centre (NSSC)



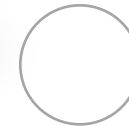
Implementation of Act 708 with regard to issuance of authorization & enforcement for strategic items



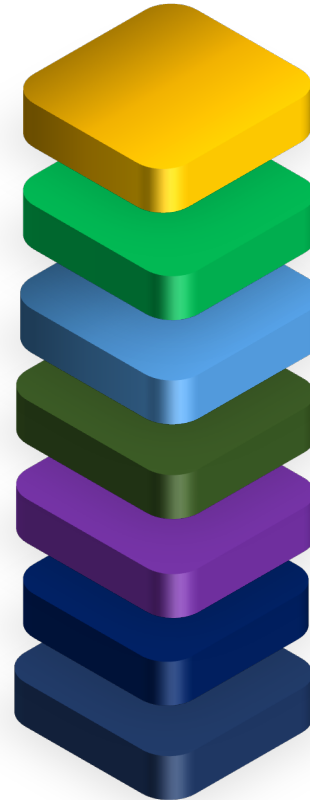
National Center for Nuclear Response Management

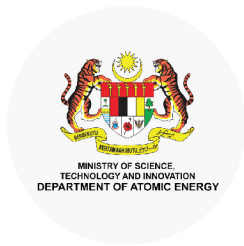


Development of Regulatory Documents and Regulatory Research



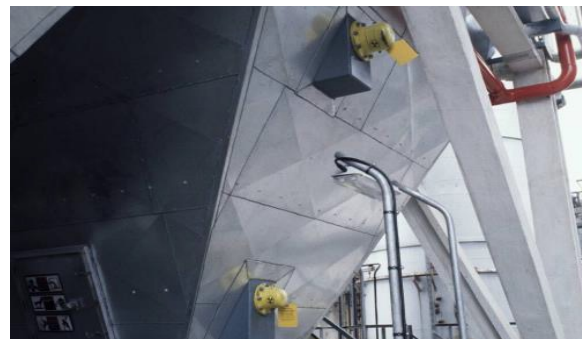
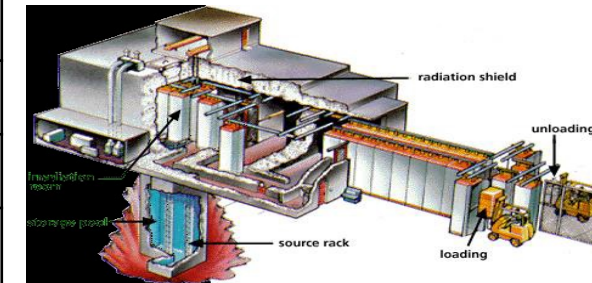
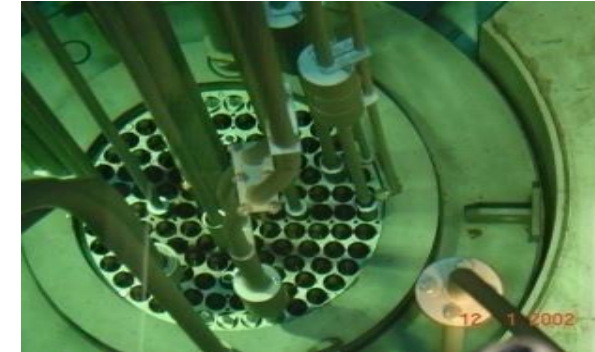
Certification of Radiation Protection Officer





