



Management of Disused Sealed Radioactive Sources in Cuba

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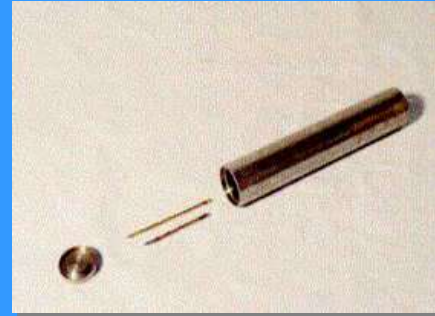
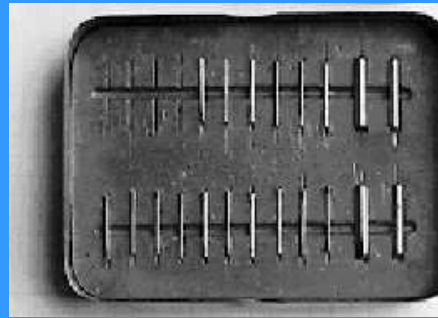


International Workshop on Sustainable Management of Disused Sealed Radioactive Sources
Lisbon 11-15 October

Origin of disused sealed sources

Radiotherapy

(Teletherapy and brachytherapy)



Irradiators

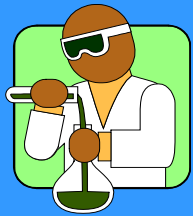


Origin of disused sealed sources

Industrial Radiography



Nuclear Gauges and Geologic Surveys

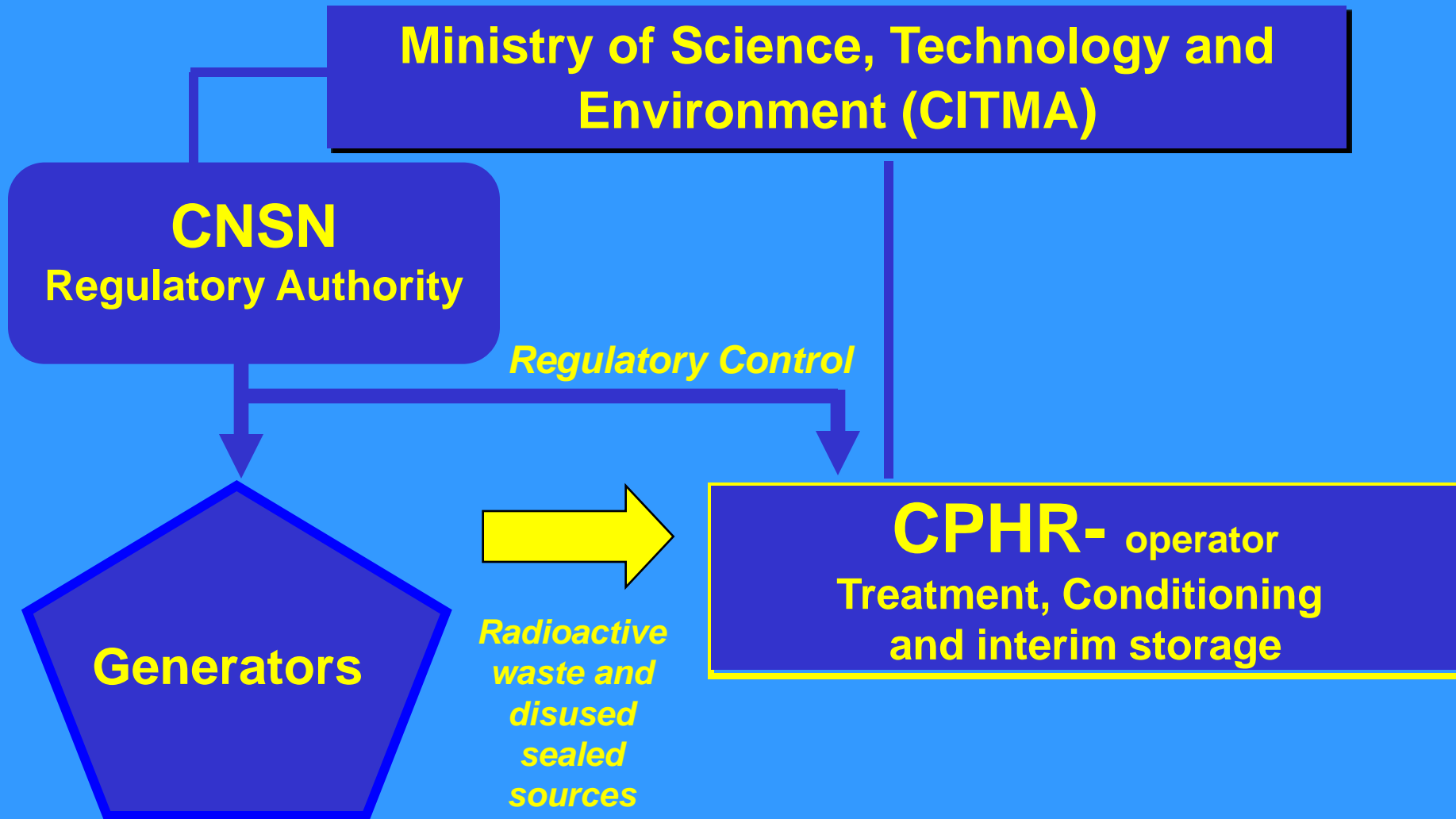


Research and Education

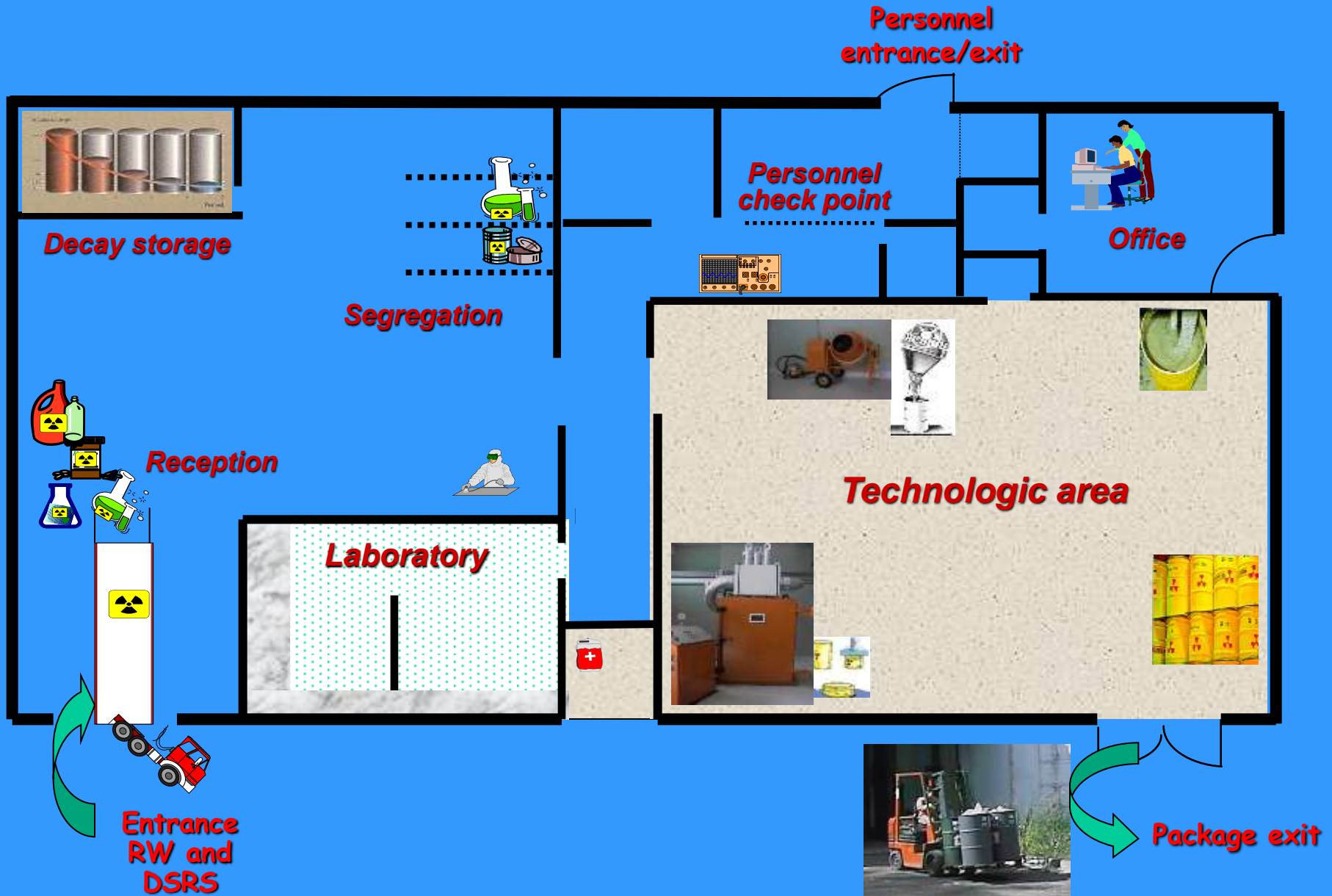
- Smoke detectors,
- Lightning rods



Institutions participating in the management of RW and DSRS



Treatment-conditioning Plant



Interaction with other Regulatory Bodies

