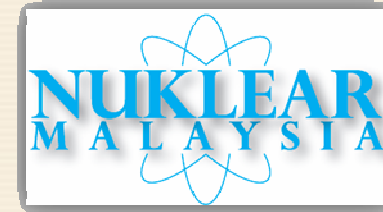
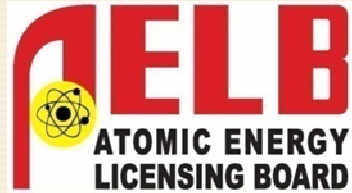


National Report: [MALAYSIA]



Ibrahim MUHAMAD & Khaironie MOHD TAKIP

R²D²P: Workshop on “Decommissioning Technologies”
Karlsruhe Research Centre, Germany; 06-10 July 2009



IAEA

International Atomic Energy Agency

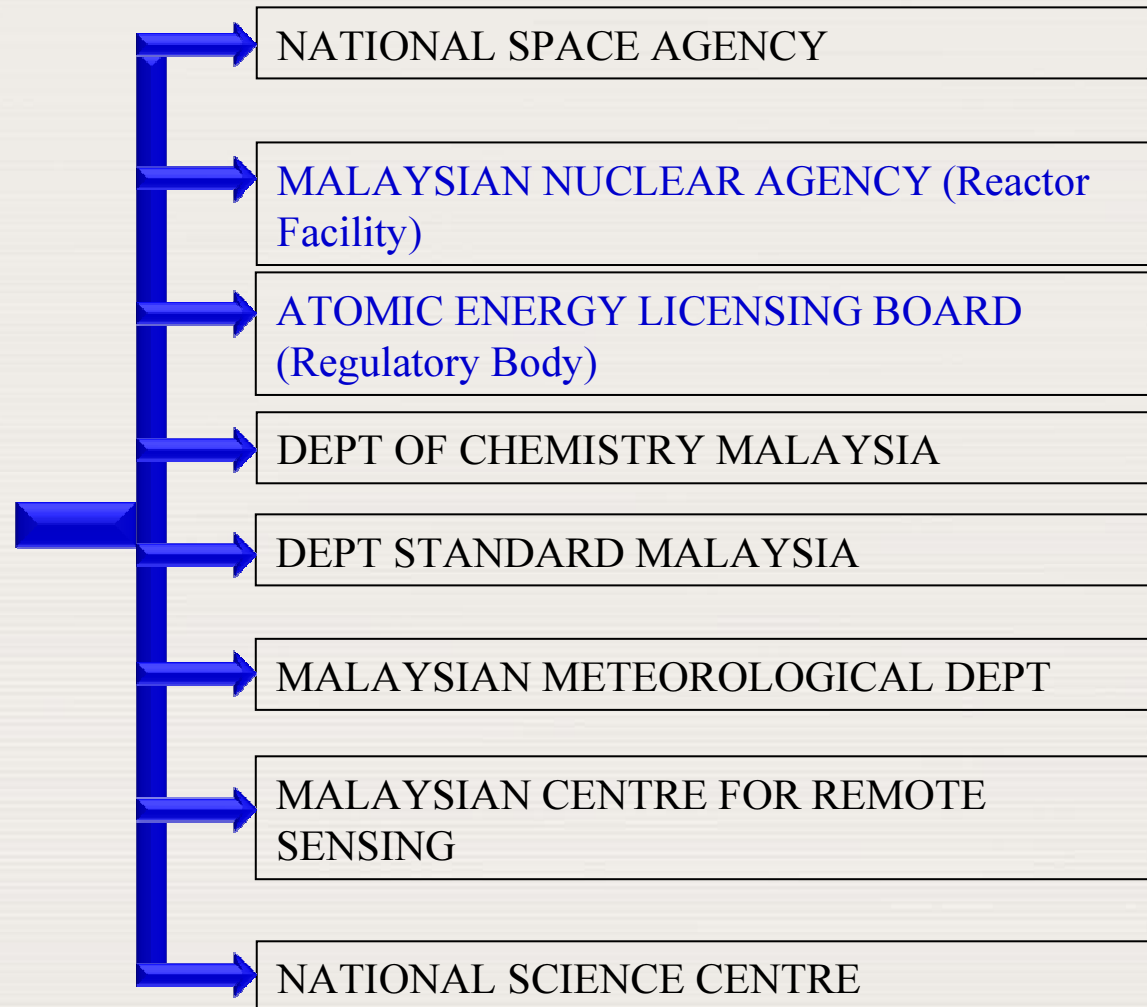
A : Independent regulatory body

- Is an independent regulatory body in place?
- Yes / No?
- Explain actions taken to correct a 'no independence' situation / timeframe

