COUNTRY STATEMENT
RESEARCH REACTOR DECOMMISSIONING AND DEMONSTRATION PROJECT
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1.0 Introduction

As the participant representing Malaysia in this Project, I would like to thanks the Agency for inviting Malaysia to be part of this very important Project. Malaysia also would like to thank the Agency for their effort in preparing and inculcate this Project which can be used as guidance for the decommissioning of nuclear installations.

Atomic Energy Licensing Board (AELB) has been established pursuant to Act 304, and has been assigned the main responsibilities for the supervision of nuclear activities and facilities. This includes responsibilities for the regulation of nuclear installations, use of radioisotopes, radioactive waste and transport safety, and a role in the national system for emergency preparedness. AELB also is empowered to issue guidelines and regulations for all nuclear activities in Malaysia.

From Malaysia point of view, by participating in this Project, we will be able to gained and enhance our knowledge in this field. This is important, after considering the age of our reactor, which is almost 25 years now

Malaysia does not have any nuclear power plant. The Malaysian Research Reactor already known as Puspati Research Reactor (RTP) (TRIGA Mark II) came into operation in 1982, located at Malaysian Institute for Nuclear Technology Research (MINT) in Bangi. This facility is in the early stage of licensing process in the effort to be in line with obligations agreement i.e. to ensure all relevant IAEA standards are followed. The OO (MINT) has staff with considerable knowledge of the reactor design and its operation. To date, reactor unit have 4 operators and 2 senior operators to operate the reactor. The staff training programme for operators consist of a combination of self study, formal training course, workshops and seminars and on-the-job training at home or abroad.

1.1 Current Status of Research Reactor

The reactor is currently in full and safe operation. The reactor is normally operated on a daily 6-hour basis except during the production of radioisotopes which

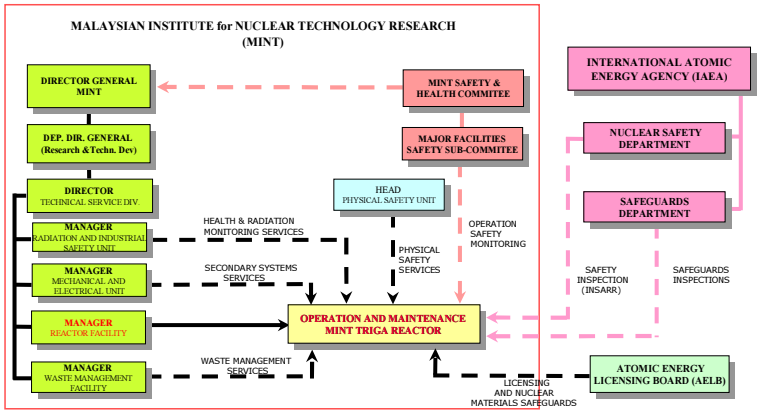
demand the operation up to 12 hours at a time.. For most of this time the reactor runs in the steady state mode with a nominal power of 750 kW_{th}. Since its commissioning in June 1982 to the end of 2004, the reactor has accumulated a total of 21143.62 hours of operation, corresponding to a cumulative thermal energy release of 14092.96 MW- hours.

Most of the time, up to 95%, the RTP is utilized for irradiation of samples from NAA activity. However, a 12 hours operation has been accomplished several times for production of radioisotopes such as Samarium –153 and Iridium-192. The 72 hours continuous irradiation for TC-99m production has seized since 1994 due to economic reason. The reactor was shut down for long time in 2000 due to ventilation system upgrading.

2.0 Research Reactor Decommissioning Plan

Figure 1.0 shows the typical interactions of various parties in managing the usage of RTP.

Figure 1.0 MANAGEMENT OF MINT TRIGA REACTOR



2.1 Pending Issues and Strategies

The main issues of concerns with regard to RTP management are as shown in the Table 1.0 below, listed according to priorities.

