International Workshop on Sustainable Management of Disused Sealed Radioactive Sources
Lisbon- Portugal
11-15 October 2010
Lebanon

Hassan BSAT

Section Head - LAEC

Introduction about Lebanese Atomic Energy Commission -LAEC

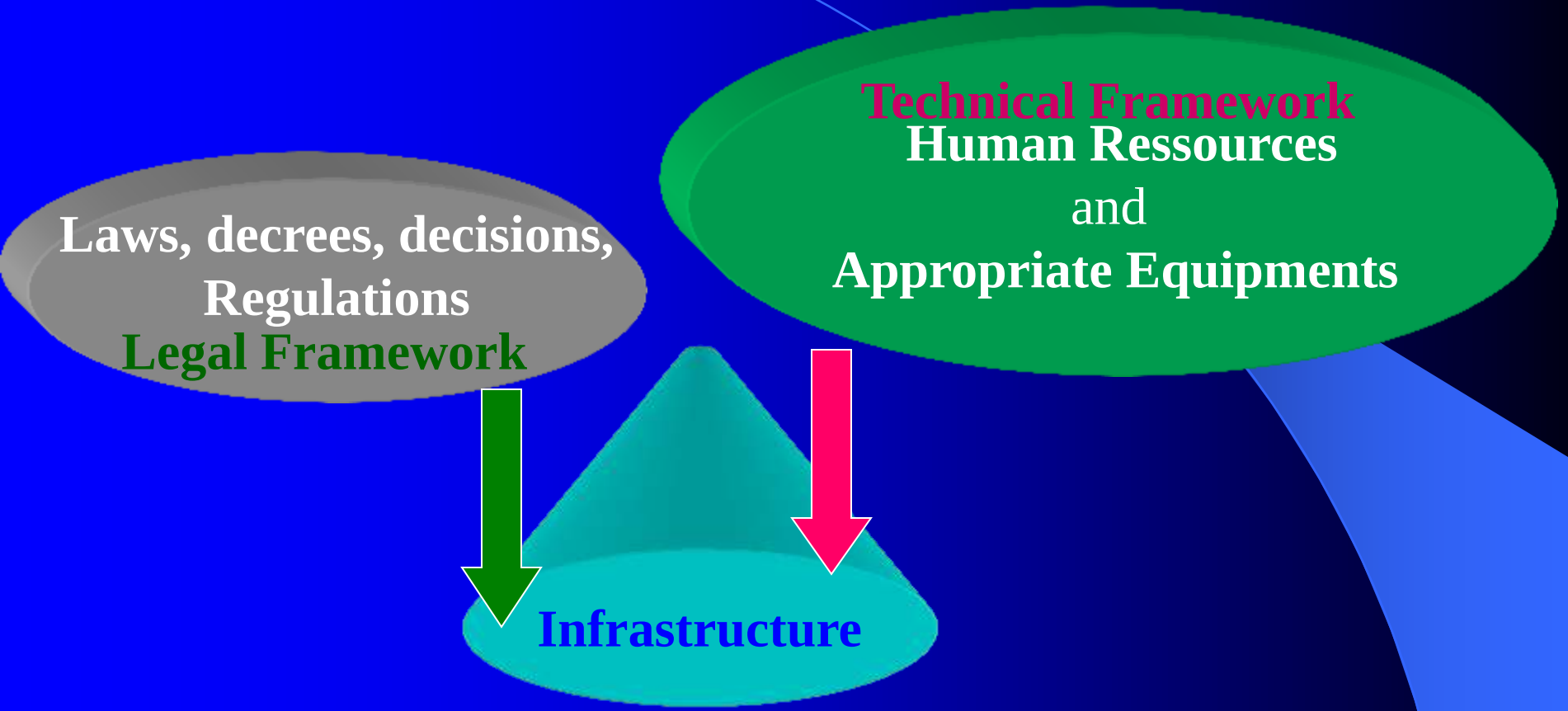
Establishment of LAEC, Mandate, Function and Responsibilities