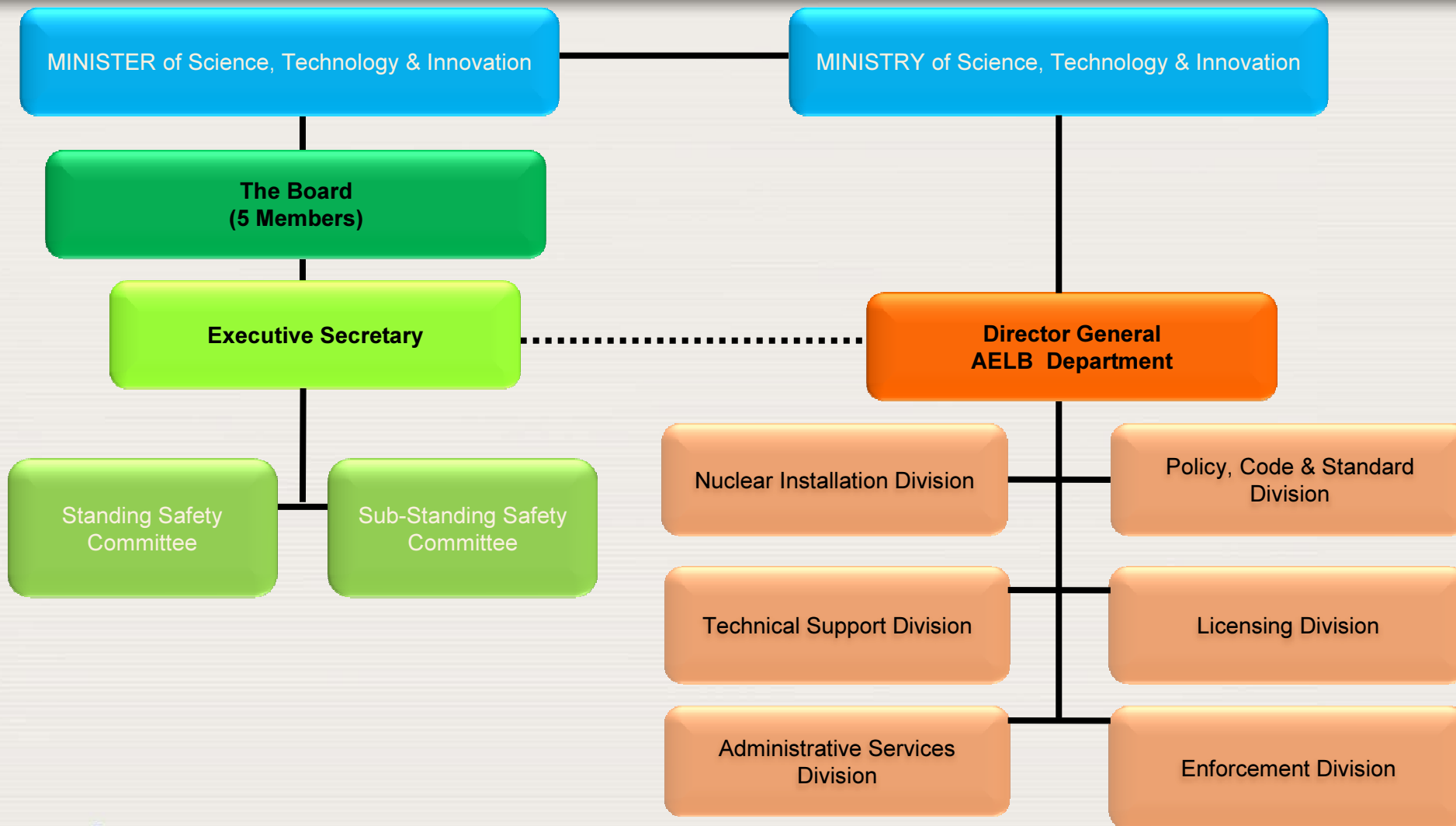
A-1/5: Regulatory Body (AELB) : Yes, it is Independent but not totally.



