TOWARD ENSURING SAFETY AND SECURITY IN RADIOGRAPHY WORK ENVIRONMENT FOR WORKERS AND PUBLICS

Zainal Abidin bin Husain
Faeizal bin Ali

Enforcement Division
Atomic Energy Licensing Board
Ministry of Science, Technology and Innovation
http://www.aelb.gov.my
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INTRODUCTION
History

1st Radiation Use In Malaysia

1897
Hospital Taiping, Perak

Revoke: 01 Februari 1985

Radioactive Substance Act, 1968

Sinar X

Atomic Energy Licensing Act, 1984 (Act 304)

Section 3(1) Act 304
Establishment Of Atomic Energy Licensing Board (AELB)

- Section 3(1), Act 304, provide the establishment of Atomic Energy Licensing Board which is responsible for Minister of Ministry of Science, Technology and Innovation (MOSTI).
- Five (5) members are appointed by Minister of Science, MOSTI
- Director General of AELB department is the Board’s executive secretary.
  - 25th establishment anniversary of AELB department on 1st February 2010.
ORGANIZATION STRUCTURE

MINISTER OF MOSTI

BOARD MEMBERS

SECRETARY GENERAL, MOSTI

DIRECTOR GENERAL

SAFETY STANDING COMMITTEE

SAFETY SUB-STANDING COMMITTEE

DIVISION MANAGEMENT SERVICES

DIVISION POLICY, CODE & STANDARD

DIVISION LICENSING

DIVISION ENFORCEMENT

BRANCH- NORTH

BRANCH- SOUTH

BRANCH- EAST

BRANC-.EAST M’SIA

DIVISION NUCLEAR INSTALLATION

DIVISION TECHNICAL SUPPORT SERVICES
AELB Services Office

KEMAMAN
East Branch

BANDAR PERDA
North Branch

HQ ; Dengkil

BINTULU
East Malaysia Branch

KULAI
South Branch
Mission And Vision

**MISSION**

Encouraging innovation culture to ensure the Safe and Peaceful Uses of Radiation and Nuclear Technology.

**VISION**

Remaining a relevant regulatory authority with credibility in radiation and nuclear safety, security and safeguarding its peaceful uses for national sustainable development.

2. Advise Minister and Government of Malaysia on matters relating to Act 304 and development pertaining thereto

3. Establish, maintain and develop scientific and technical cooperation in relation to nuclear matters

4. Implementation of obligation arising from agreement, convention or treaties relating to nuclear matters

5. To do such other things arising out of or consequential to the function of the Board under Act 304

Board’s Function
Type Of License Activity

- INDUSTRIAL RADIOGRAPHY
- IRRADIATOR
- GAUGING
- MINERAL-GAUGING
- MINERAL
- MAINTENANCE
- OIL LOGGING
- RESEARCH REACTOR
- SELLER-MINERAL
- SELLER-GENERAL(INDUSTRIAL)
- SELLER-MEDICAL EQUIPMENT
- SELLER-TENDERING
- SELLER-SMOKE DETECTOR
- SELLER-MANUFACTURER
- TRAINING CENTER
- CONSULTANT
- HIGHER EDUCATION CENTER
- RESEARCH CENTER
Atomic Energy Licensing Board
Ministry of Science, Technology and Innovation

• Act: provides the basic law concerning the development and utilization of atomic energy and safety regulations.

• Regulations: provides more detailed provisions entrusted by the Act.

• Provides additional requirement which not stated in the regulations or special matters related to provisions entrusted by the Act

• Provides codes and guides to comply with and achieve goal impose in regulations
Legislative Framework

i.  Main Legislation
    Atomic Energy Licensing Act 1984 (Act 304)

ii. Regulations
    - Radiation Protection (Licensing) Regulations 1986
    - Radiation Protection (Transport) Regulations 1989
    - Atomic Energy Licensing (Appeal) Regulations 1990
    - Atomic Energy Licensing (Basic Safety Radiation Protection) Regulations 2010
INDUSTRIAL RADIOGRAPHY ISSUES
Status Of Gamma Projector Model Series 660, 660A, 660AE, 660B and 660BE

- The licensee are not allowed to handle and to use the Gamma Projector Model Series 660, 660A, 660AE, 660B and 660BE

- Number of gamma projector in Malaysia: 50 units

- Type B(U) certificate for this series will not be renewed by manufacturer

- Effective date of AELB enforcement: June 1, 2013.