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**.

Facilities and Services

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.



Legal Framework

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.

Responsibilities of the USERS for the safety and security of DSRS

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.

Responsibilities of the USERS for the safety and security of DSRS

- **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.**

Radiological Surveillance- Scrap metal

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.

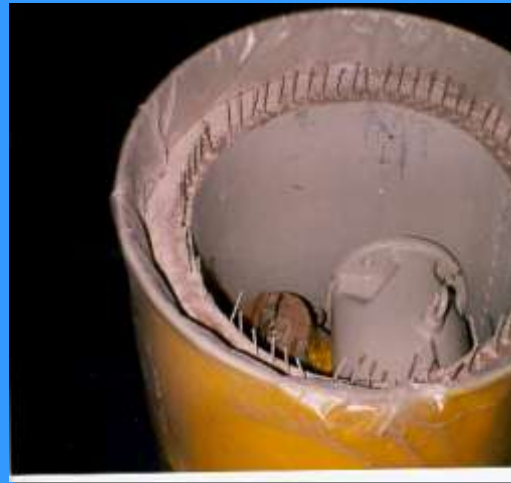
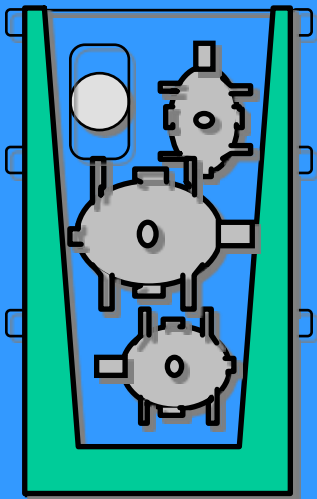
All the DSRS are packaged in passive, safe, monitorable and retrievable interim storage.



Interim storage facility



Immobilization of sources- Retrievability



Challenge

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