3. Nuclear/ Radiation Activities in Malaysia

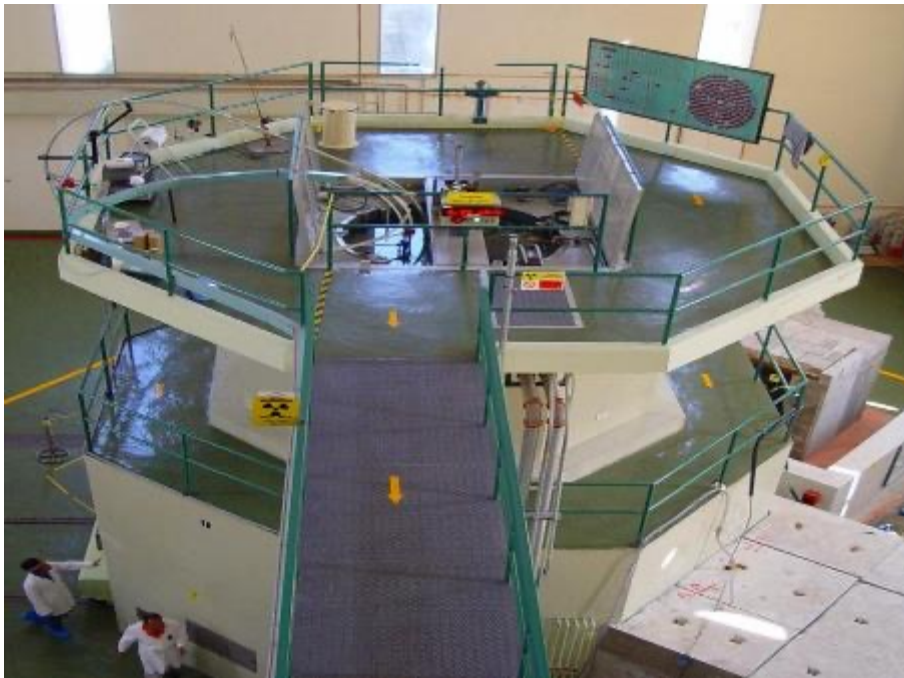
Activities	Number of Licensee
Research Reactor	1
Irradiating Cell	6
Industrial Radiography	92
Gauge	872
Sales	310
Education & Research	51
Mineral/NORM	46
TOTAL	1378



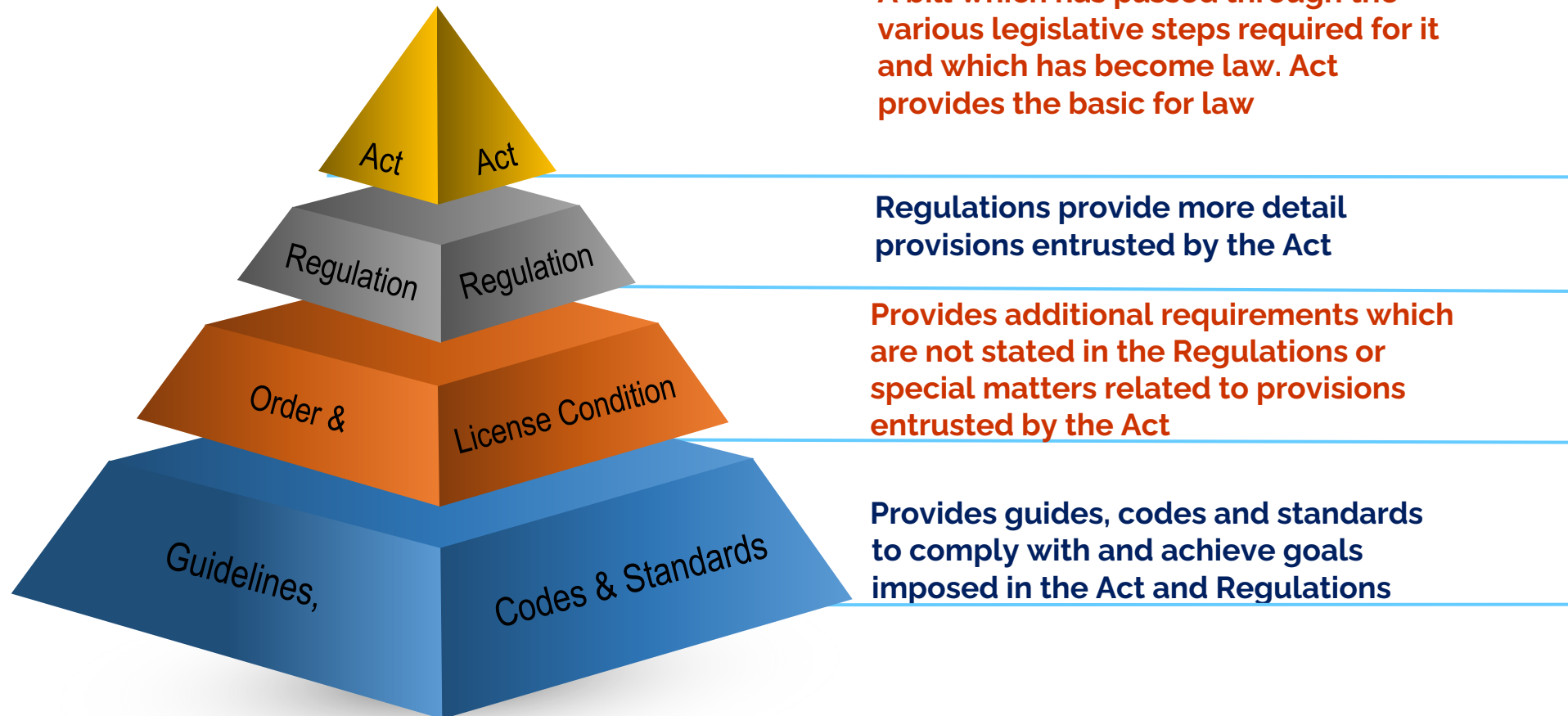


Research Reactor

Name : PUSPATI TRIGA Mark II Research Reactor (RTP)
Power : 1MW thermal
Operator : Malaysian Nuclear Agency
Location : Bangi, Selangor, Malaysia



