FNCA
Forum for Nuclear Cooperation in Asia

NUKLEAR MALAYSIA

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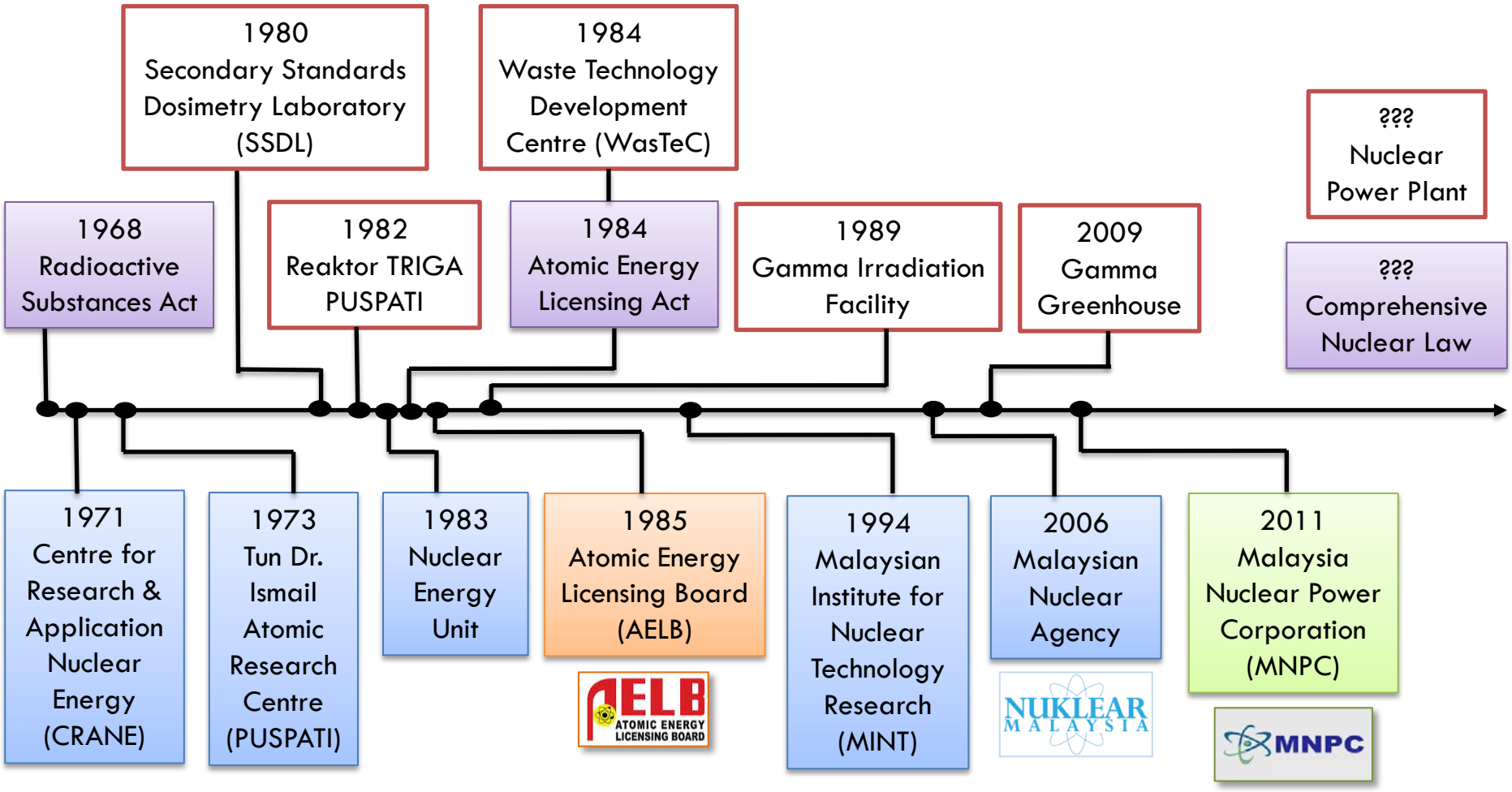
CONTENT

