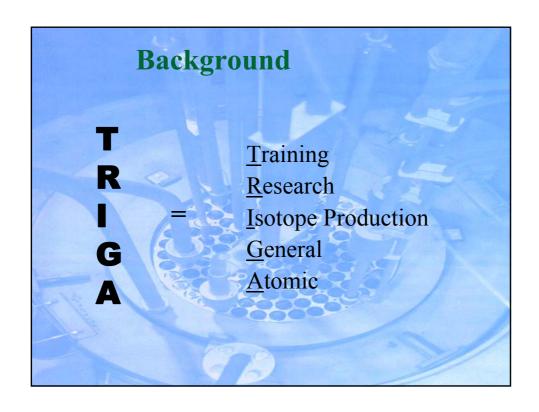


Background

- ▼The one and only nuclear research reactor in Malaysia
- **✓**Operated in 1982
- ✓ First <u>criticality</u> on 28 June 1982



| Reactor Characterization | |
|---|---|
| Reactor model | TRIGA MARK II |
| Maximum power | 1MW thermal (steady state) |
| Pulsing peak power | 1200MW (pulse width 11ms) |
| Nuclear fuel | U-ZrH1.6 (Standard TRIGA) |
| Enrichment | 8.5% w/o, 12% w/o, 20% w/o |
| Moderator / coolant | Light water (demineralized) |
| Reflector | Graphite |
| Typical neutron flux | 1 x 10 ¹² cm ⁻² s ⁻¹ (rotary rack) |
| Maximum neutron flux | 1×10^{13} cm ⁻² s ⁻¹ (central thimble) |
| Maximum coolant / moderator temperature | 49°C |
| Maximum fuel element temperature | 500°C |
| Cold clean critical loading | 2.5 kg U-235 |

Reactor Description

- **∀**Pool type
- ✓ 2.5m thick concrete wall:
 - to attenuate the emission
 - to shield the reactor environment from contamination
- ✓ Water in the reactor tank:
 - as a moderator
 - prevents radioactive N-16 reaching the surface

Reactor Description

- ✓ Equipped with control system
- **∀**Electronic instruments
 - to monitor reactor parameter
 - automatically shut down if exceeded the safety limit
- ∀ Area radiation monitoring (ARM)
 - to monitor the contamination level
 - covers several strategic location around the hall

Irradiation Facilities

▼Three locations in RTP:

- -in the reactor core
- -near the region of reactor core
- -outside the reactor using beam ports and thermal column

| Irradiation Facilities | |
|---------------------------------------|--|
| irradiation facilities | Location |
| Central Thimble (CT) | Ring A1 (center of reactor core) |
| Dry tube (DT) | Ring F11 |
| Isotope Production System (IPS) | Ring G8 |
| Pneumatic Transfer System (PTS) | Ring G20 |
| DNA irradiation tubes (Cd covered) | Ring F29 |
| DNA irradiation tubes (bare) | Ring G1 |
| Hexagonal irradiation position | Ring A1, ring B1 to B6 |
| Triangle irradiation position | Ring D5, F6, F7 and ring D14, E18, E19 |
| Small Angle Neutron Scattering (SANS) | Beamport #4 (beam size at specimen: 12 to 15mm) |
| Neutron Radiography (NUR2) | Beamport #3 (inlet aperture 5.4cm) |
| Thermal Column | |
| Unused beamports | beamport #1 (radial with plug) beamport #2 (tangential) |

| Neutron Activation Analysis (NAA) | Environmental Science Life Science Material Science Geological Science Archeology and Forensic Science |
|---------------------------------------|---|
| Radioisotope Production | Nuclear Materials For medical, industrial and agriculture application |
| Small Angle Neutron Scattering (SANS) | Structural studies of materials related to metals, ceramics, polymers and biology |
| Neutron Radiography (NR) | Non-destructive testing |
| Education | Reactor physics and engineering Reactor instrumentations Reactor utilization Nuclear materials Radiation source |
| Manpower Training | Reactor operation and maintenanceNuclear safety |