4. Legislation & Licensing Requirements



ATOMIC ENERGY LICENSING 1984 (ACT 304)

01

**Radiation
Protection
(Licensing)
Regulations
1986**

02

**Atomic Energy
Licensing
(Basic Safety
Radiation
Protection)
Regulations
2010**

03

**Radiation
Protection
(Transport)
Regulations
1989**

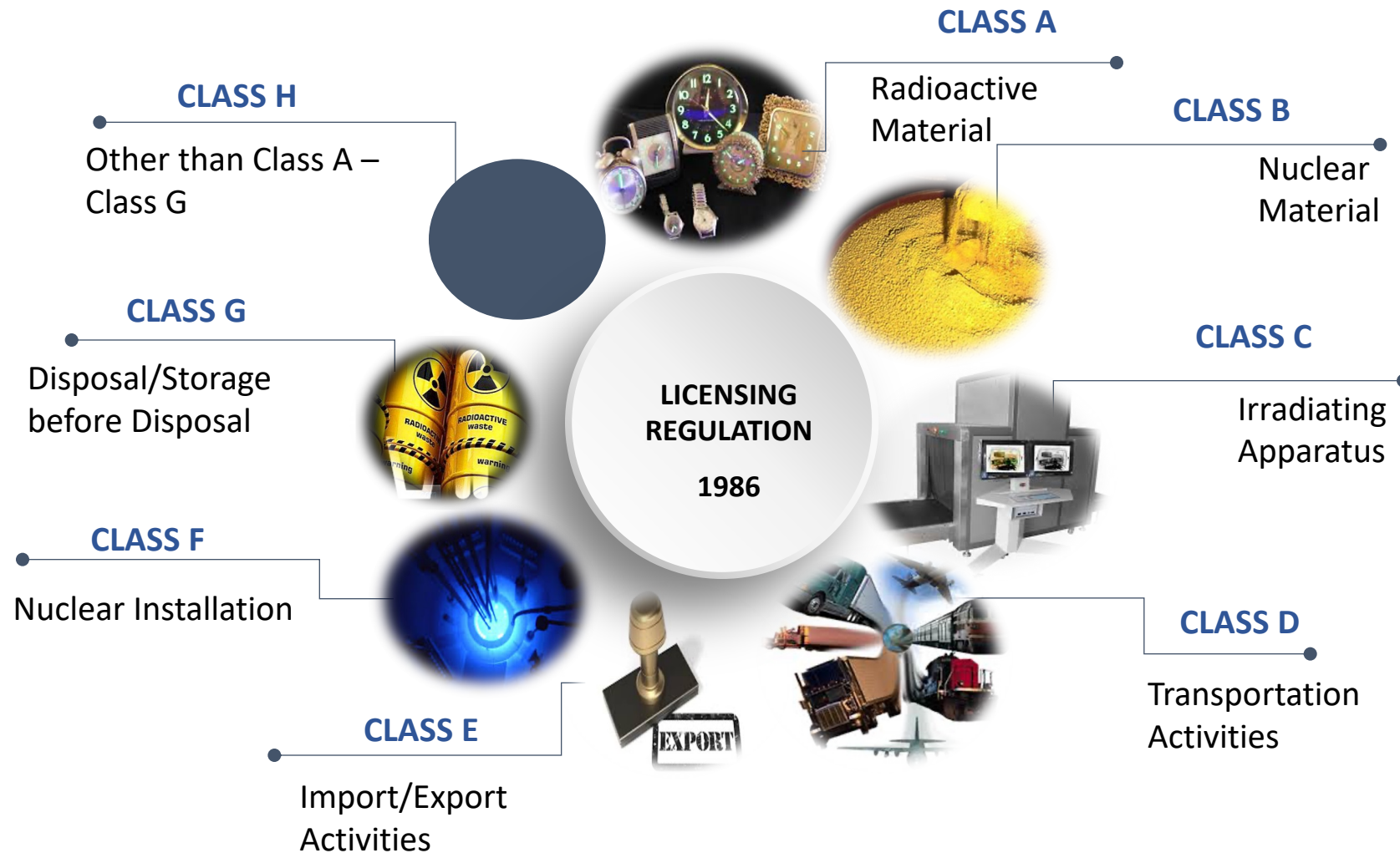
04

**Atomic Energy
Licensing
(Appeal)
Regulations
1990**

05

**Atomic Energy
Licensing
(Radioactive
Waste
Management)
Regulations
2011**

Radiation Protection (Licensing) Regulations 1986





Radiation Protection (Licensing) Regulations 1986

Regulation 5 : Class B license for-

- manufacture, trade in, produce, process, purchase, own, possess, use, transfer, handle, sell or store **nuclear material.** ;
- A Class B licence in respect of the milling of materials containing or associated with nuclear materials or in respect of a waste treatment facility for nuclear materials shall be in parts, namely-
 - a) the siting part;
 - b) the construction part; and
 - c) the operation part

The operation part of a Class B licence in respect of the milling of materials containing or associated with nuclear materials or in respect of a waste treatment facility for nuclear materials shall be issued in two stages, namely-

- (a) the temporary operation stage; and
- (b) the full operation stage



Radiation Protection (Licensing) Regulations 1986



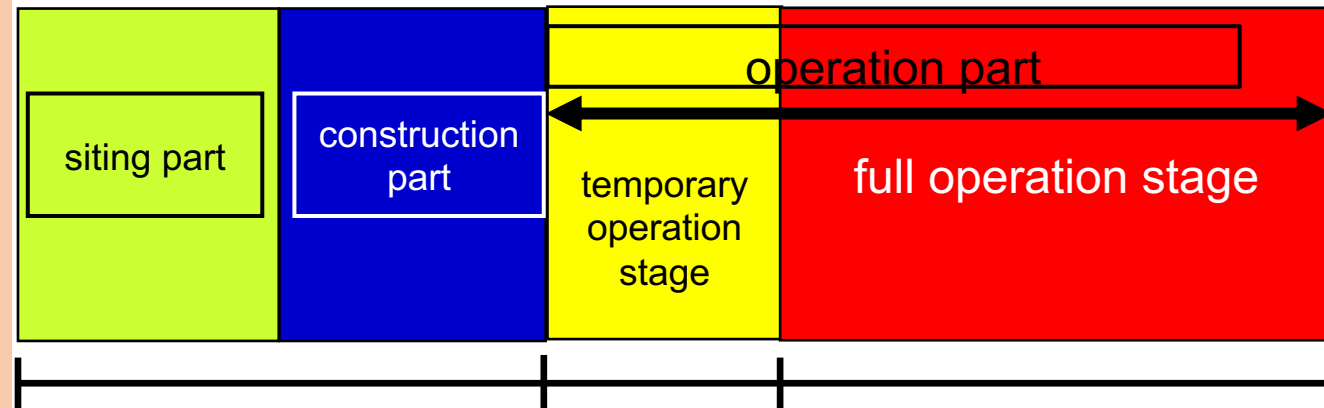
Regulation 9 Class F licence for-

A Class F licence is a licence **to site, to construct** or **to operate** a nuclear installation.

A licence under Class F for operating a nuclear installation shall be issued in two stages, namely-

- (a) the temporary operation stage; and
- (b) the full operation stage.

Class F licence





Requirement for Class F License

Siting licence

- (a) a description of the proposed installation and activities;
- (b) the **physical characteristics** of the site, namely, the geology, hydrology, meteorology and seismology, flora, fauna and aquatic biota;