**MINISTRY OF
SCIENCE,
TECHNOLOGY
AND
INNOVATION**



A-2/5: Independence of AELB department from the Board



A-3/5: Action taken towards fully Independency of AELB

LEGAL FRAMEWORK PROGRESS

	2007				2008				2009				2010				2011					
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4		
Amendment of Act 304	Projected ACT 200_																					
Revision of Current Regulations	Licensing Regulation 1986, Basic Safety Standard Regulation 1988, Transport Regulation 1989																					
Development of New Regulations	Waste Management Regulation (2009), Nuclear Installation Licensing (2009), Safeguard Regulations (2010), Nuclear Security Regulations (2011)																					
Supervision of NPP (Licensing & Enforcement)						Inter-Agency Meeting with relevant Regulatory Authority (MHLG, EC, DOE, DOSH)																
Adoption of IAEA Standards	49 Documents related to Research Reactor & NPP																					
Bilateral Cooperation	MoU with BAPETEN, Indonesia (2008)																					
									MoU with KINS, Korea													

A-4/5: Action taken towards fully Independency of AELB

Amendment of Current Act 304 : Under Revision

Atomic Energy Licensing Act 200_ (Projected Act)

“regulatory authority” means Director-General, head of the department in the Ministry responsible for matters under this Act acting as the Executive Secretary;

Part I : Preliminary

Section 2 : Application of the Atomic Act

The Atomic Act shall have the force of law on Malaysia and for that purpose shall be construed in accordance with the provisions of this Act.

Section 3 : Act binds the Government



(1) This Act shall be binding on the Government.

A-5/5: Action taken towards fully Independency of AELB

Section 7 : Executive Secretary

- (1) The Director-General, head of the department in the Ministry responsible for matters under this Act shall be the Executive Secretary to the Board.

- (2) The Executive Secretary whose powers, duties and functions shall be –
 - (a) To administer this Act and any regulations and order made thereunder;
 - (b) To be responsible for and to co-ordinate all activities relating to radioactive material, nuclear material, irradiating apparatus and prescribed substance ...;
 - (c) To control by the issuance of authorizations which is in par with the requirements of the Act;
 - (d) ... delegate to any person or class of persons. (whether by name or office) such or part of its powers and duties under this Act as it may think fit.
 - (e) To conduct, enforce and regulate in relation to any aspect of developing criteria for safety, security and safeguard of radioactive material, nuclear material, irradiating apparatus and prescribed substance;

B: Legal and Regulatory Framework

- Is 'decommissioning' included in the national legal and regulatory framework?
- Yes / No?
- If 'No', explain the actions taken to correct the situation / timeframe

B-1/7: Yes, it is included but not clearly stated (**Under Current ACT 304 & Licensing Regulations 1986**)

- No clear provision for decommissioning.
- **Part III, Control and Licensing:**

Section 12.(1) *Without prejudice to the requirements of any other law, no person shall-*

(a) site, construct or operate a nuclear installation;

*(b) deal in, possess or **DISPOSE** of any radioactive material, nuclear material, prescribed substance or irradiating apparatus,*

unless he is the holder of a valid license issued under section 16(5) by the appropriate authority for such purpose and as specified in the license.

B-2/7: Provision for Decommissioning – Under Licensing Regulations 1986

- Part II, Classification of License:

Section 10. A Class G license is a license-

- (a) to DISPOSE a radioactive materials, nuclear materials, prescribed substances or their wastes;
- (b) to store radioactive materials, nuclear materials, prescribed substances or their waste prior to their disposal; or
- (c) to **DECOMMISSION** a milling installation, nuclear installation, waste treatment facility, irradiating apparatus or sealed source apparatus.