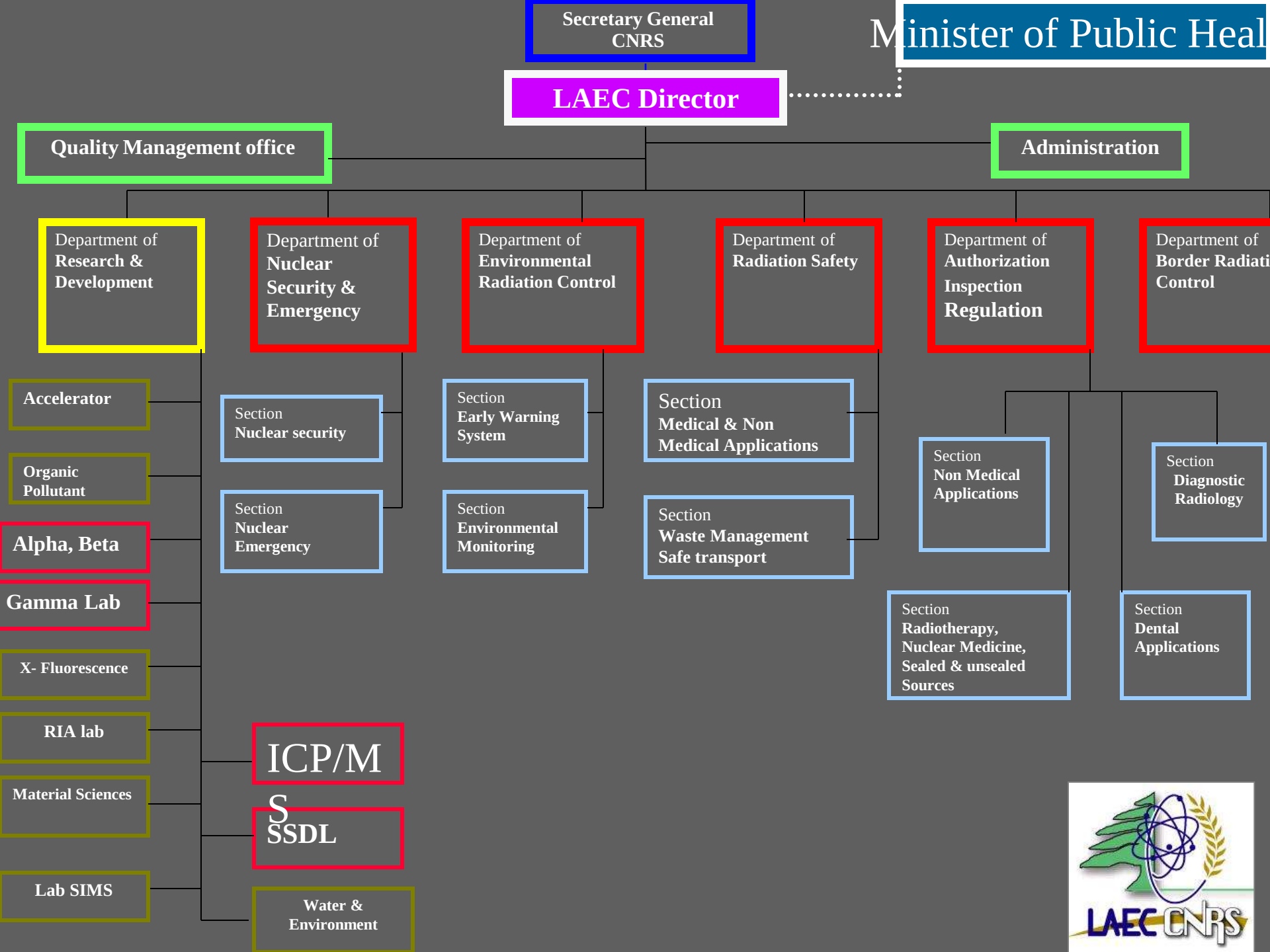
The LAEC was established in 1996 with the full support and assistance of the IAEA

LAEC mandate :

- Encourage and develop the peaceful use of Atomic Energy in the country and spread the Culture of Safety and Security of Radiation Sources
- Make applied research using nuclear techniques and technologies
- Establish the national infrastructure for radiation protection and prepare the necessary legislations for protecting the public, workers and environment against ionizing radiation .