- (c) the **population distribution** around the site, including the future trend of the population growth and the distances of the population centres from the site;
- (d) the present land use in and around the site;
- (e) an **assessment of the environmental impact** from the normal operation of the proposed installation including a preliminary analysis of the radiation hazards foreseen;
- (f) a programme for the pre-operational environmental monitoring;
- (g) a description of storage facilities for radioactive materials or nuclear materials on the site; and
- (h) **a description of the decommissioning plan**, its rationale and a plan for post-operational monitoring.



Requirement for Class F License

a construction licence

- (a) a general layout and detailed plan and design of the facility, including its conceptual safety design;
- (b) a description of the foreseen radiation and chemical hazards to the workers and members of the public during normal operation of the proposed installation, taking into account the anticipated chemical and physical characteristics and radioactive contents of all the effluents to be discharged and emissions from the facility; and
- (c) a **statement with respect to potential accidents** and unscheduled releases of wastes and hazardous materials from the facility
 - i. a statement of **conditions which could lead to accidents and unscheduled releases** of waste and hazardous materials;
 - ii. a statement on the probable effect of such accidents and releases on the health and safety of workers and members of the public and on the environment;
 - iii. a statement on the programme for **inspection and maintenance** proposed to prevent the occurrence of such accidents and releases; and
 - iv. a statement on **the emergency plan and preparedness programme** and mitigative measures to deal with such accidents and releases.