- **GENERAL BACKGROUND**
  - Chronology
  - Responsible Bodies of Nuclear Activities in Malaysia
  - Ministerial Functions
  - Reaktor TRIGA PUSPATI
  - Nuclear Power Programme
- **NUCLEAR LAW**
  - International Conventions Related to Nuclear Safety
  - Hierarchy of Legal System
  - Act 304
- **NUCLEAR SAFETY ACTIVITIES**
  - Nuclear Malaysia as TSO
  - SSDL

GENERAL BACKGROUND

CHRONOLOGY


1980
Secondary Standards Dosimetry Laboratory (SSDL)
1984
Waste Technology Development Centre (WasTeC)
???
Nuclear Power Plant
1968
Radioactive Substances Act
1982
Reaktor TRIGA PUSPATI
1984
Atomic Energy Licensing Act
1989
Gamma Irradiation Facility
2009
Gamma Greenhouse
???
Comprehensive Nuclear Law
1971
Centre for Research & Application Nuclear Energy (CRANE)
1973
Tun Dr. Ismail Atomic Research Centre (PUSPATI)
1983
Nuclear Energy Unit
1985
Atomic Energy Licensing Board (AELB)
1994
Malaysian Institute for Nuclear Technology Research (MINT)
2006
Malaysian Nuclear Agency
2011
Malaysia Nuclear Power Corporation (MNPC)
AELB
ATOMIC ENERGY LICENSING BOARD
NUKLEAR MALAYSIA
MNPC

RESPONSIBLE BODIES OF NUCLEAR ACTIVITIES

- Prime Minister & Cabinet
  - Ministry of Science, Technology & Innovation
    - Malaysian Nuclear Agency (Nuclear Malaysia)
    - Atomic Energy Licensing Board (AELB)
  - Prime Minister's Department
    - Malaysia Nuclear Power Corporation (MNPC)
  - Ministry of Health
    - Medical Radiation Surveillance Division

NUKLEAR MALAYSIA

AELB ATOMIC ENERGY LICENSING BOARD

MNPC

MINISTERIAL FUNCTIONS

Source: Ministers of the Federal Government (No. 2) Order 2013 (PU (A) 184) under the Ministerial Functions Act 1969 (Act 2), 2013

NUKLEAR MALAYSIA

- Conduct **research and development (R&D), services and training** in the field of nuclear technology for national development
- Promote application, transfer and commercialization of nuclear technology
- Coordination & management of **nuclear affairs at national and international levels** and Liaison Agency to the IAEA
- National Authority & implementation of the CTBT

AELB ATOMIC ENERGY LICENSING BOARD

- Exercise powers under Act 304 and subsidiary legislation
- Coordination & management of **regulatory affairs** related to nuclear safety, security & safeguards with other national & international agencies
- **National regulatory agency** for the purpose of safeguards related to safeguards agreement with IAEA in the implementation of relevant international obligations
- Lead technical agency for **radiological emergencies & accidents**
- Implementing agency to counter nuclear terrorism & border control related to nuclear security

MNPC

- Planning, spearheading and coordinating the implementation of **nuclear energy development programme** and ensure the development of nuclear infrastructure is in line with IAEA guidelines

REAKTOR TRIGA PUSPATI (RTP)