Introduction




Secretary General
CNRS
Minister of Public Heal
LAEC Director
Quality Management office
Administration
Department of
Research &
Development
Department of
Nuclear
Security &
Emergency
Department of
Environmental
Radiation Control
Department of
Radiation Safety
Department of
Authorization
Inspection
Regulation
Department of
Border Radiati
Control
Accelerator
Organic
Pollutant
Alpha, Beta
Gamma Lab
X- Fluorescence
RIA lab
Material Sciences
Lab SIMS
Section
Nuclear security
Section
Nuclear
Emergency
Section
Early Warning
System
Section
Environmental
Monitoring
Section
Medical & Non
Medical Applications
Section
Waste Management
Safe transport
Section
Non Medical
Applications
Section
Diagnostic
Radiology
Section
Radiotherapy,
Nuclear Medicine,
Sealed & unsealed
Sources
Section
Dental
Applications
ICP/M
S
SSDL
Water &
Environment
LAEC CNRS

Regulatory Infrastructure Legal Status - I

1983: Issuing of 105/83 Decree Law (Regulating the use and protection against ionizing radiation)

- The Minister of Public Health issues licenses for all practices including Ionizing radiations
- The Minister of Public Health enforces any violation of safety regulations
- Any matter related to authorization shall be regulated by means of decrees issued by the Council of Ministers upon proposal of the Minister of Public Health.

Regulatory Infrastructure Legal Status - II

1996: Decision of Council of Ministers

LAEC is appointed to make inventory of radiation sources and Individual dose monitoring

1997: Decision of Council of Ministers

*Adherence of Lebanon to the Model Project on upgrading national radiation protection infrastructure.

*LAEC-CNRS is appointed to prepare the necessary legislations.

1999: Decision of Council of Ministers

CLEA is appointed for radiation control for imported steel and imported/exported metal scrap at all Lebanese check points

2000: Draft law (creation a regulatory body) submitted to the Parliament

Regulatory Infrastructure Legal Status - III

2004: Letter to the DG of the IAEA (LAEC/MOFA): Lebanon have made a political commitment to the Code of Conduct. 2007 : Guidance for safe transport of Radiation Sources.

2005: Decision of Council of Ministers

LAEC is appointed for radiation control of some imported and exported foodstuff (Public exposure control)

2005: Regulatory Decree 15512/2005

LAEC becomes the National Regulatory and Control Authority for all practices dealing With Ionizing radiation (import/export/use/decommissioning/safe transport/waste/ national register, environmental monitoring, issuance of regulations/cooperation)

Regulatory Infrastructure Legal Status - IV

2005: Decision of the Minister of Public Health

Put in application new licensing, registration and authorization process in accordance with the 15512/2005 regulatory decree

2007: Decision of Council of Ministers

LAEC is appointed for controlling the import of Nuclear materials and to report to the IAEA in the framework of the amended SQP (protocol of the NPT)

2009: Final safety draft regulations – preparation of security regulations

2010: Preparation of a comprehensive Nuclear Law including safety, security, safe guard and liability. (LAEC- OLA- Presidency of Council minister)

Technical and Scientific Framework

Personnel: ~70 persons (2009)

13 Ph.D.
41 Engineers, Regulators, Inspectors, Laboratory Assistants and Technicians
13 Support staff

Technical and Scientific Framework - II

1. TLD (Thermo Luminescent Dosimetry) for monitoring of **Personal Radiation Exposure**

   - 205 medical & industrial institutes (hospitals, private clinics, industries, research centers…)