B-3/7: Action Taken **To Strengthened** The Situation

Amendment of Current ACT 304 : Under Revision

PART III : CONTROL AND AUTHORIZATION

- **Section 15 (1) – (3):** Authorization Requirements;

PART VIII : DECOMMISSIONING

- **Section 44 (1) – (8) :** Decommissioning Requirements;
 - **Sub-section (5) – (8) :** Decommissioning Plan;
 - **Sub-section (2) – (8) :** Responsibilities of Licensee in Decommissioning; and
- **Section 45 (1) – (2) :** Financing of Decommissioning.

B-4/7: Action Taken **To Strengthened** The Situation

- **Section 15(1) : Authorization Requirements**

Without prejudice to the requirements of any other law, no person shall, with or without intention, undertake any of the following activities-

*(a)planning, designing, siting, constructing, commissioning, operating **including extended shutdown or decommissioning a nuclear installation;***

(b)dealing with any radioactive material, nuclear material, prescribed substance or irradiating apparatus,

unless he is the holder of a valid authorization issued under Section 23(3) by the regulatory authority for such purpose and as specified in the authorization.

B-5/7: Action Taken To **Strengthened** The Situation

- **Section 44 : Decommissioning Requirements**
- (1) Any nuclear installation shall not be decommissioned without prior approval by the regulatory authority.
- (2) shall perform a baseline survey of the site, including radiological conditions, prior to construction, to develop information for comparison with the end state after decommissioning.
- (3) shall prepare and maintain relevant documents and record for a specified period of time before, during and after decommissioning as determined by regulatory authority.
- (4) The regulatory authority shall evaluate the end state of the nuclear installation after decommissioning; activities have been completed to ensure that relevant regulatory requirements have been met.

B-6/7: Action Taken **To Strengthened** The Situation

- (5) The nuclear installation site shall not be released from regulatory control until the licensee has demonstrated that the end state in the decommissioning plan has been reached and that any other additional regulatory requirements have been met.
- (6) The licensee shall provide periodic reviews, updates, revisions and changes of the decommissioning plan shall follow the maximum time intervals between such reviews and updates as specified by the regulatory authority.
-
- (7) Any revision and updates of the decommissioning plan reflecting significant changes shall be approved by the regulatory authority.
-
- (8) The licensee shall submit the final decommissioning plan for approval and specified by the regulatory authority within an established period after the cessation of licensed activities.
-

B-7/7: Action Taken To Strengthened The Situation

Part IX : Decommissioning License

Section 15 : Technical Requirements;

Section 16 : Release From Regulatory Control.


Part X : License Fee

Section 19 : Decommissioning Fund

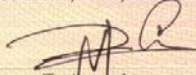
C: License / authorisation

- Does the RR have a valid license or other official form of authorization from the regulator
- Explain type of license/authorization
- Explain actions taken to correct a 'no license' situation / timeframe


C-1/2: Yes, License had been issued to RTP


Nomor Siri: 006404

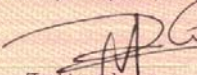
AKTA PERLESENAN TENAGA ATOM 1984
 PERATURAN-PERATURAN PERLINDUNGAN SINARAN (PERLESENAN) 1986
LESEN
 [Peraturan 18]