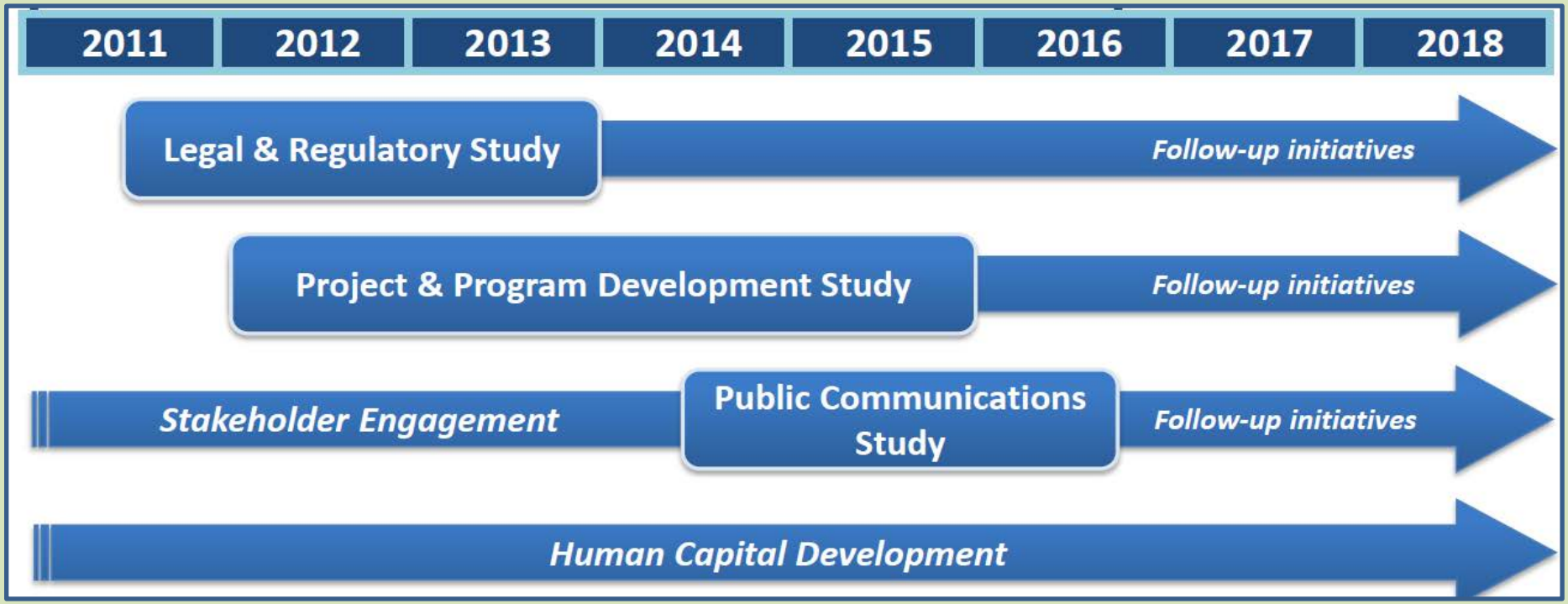
- Criticality 28 June 1982
- Analysis
- Radioisotope production
- Education & Training

- Research reactor simulator for education and training (E&T) in Malaysia.
- Effective demonstration of reactor concepts to the public and providing meaningful understanding of safe reactor operation.

NUCLEAR POWER PROGRAMME

CURRENT STATUS: PHASE I COUNTRY

VERY ACTIVE IN PLANNING, PREPARATION AND PROGRAM DEVELOPMENT BUT NO DECISION ON THE USE OF NUCLEAR ENERGY YET…



Source: Malaysia Nuclear Power Corporation (MNPC)

PHASE 1 INIR MISSION

Summary of Recommendations & Suggestions

Malaysia needs to strengthen its government commitment and enhance public awareness in order to progress further towards a knowledgeable decision

Malaysia needs to further develop its legal and regulatory framework

Malaysia needs to further develop its plans for financing the nuclear power plant and establishment of the owner/operator organisation

KEY CONCLUSION:
MALAYSIA HAS DEVELOPED A CONSIDERABLE BASE OF KNOWLEDGE AND IS WELL PREPARED TO MAKE AN INFORMED DECISION ABOUT INTRODUCING NUCLEAR POWER

Source: Malaysia Nuclear Power Corporation (MNPC)