   - > 3200 workers

Technical and Scientific Framework - III

2. SSDL (Secondary Standard Dosimetry Lab). This laboratory is assigned under the **Lebanese Metrology Committee**

Activity: Calibration of Radiation Detectors

Technical and Scientific Framework IV

α β γ and Mass Spectroscopies Laboratories for Environmental measures

Technical and Scientific Framework V

Research Laboratories

- 1. Laboratory of water analysis and hydrology (3H)
- 2. Laboratory of organic pollutant measurement
- 3. Laboratory of radioimmunoassay
- 6. Laboratory of XRF
- 7. Laboratory of Ion Beam Analysis
- 8. Laboratory of Material Sciences

LAEC Activities-I

I- **Department of Authorization, Inspection and Regulations "DAIR"**

- Issuing of national regulation relevant to the use of ionizing radiations in different practices
- Implement and issued all type of authorization forms for all practices dealing with radiation sources
- Scientific and Technical evaluation for request of using ionizing radiations (import, export, uses,…)
- Inspection & control for the implementation of Radiation Protection guidelines in practices (BSS – IAEA)
- Establishment of National Register for the radioactive sources movement

LAEC Activities-II

II- Radiation services Department

- Regular control of radiation exposure for workers in controlled area (TLD) ~3200 workers, >200 institutes
- Quality Control for equipments emitting of ionizing radiations used in medical, industrial and scientific field
- Workplace monitoring

LAEC Activities-III

III- Department of Border Radiation Control

- Control of radioactivity level in exported food products and some imported food products
- Control of radioactivity (borders - ports) of imported construction metals and exported Scrap

- Assure the safety and security of transport of radioactive sources

LAEC Activities-IV

IV- Department of Environmental Radiation Control

- Regular analysis of food products, water, soil, air, grass…
- Establishment of the Radioactivity Map Level in Lebanon (Soil – Background)
- Establishment of the Early Warning System for early detection of any radioactive contamination (accident, malpractice)

LAEC Activities - V

V- Department of Nuclear Security and Emergency

- Combating the Illicit Trafficking of Radioactive Sources (control on check points – CUSTOMS/LAEC). RPM projects
- Physical Protection of Category I-II sources (on site if used – re-exportation of disused)
- Providing Technical Support in emergency cases (Nuclear) and accident (local contamination)

International binding legal instruments Political commitments

Safety

- CNS (1996), CENNA (1997), CANARE (1997), JCSSFSRWM (signed 97)

Security

- CPPNM (1998), Amendment CPPNM (in process)

Safeguard

- NPT (1973) – Amendment to SQP protocol (2008) – AP (in processes)

Liability

- VCCLND (1997), Amendment VC & CSCND (signed 97)

Political commitment

- CC-SSRS (2004), Guidance IERS (2007)

IAEA.org
International Atomic Energy Agency

Office of Legal Affairs

Lebanon (Lebanese Republic)

IAEA Membership:	29 June 1961	Capital:	Be
Number of Accession:	75	Area (sq.Km):	10
		Population (mln)	3.7