BORANG LPTA/BL/1	KELAS LESEN
	F
Menurut Akta Perlesenan Tenaga Atom 1984 dan peraturan-peraturan yang dibuat di bawahnya, Lembaga Perlesenan Tenaga Atom/Ketua Pengarah Kesihatan dengan ini mengeluarkan lesen seperti berikut:	
Nombor Lesen LPTA/A/1026	Tarikh mula 01.09.2004
Nombor Fail LPTA(S)-P&P/025/043	Tarikh tamat 31.08.2007
Nama Pemegang Lesen INSTITUT PENYELIDIKAN TEKNOLOGI NUKLEAR MALAYSIA (Y.Bhg. DR HAJI DAUD BIN MOHAMAD)	
Alamat Surat Menyurat KOMPLEKS PUSPATI BANGI 43000 KAJANG SELANGOR	
Nombor Telefon 03-8925 0510 / 11	
Alamat Kemudahan/Premis BLOK 20 BANGUNAN REAKTOR MINT BANGI 43000 KAJANG SELANGOR	
Nama Penyelia	ADNAN BIN BOKHARI
Nombor Kad Pengenalan/Pasport	570408-05-5875
Nama Pegawai Perlindungan Sinaran	MOHD YUSOFF BIN IBRAHIM
Nombor Kad Pengenalan/Pasport	570616-03-5619
Tujuan MENYENGGARA, MEMILIKI, MEMPUYAI, MENGGUNA DAN MENGENDALI KEMUDAHAN PEPASANGAN NUKLEAR	
Butir-butir mengenai Rades/Bahan/Pemasangan LIHAT LAMPIRAN A	
Lesen ini adalah tertakluk kepada Akta Perlesenan Tenaga Atom 1984 dan peraturan-peraturan yang dibuat di bawahnya dan syarat-syarat seperti yang dilampirkan.	
 LIHAT LAMPIRAN B	
[Tandatangan] Setiausaha Eksekutif/ Ketua Pengarah Kesihatan DR. REHIR BIN DAHALAN SETIAUSAHA EKSEKUTIF LEMBAGA PERLESENAN TENAGA ATOM	

Pernyataan Keselamatan Pribadi


Nomor Siri: 006199

AKTA PERLESENAN TENAGA ATOM 1984
 PERATURAN-PERATURAN PERLINDUNGAN SINARAN (PERLESENAN) 1986
LESEN
 [Peraturan 18]

BORANG LPTA/BL/1	KELAS LESEN
	B
Menurut Akta Perlesenan Tenaga Atom 1984 dan peraturan-peraturan yang dibuat di bawahnya, Lembaga Perlesenan Tenaga Atom/Ketua Pengarah Kesihatan dengan ini mengeluarkan lesen seperti berikut:	
Nombor Lesen LPTA/A/1027	Tarikh mula 01.09.2004
Nombor Fail LPTA(S)-P&P/025/043	Tarikh tamat 31.08.2007
Nama Pemegang Lesen INSTITUT PENYELIDIKAN TEKNOLOGI NUKLEAR MALAYSIA (Y.Bhg. DR HAJI DAUD BIN MOHAMAD)	
Alamat Surat Menyurat KOMPLEKS PUSPATI BANGI 43000 KAJANG SELANGOR	
Nombor Telefon 03-8925 0510 / 11	
Alamat Kemudahan/Premis BLOK 20 BANGUNAN REAKTOR MINT BANGI 43000 KAJANG SELANGOR	
Nama Penyelia	ADNAN BIN BOKHARI
Nombor Kad Pengenalan/Pasport	570408-05-5875
Nama Pegawai Perlindungan Sinaran	MOHD YUSOFF BIN IBRAHIM
Nombor Kad Pengenalan/Pasport	570615-03-5619
Tujuan MEMBELI, MEMPUYAI, MEMILIKI, MENSTOR, MENGIMPORT-EKSPORT, MENGANGKUT, MENGGUNA DAN MENGENDALI BAHAN NUKLEAR	
Butir-butir mengenai Rades/Bahan/Pemasangan LIHAT LAMPIRAN A	
Lesen ini adalah tertakluk kepada Akta Perlesenan Tenaga Atom 1984 dan peraturan-peraturan yang dibuat di bawahnya dan syarat-syarat seperti yang dilampirkan.	
 LIHAT LAMPIRAN B	
[Tandatangan] Setiausaha Eksekutif/ Ketua Pengarah Kesihatan DR. REHIR BIN DAHALAN SETIAUSAHA EKSEKUTIF LEMBAGA PERLESENAN TENAGA ATOM	

Pernyataan Keselamatan Pribadi

C-2/2 : Details of the License

- Had been licensed since 2005
- Class of License:
 - ✓ A (Radioactive material, Am-241/Be);
 - ✓ B (Nuclear Material, U-235 & 238);
 - ✓ F (Reactor Facility, RTP)
- 3rd renewal for the validity of : 1 Sept 2008 – 31 August 2011
- License Conditions

