

# Malaysian Research Reactor Activity

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December 2007

## Legal/Regulatory Framework

Regulator  
Atomic Energy Licensing Board (AELB)

Operator  
Malaysian Nuclear Agency (Nuclear Malaysia)

AELB and Nuclear Malaysia under Ministry of Science, Technology and  
Innovation (MOSTI)

By law AELB not dependent to Nuclear Malaysia, however in practice AELB still  
depend on Nuclear Malaysia.

AELB need 10 year from now to be fully independent from Nuclear Malaysia. ?

## AELB Activities

2006 and 2007

Licensing of Research Reactor

Review, Assessment & Verification: Safety Analysis Report(SAR)

Code & Standard: Reactor Operator Training, Maintenance Program, Quality Assurance Program etc.

Plant inspection ??

2008 ?

Code & Standard for Decommissioning.

## Legal / Regulatory Framework

- a) Decommissioning is covered in the existing Act but not so detailed. Already take into account and detailed out in the projected Act, which will be gazetted very soon.
- b) Decision has been considered and can be referred in the Radiation Protection (Basic Safety Standards) Regulations 1988.
- c) By law It is effective independence and clearly stated in the current Act. The RB is an independent entity (e.g. :own budget, decision made by Board members etc)
- d) As for the existing Act, the funding was not clearly stated but has already been considered in the projected Act.
- e) The responsibilities for decommissioning is clearly stated in the existing and projected Act as well as in the Regulations & License Conditions. The responsibilities of OO.

Ibrahim Muhamad, AELB

## Enforcement

Inspection, Assess, Verify

Document  
Plant

Continues improvement

IAEA: Expert Mission, TC etc.

A lot of meeting with Nuclear Malaysia to get explanation about SAR,  
etc.

Collaboration with BAPATEN, Indonesia.

Send 2 person to USA to take Reactor Operator Training Course for 4  
month.

## Nuclear Malaysia Activities

2006 and 2007

Research Reactor

Safety Analysis Report(SAR), Reactor Operator Training,  
Maintenance Program, Quality Assurance Program etc.

DOCUMENTATION improvement.

Nuclear Malaysia

Improving Safety ( to comply Licensing of Research Reactor requirement)

2007

Multi Purpose Reactor(MPR)

Nuclear Power Plant(NPP)

## Manpower for Reactor

Group of Staff	2005	2007
Senior Researcher (<10 year to retire)	1	3
Junior Researcher (Degree in Electrical, Electronic, Physic) (~ 30 year to retire)	2	8
Technical Support (~ 20 year to retire)	4	7

## Reactor Activity for 2008

Reactor operator Training for Junior Researcher.

Recollecting & Reorganized Document  
Operation, Maintenance, Modification

QAP  
Maintenance

Improving Plant

Decommissioning Plan

## Waste Management Center(WBC)

### 2 Building

short-live radionuclide

long-live radionuclide

### Manpower

2 Senior researcher ( 1 ready to retire, 1 <10year)

~3 Junior researcher ( ~ 30 year)

~10 Technical Support ( ~ 20 year)

## Heath physics

### Manpower

1 Senior researcher ( <10year to retire)

~6 Junior researcher ( ~ 30 year)

~10 Technical Support ( ~ 20 year)

1 Radiation Protection Officer(RPO)

~10 Radiation Protection Supervisor (RPS)

Every year Nuclear Malaysia conduct Radiation protection Course for outsider.

Examination was conducted by AELB, (RB)

In Malaysia, a lot of Radiation Protection Officer.

## Other Group/Unit

### Service

Electrical & Utility  
Civil

### Service, Research & Development

Information Technology  
Instrumentation & Automation  
Mechanical  
NDT  
Incenerator

## Basic of Decommissioning (I)

- a. Decommissioning Plan is trying to be made from last year.
- b. No decision has been made on the overall decommissioning strategy(direct/deferred dismantling).
- c. No attempt has been yet to assess the radionuclide inventory.
- d. Cost estimate also has been made last by Waste Management Group.
- e. Funds will be available when needed if has been willingness from Nuclear Malaysia's top management.
- f. Estimated Maximum Volume of Waste After D&D has been made last year by Waste Management Group.
- g. Necessary Waste Storage and Disposal Capacity are available or to be available except for fuel elements.

## Basic of Decommissioning (II)

- h. No decision has been made for the the end of decommissioning.
- i. Consideration has been given to the waste processing needs by Waste Management Group. However, no consideration has been made for the needs of equipment for dismantling of the research reactor, including technical alternatives.
- j. Consideration not been given yet to co-operation with other countries, hiring contractors, renting equipments.

## Manpower for NPP

2007

Intake of 40 new researcher for NPP in progress

Reactor, Heath Physics & Waste Management group will receive benefit

## Time for Decommissioning?

MPR

Start 2010

Complete 2015

NPP

Start 2015

Complete ?

Decommissioning

Start 2015 ?

*THANK YOU*