- Licensee must ready/plan to dispose the projector by methods which has been approved by AELB

- AELB has issued Client Notification number 1/2010 on July 8, 2010 in respect to the matter above
Recognition of Radiographer after 5 years

• After 5 years, radiographers are required to attend “refresher” courses provided by a recognized training agency.

• Justification to attend refresher is to ensure radiographers have the latest knowledge in the legislative Act 304 and its legislations.
Radiation Protection Officer (RPO) Training Course

- Effort to strengthen the RPO Training Course by including the element of “Safety” And “Security” in its syllabus:
  - 2 hour : Security Of Radioactive Sources
  - 1 hour : Radioactive Sources Security Management
  - 1 hour : For specific field (Industrial Radiography)

- Question on “security of radioactive sources” has been included in RPO examination since 2009
Radiation Protection Officer recognition

- Certificate industrial radiography Level 1 or Level 2 or Level 3 can be used to be a Radiation Protection Officer (RPO).

- AELB RPO (RT) certificate + JPK Level 1 or 2 or 3 = RPO(RT) under Act 304

- Minimum of 5 years working experience in industrial radiography, can be considered to be appointed as Radiation Protection Consultant (RPC) with a valid License H.

- Minimum of 10 years experience in industrial radiography, can be considered to be appointed as Radiation Protection Advisor (RPA)
  - MSc in Nuclear/Radiation Safety or equivalent
  - Interview by AELB management
Supplementary Warning Sign for Ionizing Radiation

- Supplementary Warning Sign for Ionizing Radiation is in addition to the radiation symbol used.

- Use for a part of Implementation Security of Radioactive Sources since 2007.

- Apply for Category 1, 2 and 3 sealed sources.

- This sign shall be affixed to the apparatus housing (housing device) for the radioactive material as a warning that they are not broken or cleared while warning that anyone should not be too close to the radiation equipment.

- AELB has issued Client Notification number 2/2008 on 25 April 2008 in respect of this matter.
Current Regulatory Initiative

Development of New Code of Practice on Radiation Protection in Industrial Radiography:

- **Code of Practice on Radiation Protection in Industrial Radiography Rev. 1** was approved in 2008.

- AELB in the process to amend Code of Practice (CoP) in Industrial Radiography that will include the element of security.

- “Security” is prerequisite of “safety”.


- Sub standing committee has been established in 2013 in order to amend the CoP.
Termination Of Radiation Worker

• Unannounced termination
  – 24 hours resign
  – “Missing in action”
  – Careless

• Termination procedure – not proper

• Action taken by AELB - “black list”
  – 3 years
  – Can be “appealed”
  – Complete medical check up for termination
  – Expenses for medical check up: borne by licensee
Requirement Of AELB Documentation

• Every licensee need to establish
  – Radiation Protection Program (RPP),
  – Radioactive Sources Security Plan; **and**
• MUST be prepared and accepted by AELB prior
  application of license
• Emergency plan need to be tested yearly
• Refer to AELB Client Notice Number 02/2013 dated
  15/01/2013
• Implementation date: 01 April 2013
Future requirement

• In principle, for future requirement, AELB is considering to recognize as follows:
  ❖ Industrial radiography Level 2 as radiographer.
  ❖ Industrial radiography Level 1 as trainee radiographer.
Source Registry Database Systems

Licensing and Enforcement Online System (eSPP)
- Benefit for RPO and RPS in term of submission an application
- Saving time
- Cost effective
- Notification of Industrial Radiography work via eSPP
- AELB inspector perform less unannounced inspection
- less human’s intervention, more electronically control system
Conclusions

• Implementation of radioactive source security element and strengthen safety requirement
• The responsibility to ensure safety and security is “LICENSEE”
• Establishment of safety and security culture among radiographer.
Thank you