D: Decommissioning planning / implementation

- Is a decommissioning plan available?
- Yes / No?
- Explain actions taken to finalise a decommissioning plan or explain progress of implementation / timeline / size of the planning or implementation team

D-1/2: Decommissioning plan – stated in SAR document

- **Licence Condition No. 7: Safety Analysis Report (SAR) Document**

7.1 Licensee shall establish a Safety Analysis Report (SAR) document based on the LEM/TEK/55, *Guidelines for the Preparation and Assessment of Safety Analysis Report Document for Research Reactor*.

7.2 Licensee shall comply and implement the Safety Analysis Report (SAR) document as what has been submitted to the Board. This document shall be updated in accordance to any changes/amendment to the operational procedure or on instruction by the Board.

(Chapter 19 of SAR : Decommissioning)

- **Licence Condition No. 36: Decommissioning**

Licensee shall officialy inform the Board on the intention to decommission nuclear installation not later then 30 working days after the official decision has been made by the person responsible to the licence, together with a complete decommissioning program.

D-2/2: Action Planned for Updating SAR document

- Last update in 2007 and reviewed in 2008;
- Next planned for updating the SAR : 2012 (as reported in the IAEA Technical Meeting on the Safety of Research Reactor Under Project and Supply Agreement, 2 – 5 June 2009);
- Conducted an IAEA Workshop on Safety Analysis and Regulatory Requirements for Research Reactor Modification, 20 – 24 April 2009
 - Part of the updating Chapter 16 and other relevant chapter;
 - Preparation for upgrading RTP (instead of decommissioning):
 - Analog to Digital Console; and
 - Power upgrade

E: Decommissioning cost calculation / funding

- Has a decommissioning cost calculation been carried out?
- Yes / No
- Explain actions for a cost calculation / timeline
- Is funding secured?
- Yes / No
- Explain funding (Government, dedicated fund)

E-1/2: Decommissioning Fund

PART VIII : DECOMMISSIONING

- **Section 44 (1) – (8) : Decommissioning Requirements;**
 - **Sub-section (5) – (8) : Decommissioning Plan;**
 - **Sub-section (2) – (8) : Responsibilities of Licensee in Decommissioning; and**

- **Section 45 (1) – (2) : Financing of Decommissioning.**
 - Current RTP is owned by government – decommissioning fund is secured by the government.
 - Funding application will be prepared by the operator once the decision for decommission is made.

E-2/2: Cost Estimation

- Partially included in Chapter 19 of SAR document.
- Estimation based on:
 - ✓ Demolition of Rx building;
 - ✓ Estimation of generated waste and waste management.

F: Progress and Achievements

- What aspects of decommissioning have you successfully addressed to date?
- What aspects of this work would you share with others to help them addressing similar problems?

F-1/2: Progress and Achievements

- Supervision of RTP through licensing;
- Inclusion of decommissioning requirement in the Conditions of License;
- Clearly spell-out the provision under the Projected Act and Amended Licensing Regulations;
- Completion of pre-decommissioning plan (Chapter 19 of SAR document);
- Development of RTP's QAP document for decommissioning.
- Certification of reactor operator by AELB

F-2/2: Areas for Sharing

- RTP was in operation since 1982 without any “formal” supervision from regulatory body;
 - Because of that, only 14/20 SAR Chapter completed. Once it is license, all 20 chapter was completed;
- No clear provision for decommissioning under the Act 304 and Licensing Regulations 1986;
 - After implementation of “licensing”, there is a need to clearly spell-out the provision under the “new Act” and “new Licensing Regulations”;
 - Projected Act and amended licensing regulations almost completed, which addressed provision for decommissioning.

G: Issues / Challenges

- What issues / challenges do you have to develop / implement your decommissioning plan
 - Technical
 - Legal / regulatory
 - Administrative

G-1/1: Issues / Challenges

- Lack of Knowledge and expertise;
- Lack of Manpower;
- Note :
- Since Malaysia doesn't have any intention to implement the decommission yet, issues and challenges are still unforeseen

Thank you