Periods Represented on the Board: 1966-68, 1973-74, 1980-82,1993-95

Multilateral Agreements

	Title	In Force	Status
P&I	Agreement on the Privileges and Immunities of the IAEA		Non-Party
CPPNM	Convention on the Physical Protection of Nuclear Material	1998-01-15	accession: 1997-
VC	Vienna Convention on Civil Liability for Nuclear Damage	1997-07-17	Signature: 1995- ratification: 199
NOT	Convention on Early Notification of a Nuclear Accident	1997-05-18	Signature: 1986- ratification: 199
ASSIST	Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency	1997-05-18	Signature: 1986- ratification: 199
NS	Convention on Nuclear Safety	1996-10-24	Signature: 1995- ratification: 199
VC/OP	Optional Protocol Concerning the Compulsory Settlement of Disputes		Non-Party
JP	Joint Protocol Relating to the Application of the Vienna Convention and the Paris Convention		Non-Party
RADW	Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management		Signature: 1997-
PVC	Protocol to Amend the Vienna Convention on Civil Liability for Nuclear Damage		Signature: 1997-
SUPP	Convention on Supplementary Compensation for Nuclear Damage		Signature: 1997-
ARCAL	Co-operation Agreement for the Promotion of Nuclear Science and Technology in Latin America and the Caribbean (ARCAL)		Non-Party
RSA	Revised Supplementary Agreement Concerning the Provision of Technical Assistance by the IAEA (RSA)	1981-03-09	Signature: 1981-
RCA	Third Agreement to Extend the 1987 Regional Co-operative Agreement for Research, Development and Training Related to Nuclear Science and Technology (RCA)		Non-Party
ARASIA	Co-operative Agreement for Arab States in Asia for Research, Development and Training Related to Nuclear Science and Technology (ARASIA)	2002-07-29	acceptance: 200
AFRA	African Regional Co-operative Agreement for Research, Development and Training Related to Nuclear Science and Technology (AFRA) - Third Extension		Non-Party
CPPNME	Amendment to the Convention on the Physical Protection of Nuclear Material		Non-Party

Country Program Framework - Lebanon

Lebanon has signed with the TC -IAEA (24 November 2009) the future program for 2012-2017 and has three pillars:

1. **Strengthening legal and regulatory framework.**
2. **Human resource development and capacity building in:**
   - Use of Nuclear applications and related analytical techniques.
   - Radiation and nuclear safety and security.
3. **Feasibility study for nuclear research reactor**

National vision for the legislative framework will take into account the future technical development.

IRRS Mission 2009 – Objectives
Integrated Regulatory Review Service

- Assessment of:
  - The Lebanese legal and governmental infrastructure for radiation safety, the effectiveness of the Lebanese regulatory body (LAEC)
  - The actual situation regarding the radiation safety regulatory practices with respect to IAEA safety standards;

- Recommendation & Suggestion on:
  - Enhancement the Effectiveness, Competence, Transparency & Openness of the Regulatory system in line within the latest IAEA standards and the International legal binding Instruments

IRRS Recommendations

- Consider revising as soon as possible the current draft law submitted to the Parliament in 2000 and to ensure that it takes into account the latest IAEA standards and guidance, the objectives of international harmonization of regulatory approaches and the new national circumstances, in particular the international obligations of Lebanon resulting from the international legal instruments to which it is party

- Prepare a nuclear law covering safety, security, safeguards and nuclear liability.

Lebanese Strategy for Disused Radioactive Sources and for Discharges

- Any Licensee intend to use RAM must provide to LAEC a detailed program showing the discharge system and the way of control.

- Any importer for radioactive sources (Except radiopharmaceuticals used NM) to Lebanon must have a commitment to return these sources to the supplier when it is not in use.

- Routine inspection by LAEC is scheduled

Radioactive Waste Management –I

- Regulatory and Legislative Framework
  - Obligatory written agreement between user and supplier for returning the source after usage to the supplier
  - Routine inspection for facilities dealing with RAM
  - Clearance discharge classification according to IAEA-TECDOC 1000
  - Draft radioactive wastes regulations will be issued soon

Radioactive Waste Management –II

- Most radioactive waste in Lebanon are from nuclear medicine facilities and from scrap yard (orphan sources)

- Radioactive waste from Nuclear medicine are decayed in storage , then released to normal wastes, some Tc-99m generators are returned to suppliers , routine inspection by LAEC is carried out

- National temporary site for safe and secure storage of radioactive wastes (orphan sources and sources from decommissioning facilities that can not be sent back)

Radioactive Waste Management –III

- National TC project with IAEA to enhance the status of the storage site

- Two IAEA missions, for interim storage of Radium-226 (needles and tubes) used in brachytherapy and for the conditioning and transportation of radioactive cobalt sources used in research agriculture institute in Lebanon.

Thank you