NUCLEAR LAW

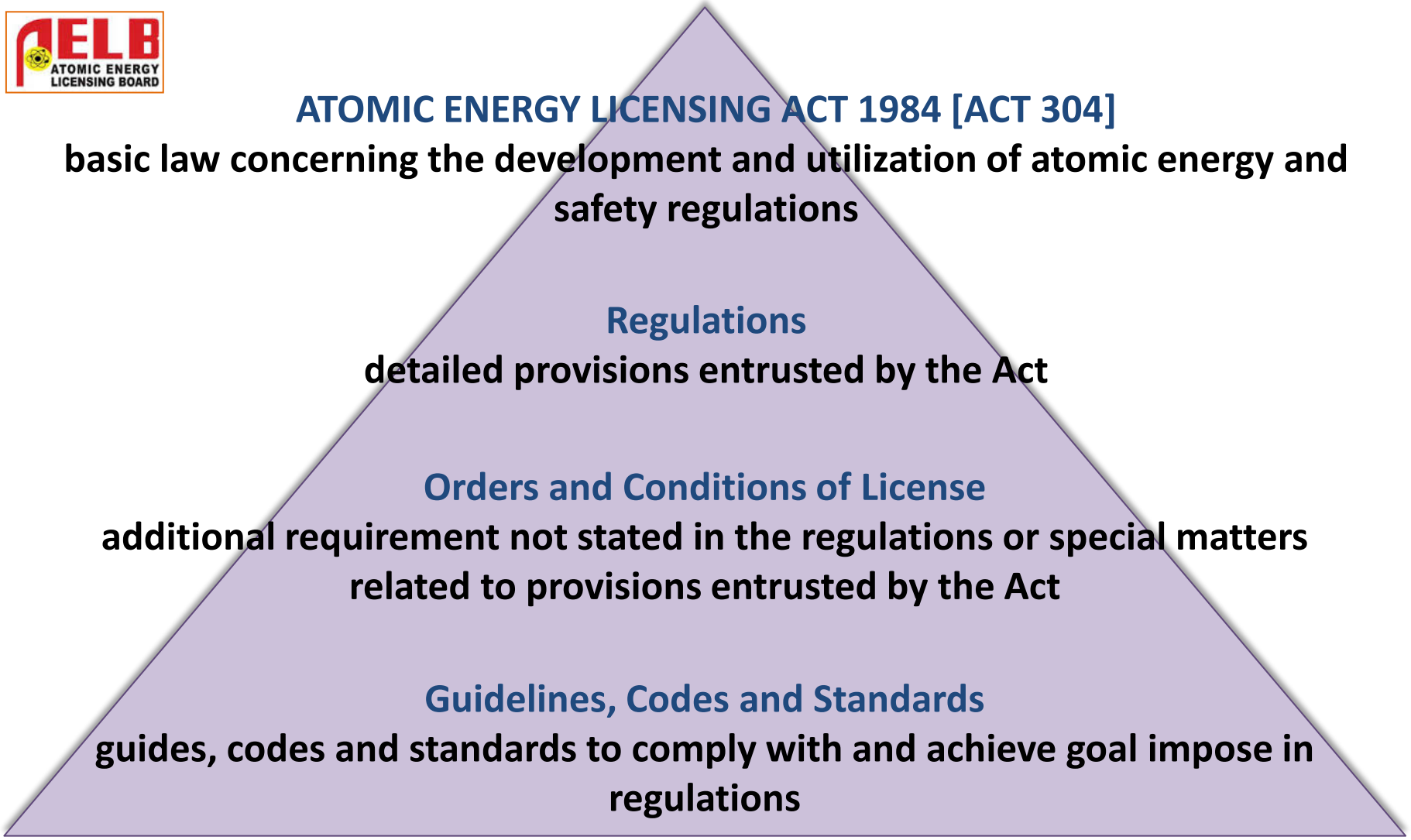
INTERNATIONAL CONVENTIONS & INSTRUMENTS RELATED TO NUCLEAR SAFETY

PARTY TO/COMMITMENT TO:
Convention on Early Notification of a Nuclear Accident
Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency
Code of Conduct on the Safety and Security of Radioactive Sources
Code of Conduct on the Safety of Research Reactors

NON - PARTY
Convention on Nuclear Safety
Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management

BILATERAL AGREEMENT(S) RELATED TO NUCLEAR SAFETY
MoU between AELB and Korea Institute of Nuclear Safety (KINS)
MoU between AELB and Nuclear Energy Regulatory Agency of Indonesia (BAPETEN)

HIERARCHY OF LEGAL SYSTEM



Source: Atomic Energy Licensing Board (AELB)

ACT 304

- Gazetted in 28 June 1984 under the purview of Ministry of Science, Technology and Innovation Malaysia (MOSTI), replaces and supersedes Radioactive Substance Act 1968
- Regulation and control of atomic energy, establishment of standards on liability for nuclear damage and for connected matters
- Some Parts of the Act: Establishment Of The Atomic Energy Licensing Board, Control And Licensing, Cancellation, Suspension And Renewal Of Licences, Health And Safety, Disposal Of Radioactive Waste, Liability For Nuclear Damage, etc

ACT 304

Part II, Section 3: Establishment of the Atomic Energy Licensing Board

- Body to be known as the Atomic Energy Licensing Board
- Consist of a Chairman and four other members - scientific or technical qualifications
- Representative from the Ministry responsible for health and the Ministry responsible for matters under this Act.

