International Conference on Effective Nuclear and Radiation Regulatory Systems:

Establishing Radiation Safety Regulatory Infrastructure

04-07 November 2019
Hague, Netherland
Contents

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❖ Legislative and Regulatory Framework for safety and Security
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Application of Sealed Radioactive Sources (SRS) mainly

❖ Medicine
❖ Agriculture
❖ Industry
❖ Research and Education
Commonly used Sealed Radioactive Sources

- Co-60, Cs-137, Am241-Be
- Activity Range: few KBq – TBq
- Category 1 sources are used for radiotherapy, blood irradiation and research
- Most of radioactive sources(category 3-4) are being used in Industry for well-logging, level gauges, density moisture gauges etc.
Legislative and regulatory Framework

Legal Hierarchy of Ethiopia
Legislative Framework

Proclamation No. 79/1993
Radiation Protection and safety Based on the BSS Established National Radiation Protection Authority. No provision for cooperation No criminal offences and Penalties

Proclamation No. 571/2008
Radiation Protection and Safety Not compatible with the current International Safety and security standards.

Proclamation No. 1025/2017
Encompasses Radiation and nuclear Protection, safety, Security and safeguards Compatible with the current International standards and Nuclear Law Passed by the Parliament Gazetted as of July 19 2017. Reestablishment of the Authority Accountable to Most Has provision for cooperation for safety and security Criminal offences and penalties Article 24
Objectives

The new Proclamation shall have the following objectives:

❖ Regulate in respective to the safety, security and safeguards to ensure the peaceful use of radiation and nuclear technologies to support the national socio-economic and technological development.

❖ Protect individuals, the society, and the environment as well as current and future generations from radiation hazards.

❖ Undertake and promote research and development in the subject areas of regulating radioactive materials and related activities.
Regulations and Directives

The following Legal Documents are in draft levels

❖ Regulations (which includes safety, security and safeguards)
❖ Directive for Radiotherapy and Nuclear medicine
❖ Directive for Irradiator facilities
❖ Directive for Industrial radiology
❖ Directive for Diagnostic radiology
❖ Directive for RWM
❖ Directive for Transport Safety and security of Radioactive material
Policy Documents

- National Policy and strategy for safety and Security of radioactive sources
- National Policy for management of radioactive waste
- Enforcement policy
### International Legal Instruments Status in Ethiopia

<table>
<thead>
<tr>
<th>INSTRUMENT</th>
<th>STATUS</th>
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<tbody>
<tr>
<td>Convention on Nuclear Safety (CNS):</td>
<td>Is a Party</td>
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<tr>
<td>Treaty on the Non-Proliferation of Nuclear Weapons:</td>
<td>Is a Party</td>
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<tr>
<td>Comprehensive Safeguards Agreement with the IAEA</td>
<td>Is a Party</td>
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<tr>
<td>Comprehensive Nuclear-Test-Ban Treaty (CTBT)</td>
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</tr>
<tr>
<td>UNSCR 1540</td>
<td>Supported and voted for UNSCR 1540.</td>
</tr>
<tr>
<td>Code of Conduct</td>
<td>Political commitment has been expressed</td>
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<tr>
<td>CPPNM</td>
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<tr>
<td>CPPNM Amendment</td>
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<tr>
<td>International Convention for the Suppression of Acts of Nuclear Terrorism (ICSANT)</td>
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<tr>
<td>Convention on Early Notification of a Nuclear Accident</td>
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<tr>
<td>Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency</td>
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Regulatory Framework

Proclamation

Establishing

Regulatory Body (ERPA)

Empowered

Authorization (Safety, Security, safeguards)

Inspection (Safety, Security, safeguards)

Enforcement (Safety, Security, safeguards)

Provided with Resources, Funds, Staff

Regulations /directives (Safety, Security, safeguards)
Functions and Responsibilities of the Authority

The functions and responsibilities of the Authority includes:

❖ Issue, renew, suspend and revoke licenses to perform radiation and nuclear activities

❖ Formulate radiation protection, safety and security policies and draft laws, regulations and submit to the Government for approval

❖ Issue directives on radiation protection, safety and security and follow up their implementation
Functions and Responsibilities

❖ Establish a system for coordinating public and private activities with a view to ensure radiation and nuclear safety and security of radiation sources

❖ Carry out inspection and take appropriate measures to ensure compliance with radiation and nuclear protection laws and directives

❖ Formulate emergency plans and set up emergency squads for accidents involving radiation and take measures or advise on measures to be taken as needed
Regulatory framework - Organizational Structure of ERPA

Ministry of Innovation & Technology

Director General

Support Services

I/R/P Notification & Authorization Directorate

I/R/P Regulatory Control Directorate

Research and System Devt Directorate

N/I/R/P Regulatory Control Directorate
National, Regional and International Cooperation

National Cooperation

ERPA is closely working mainly with the following organizations:

- Ministry of Science and Technology
- Airport Security
- Ministry of Defense
- Emergency Services
- Ministry of foreign affairs
- Customs
- Intelligence Services/
- Ministry of trade
- Ministry of Transport
- Police Commission
Responsibilities of competent authorities for nuclear security

- **Customs/Ministry of Trade**: In controlling the import and export of radiation sources.
- **Police/Defence**: In ensuring security, protecting illicit trafficking, and emergency response.
- **Ministry of Environment**: In establishing requirements relating to discharges and other areas of environmental protection.
- **Ministry of Transport/Maritime Authority**: In establishing requirements for the safe transport of radioactive material.
- **Intelligence Services/Airport Security/Information Security**: Involving in security activities with regards to radioactive materials.
Roles and responsibilities of competent authorities for nuclear security

Ministry of foreign affairs
  International Legal Instruments

Emergency Services
  In preventing accidents. Involving in emergency intervention

Regulatory Body
  Ensure the implementation of the provisions of the Proclamation
  Involved in the development of regulation and directives
  Coordination
Regional and International Cooperation

- ERPA participates in Forum of the Nuclear Regulatory Bodies in Africa (FNRBA)
- ERPA has signed cooperative agreements with the US DoE and USNRC. (training, Instrumentation, Physical Protection and Security of RS).
- ERPA has signed MoU with Sudan Regulatory body and discussions are undergoing with the other neighboring countries with regards to border control, Experience Sharing.

Diagram:
- Sudan (Signed)
- Kenya
- Djibouti
- Somalia
Local training / meeting with stakeholder

- Awareness on radioactive & nuclear security to different operators, stakeholders and others
- ERPA conducts regular meeting with the stakeholders.
Training on RS Safety and Security for
Training on RS Safety and Security Special Emphasis for Gamma irradiator
Challenges

- Lack of skilled manpower and technical capability.
- Lengthy process for legislation approval.
- Lack of strong synergy among stakeholders to control orphan sources.
- Lack of awareness by the public about radioactive/radiation sources.
Conclusion

- Ethiopia has established comprehensive legal framework for ensuring safety & security of radioactive sources.
- The prime responsibility of ensuring the overall radiation safety, security and safe handling of sources rests with the licensee.
- ERPA found that awareness programs are highly beneficial to ensure safety and security culture.
- The National, Regional and International co-operation and coordination is important for RS safety and security.
THANK YOU FOR YOUR ATTENTION!!