

# Handling of radioactive material and waste

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# Material vs Waste

- “Material” is an item that can be reused.
- “Waste” is an item that has to be eliminated.
- It is the owner of the item to decide if it is still “material” or if it must be disposed of as “waste”.

# Outline

- 1. Handling of radioactive material**
2. Disposal of radioactive waste

# During operation

- Retention basins in case of liquids (e.g., pumps)
- Risk of contamination
- Minimization of the waste (do not expose to radiation unnecessary equipment)
- Logging of irradiation
- Keep track of material composition

# After operation

- RP check for contamination, induced radioactivity -> radioactive or non-radioactive
- If non radioactive:
  - Can be handled in any laboratory, traceability required
- If radioactive:
  - Must be handled in a radiation laboratory, special shipping, traceability required
- All materials go directly to B. 954

# Shipping of rad. material outside CERN

- Fill in the EDH request form
- The addressee institute must be authorized to receive and handle radioactive materials
- Bring the material to the Radioactive Material Transport Service (24/E-024) at least 3 days beforehand
- Until a reply is received by the RP Service the material cannot leave CERN
- <http://service-rp-shipping.web.cern.ch/service-rp-shipping/#Export>

# Outline

1. Handling of radioactive material
2. **Disposal of radioactive waste**

# Radioactive waste

- The owner decides when the material shall be considered as waste
- For legal reasons (“Waste zoning”), every item which has been irradiated in the CNGS service gallery will be disposed of as radioactive waste *even if measured as non-radioactive.*
- Cost of elimination
  - CH: about 100 CHF/l
  - F: depends on waste characteristics

# Responsibilities

- Experiments:
  - Allocation of budget for the elimination
  - Traceability (including radiological history, material composition)
  - Follow procedures for disposal of waste (see next slides)
- DG/SCR:
  - Elimination of waste after acceptance

# Procedures for disposal of radioactive waste

- Small items directly into appropriate waste bag
- Large items: **fill EDH form** with radiological history and arrange disposal to waste centre (Bat. 573, Tel: +41 22 767 3875),

# Procedures: EDH form

- The EDH form for the elimination of radioactive waste shall include:
  - Date of start and end of irradiation
  - Position in the service gallery
  - If available: material composition (especially heavy elements, e.g. Ag)

**-> importance of traceability**

# Procedures: EDH form

- <https://edh.cern.ch/Document/RadioactiveWaste/>

### Personal Details

Owner \*:  ? E-mail: Matteo.Magistris@cern.ch  
Desired date \*:  ?

### Item(s) to dispose

Note. You must fill one form per waste type

1 Designation *: <input type="text" value="Electronic Board Type WG34"/> ?	Identification *: <input type="text" value="123456"/> ?
Origin *: <input type="text" value="CNGS service gallery"/> ?	Dimensions [m - m3] *: <input type="text" value="30 cm x 50 cm x 3 cm"/> ?
Composition *: <input type="text" value="40% plastics, 60% Cu, traces of Pb, Ag"/> ?	Weight [kg] *: <input type="text" value="0.2"/> ?
History *: <input type="text" value="Irradiation since 5/5/09 until 7/9/09 in position 23."/> ?	

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### Contact Details

Contact RP \*:  ?