Part II, Section 8: Functions of the Board

- Advise the Minister and the Government of Malaysia on matters relating to Act 304
- Exercise control and supervision over the production, application and use of atomic energy
- Scientific and technical co-operation with institutions or organizations in nuclear matters or atomic energy

Part III, Section 15: Licensing authority

- Licensing authority under this Act shall be the Board.
- The Board shall grant a general licence to the Director General of Health to issue separate licences on behalf of the Board where such activities are in respect of medical purposes

MANAGEMENT OF SEALED SOURCES

LICENSE APPLICATION → **ISSUANCE OF LICENSE** → **SUBMISSION OF RETURN OF POSSESSION**

National Database System

IMPLEMENTATION OF PROVISIONS UNDER ACT 304

- Temporary storage prior to disposal – need to apply storage license (Class G License) with specific condition

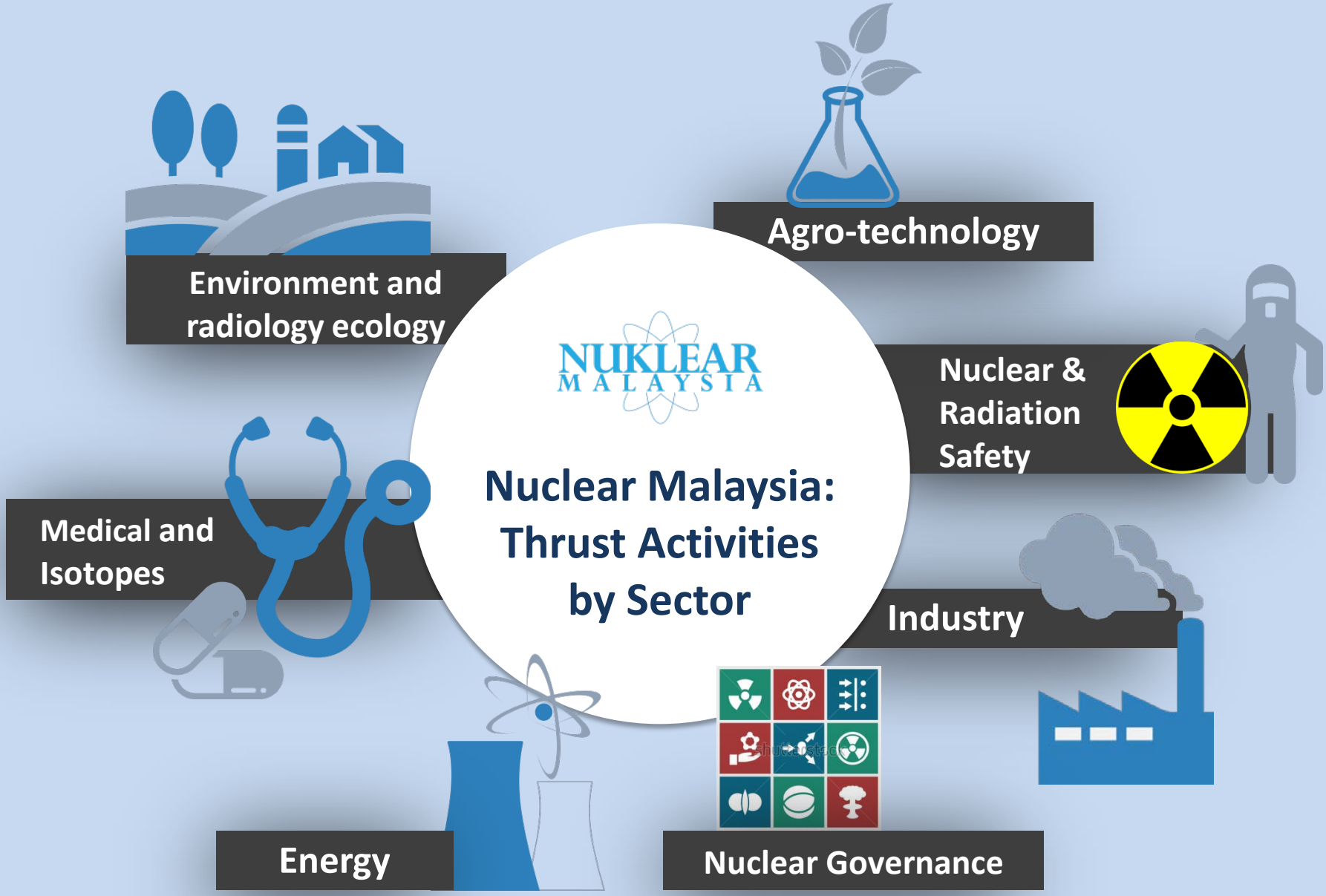
DISUSED SOURCE - Licensee are responsible to manage and bear the cost

