Management of Disused Sealed Radioactive Sources in Cuba

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Radiotherapy
(Teletherapy and brachytherapy)

Irradiators
Origin of disused sealed sources

Industrial Radiography

Nuclear Gauges and Geologic Surveys
- Smoke detectors,
- Lightening rods

Research and Education
Institutions participating in the management of RW and DSRS

- Ministry of Science, Technology and Environment (CITMA)
- CNSN Regulatory Authority
- Generators
  - Radioactive waste and disused sealed sources
- CPHR - operator
  - Treatment, Conditioning and interim storage

Regulatory Control
Treatment-conditioning Plant

Technologic area

Laboratory

Segregation

Reception

Decay storage

Personnel entrance/exit

Personnel check point

Office

Entrance RW and DSRS

Package exit

Entrance RW and DSRS

Package exit
Memorandum of Understanding with the principal regulatory bodies with responsibilities regarding the safe and secure use of radioactive sources in the country have been established; they include:

– the Ministry of the Interior- for security of the sources, and fire protection;
– the Civil Defense System-for preparedness and response to any radiological emergencies; and
– the General Customs of the Republic for the control of the import and export of radiation sources.
Several technical services are available in the country. They include: internal and external individual dosimetry; calibration and verification of radiation protection instruments; training courses for workers; network for environmental radiation monitoring; consulting in radiation protection.

Services are acknowledged by the regulatory body.
Decree Law No. 207 “On the use of Nuclear Energy”

Conceived as the highest level document in our Hierarchical Nuclear Regulatory System, this Decree-Law establishes the general requirements that regulates the use of nuclear energy within the country.
Legal Framework

- Rule for Authorisation of Practices using Ionizing Radiation
- Rule for the Safe Transport of Radioactive Materials
- Rule for Radiation Safety
- Rule for the Safe Management of Radioactive Wastes

Laws, rules and guides in place are based on the IAEA Safety Standards Series.
Rule for Safe Management of Radioactive Wastes

• Article 58: Every Registrant and Licensee is obliged to declare possession of any disused sealed radioactive sources (DSRS).
Responsibilities of the USERS for the safety and security of DSRS

- Resolution 25/98 “Rule on Authorizations” Article 37 requires that; within an acceptable time frame, applicants responsible for radioactive sources shall officially demonstrate commitment and assurances for waste management, such as relevant agreements, insurance contracts or other financial warranties.

- Any Registrant and Licensee that may import a sealed source shall make every reasonable effort to manage the return of the source to the manufacturer /supplier after completion of its useful life.
• Disused sources are returned to manufacturers, suppliers, through the corresponding export authorization. In addition, for category 1 and 2 radioactive sources; it is required an approval by the regulatory authority in the country of destination.

• When their return is not possible, they shall be transferred to the national interim storage facility. In case a source is declared in disuse, but it is still usable, it may be transferred to another Registrant or Licensee.
A system for the control of radioactive material in imported and exported scrap metal has been established. Steps are being taken for its implementation in all the stages of the recycling process.
Storage of Conditioned DSRS

Until a repository is made available, a national interim storage facility for conditioned radioactive wastes and disused sealed sources has been developed.

All the DSRS are packaged in passive, safe, monitorable and retrievable interim storage.
Interim storage facility
Immobilization of sources - Retrievability
Final disposal of radioactive wastes and DSRS still to be defined

Assess possible variants.
Select the most feasible

Siting

Conceptual design

Safety Assessment

Construction, Commissioning

Operation - Disposal