Requirement for Class F License

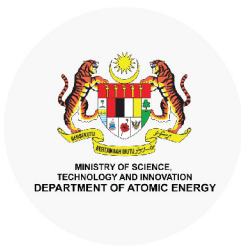
Temporary operation stage

- (a) any charges, in the material used or in the design, introduced during the construction of the installation; .
- (b) (b) a description of the proposed measures to control radiation exposures, including the operational radiation monitoring programme designed for the workers, members of the public and the environment, together with a complete list of the supporting services and facilities;
- (c) a detailed medical surveillance programme;
- (d) a programme for the initial and periodic training of workers on general safety and radiation protection;
- (e) the facilities and equipment designed to contain spillage and the procedures to followed in handling spillage of radioactive materials, nuclear materials or prescribed substances;
- (f) the proposed plan and procedures to prevent loss, theft or unauthorized use of radioactive materials, nuclear materials or prescribed substances;
- (g) the plan for operational monitoring of the quality and quantity of effluents to be discharged and emissions from the facility, including-
 - (i) the frequency and points of sampling;
 - (ii) the types of equipment and analytical methods to be used;
 - (iii) the contingency plan in the event of abnormal results; and
- h) a description of the proposed procedures to prevent accidents and the proposed contingency plan in the event of an accident.

Full Operating licence

Safety Analysis Report which shall contain

- (a) all valid information submitted for the temporary operation stage; and
- (b) all new information and all the changes to the plan, design and operation introduced following actual operation during the temporary operation stage, if any.



Guidelines Documents

LEM/TEK/63
22 MAC 2011



GUIDELINE FOR SITE SELECTION FOR NUCLEAR POWER PLANT

Atomic Energy Licensing Board
Ministry of Science, Technology and Innovation
Batu 24, Jalan Dengkil, 43800 Dengkil
Selangor Darul Ehsan

Tel : +603-8922 5888
Fax : +603-8922 3685
Website: www.aelb.gov.my

[LEM-TEK-63.pdf \(aelb.gov.my\)](http://www.aelb.gov.my/LEM-TEK-63.pdf)

LEM/TEK/64
22 MAC 2011



GUIDELINE FOR SITE EVALUATION FOR NUCLEAR POWER PLANT

Atomic Energy Licensing Board
Ministry of Science, Technology and Innovation
Batu 24, Jalan Dengkil, 43800 Dengkil
Selangor Darul Ehsan

Tel : +603-8922 5888
Fax : +603-8922 3685
Website: www.aelb.gov.my

[LEM-TEK-64.pdf \(aelb.gov.my\)](http://www.aelb.gov.my/LEM-TEK-64.pdf)

LEM/TEK/54 Sem.1
17 January 2017

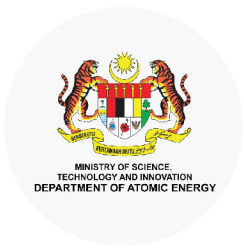
STANDARD FOR CERTIFICATION OF RESEARCH REACTOR OPERATOR



Atomic Energy Licensing Board
Ministry of Science, Technology and Innovation
Batu 24, Jalan Dengkil, 43800 Dengkil, Selangor

Tel: 03-8922 5888
Fax: 03-8922 3685
Laman Web: <http://www.aelb.gov.my>

[LEM-TEK-54Sem1.pdf \(aelb.gov.my\)](http://www.aelb.gov.my/LEM-TEK-54Sem1.pdf)



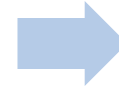
Licensing Process Flow for Nuclear Installation

Applicant

- Letter of Intent
- Appointment of RPO
- Radiation Protection Programme/Security Plan/Emergency Plan
- Technical Document: RIA/SAR
- Requirement for Sitting part
- Requirement for Construction
- Requirement for Operation

Assessment

- Nuclear Installation Division
- Licensing Division



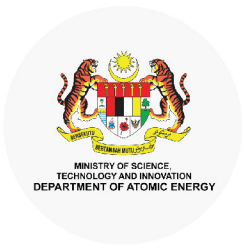
recommendationn

- Taskforce
- Standing Safety Committee
- Sub-standing Committee



Licensing Decision

- Board



Thank you!