1ST PRIORITY: RETURN BACK TO MANUFACTURER (LOU) FOR DISPOSAL

Unable to return to supplier?

- **SEND TO WASTE MANAGEMENT CENTRE, NUCLEAR MALAYSIA –** with justification

NUCLEAR SAFETY ACTIVITIES


Agro-technology
Environment and radiology ecology
NUKLEAR MALAYSIA
Nuclear & Radiation Safety
Nuclear Malaysia: Thrust Activities by Sector
Medical and Isotopes
Industry
Energy
Nuclear Governance

NUCLEAR MALAYSIA AS TSO

Radioactive Waste Management

National Radioactive Waste Management Centre managing radioactive waste from medical and industrial sectors

Radiological Impact Assessment (RIA)

Experience and expertise in performing RIA; consultancy services to industry; analytical radiochemistry and environmental monitoring

Radiation Protection

Offer consultancy, services and monitoring related to radiation protection; Biological and internal dosimetry

Non-Destructive Testing (NDT)

Provide NDT services and consultancy

Education & Training

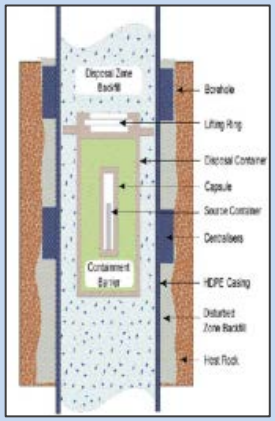
Provide education and training in the area of radiation protection, NDT, Nuclear Science Engineering, etc

Research Reactor

Reactor TRIGA PUSPATI

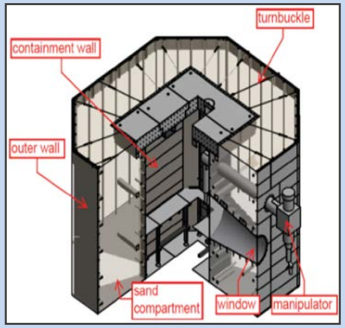
SECONDARY STANDARDS DOSIMETRY LABORATORY (SSDL)

- 1983
- IAEA/WHO Network
- Provision of radiation dosimetry
- Services for individual and workplace monitoring
- National centre for the calibration of radiation measuring instruments
- Appointed by as a Designated Institute for Measurement of Ionizing Radiation (Secondary Level)
- Accredited with ISO/IEC 17025:2005
- Students, trainees and fellows



BOREHOLE DISPOSAL FACILITY

- Project on borehole concept for the inventory of disused sealed radioactive sources, with IAEA technical and regulatory assistance
- This facility will be used as a future disposal facility for Disused Sealed Radioactive Sources (DSRS) and therefore will ensure the DSRS is managed in a safe and secure manner



MOBILE HOT CELL FACILITY

- is developing mobile hot cell facility for conditioning oNuclear Malaysia f spent high activity radioactive sources (SHARS) with local expertise and components.
- This facility is intended for handling SHARS at any remote location either due to emergency situation or other purposes

THANK YOU
TERIMA KASIH