Table 1: List of Pending Issues, Mitigation and Strategies

Nos	Issues	Mitigation and strategies
1	Manpower Shortage and Untrained Personnel	• Restructure submitted in 2003, approved by end 2005 • Expect to increase Researchers to 15 numbers. • Enhancement in Engineering, Safety and Physics Capacity and Capabilities through international collaboration
2	Control Console Ageing	• Replacement of ageing instruments. • Planned collaboration with Indonesia • A task group (5 researchers from other Division) was set up to collaborate with Indonesia • Mixture of local and imported systems
3	Primary Cooling System Ageing	• Specification Review after visit to Indonesian Rx 2005 • Emulate the experience of Indonesian Triga Rx /bilateral collaboration
4	ISO/QAP/OHSAS 18000 /IMS implementation – not yet in place	• QAP 2005/06, OHSAS 18000 in 2005/06, IMS Planned to be in place by 2007/8 • QA partially outsourced to Engineering group • Collaborate with Australia/ IAEA
5	SAR Review – not completed yet	• Expected to be reviewed by internal reviewer by October, 2005 • Outsource to expert from local Universities/Indonesia for external review/areas without expertise
6	Spares – may be more difficult to get due to obsolete technology, local beurocracy and political issues	• Need group/ member states strategies to develop local contents • Need IAEA support

7	Emergency Response	• Need continuous training and drills at local level
8	Seismic analysis studies	• Need expertise from local Universities/IAEA • Emulate from Indonesian Experience
9	RCM system and ISI	• Obtain training modules conducted by IAEA • Collaborate with other member states
10	Financial	• Request for development budget in 9th Malaysia Plan (2006-2010)

2.2 Legal and Governmental Infrastructure Pursuant to Decommissioning of Research Reactor

i. Establishment of a National Regulatory Framework
ii. Establishment of the Organizational Structure of the Regulatory Body
iii. Fulfilment of the Activities of the Regulatory Body
iv. Establishment of Specific Infrastructures

2.3 Establishment of a National Regulatory Framework

2.3.1. Legislation and regulations

The Atomic Energy Licensing Act 1984 (AELA) be promptly amended to update its provisions. The AELA is undergoing the process of amending – phase 1 (internal committee). Other regulations (BSS, Transport, Licensing) undergoing amending process at different stages while other new regulations are in the process of drafting (Management of RAW, Medical Devices).

2.4 Establishment of AELB

AELB has been established on the February 1st, 1985 under Section 3 of the Atomic Energy Licensing Act 1984 (Act 304). The main task of the AELB is to regulate and supervised the activity related thereto Act 304. AELB was originally put under Prime Ministry Department, then Ministry Of Science, Technology & Environment. After election Mac 2004, the department was shift under the Ministry Of Science, Technology and Innovation

2.5. Fulfillment of the Activities of AELB

The only nuclear installation in Malaysia (MINT) are licensed by AELB. Current focus is to ensure the Safety Analysis Report complies with International Standard. Effort to enhance authorization, inspection and enforcement procedures are being carried out.

2.6. Establishment of Specific Infrastructures

2.6.1. Infrastructure for emergency preparedness

AELB was recognized as the lead agency for radiological incident/accident in Malaysia. A National Committee chaired by the PM has been established. Efforts to enhance the capabilities are being carried out as recommended in the Peer Review Mission Feb 2004.

2.6.2. Other specific infrastructures

Other infrastructure such as Radioactive Waste Management and SSDL has been established at MINT and has been providing services to users in Malaysia and nearby countries. Findings in the Peer Review Mission (ORPAS): Milestone 2 effectively achieved.

3.0 Conclusions

The major issues lingering MINT RTP is on the shortage of manpower trained in nuclear physics, engineering and safety. Other issue will be training and equipping the staff with the required know-how and technologies. This may require both efforts and financial support. Politically, nuclear science and technology is a sensitive technology and Malaysia may not be able to enjoy as much the benefit as in the early stage of development due to this sensitivities.

All other issues tabulated above are actually very much manpower related, accept for the availability of reactor spares and the price. As we all know, TRIGA reactor system is supplied by the General Atomic of USA, the ease of getting the supply is currently cost related. For the electronic components, spares for analogue system are of special orders, thus, highly priced. Under these circumstances, not many third world countries can afford to buy enough spares, and if this is safety related, the Reactor integrity will be at stake.

Considering all factor related to continuing operating the reactor, we think the time has come for us to start think of perhaps to start planning for decommissioning our very own Triga Mk II research reactor.

Thank you.