

# Experiences from the use of radiation detection equipment at the border crossing points

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# BORDER CUSTOMS CONTROL



# CASES OF RESPONSE CLASSIFICATION

CASES OF RESPONSE (TOTAL – more than 45 000 a year) :

- ROUTINE ALARM CASES (95%):

1. Goods with natural radionuclides correspond with national environmental health norms
2. People after medicine radiotherapy (or diagnostic)
3. RM legal shipments

- “PROBLEM” ALARM CASES (5%)

## “PROBLEM” CASES

- Goods with natural radionuclides do not correspond with national environmental health norms
- Goods (watches, compasses etc.) with Ra-226
- Scrap with local sources
- Radioactively contaminated goods or transport items
- **RM illegal movement:**
  - RM smuggling
  - RM movement with violations of national export control law or other norms
  - Non-declared RM in devices

# RADIOACTIVE MATERIALS LEGAL SHIPMENTS CUSTOMS CONTROL

## International Harmonized System Codes for goods

**284410** Natural Uranium, its Compounds; Alloys, Dispersions, Ceramic Products and Mixtures

**284420** Enriched Uranium; Plutonium; Alloys, Dispersions, Ceramic Products, Mixtures

**284430** Depleted Uranium, Thorium, Their Compounds; Alloys, Dispersions, Ceramic Products and Mixtures

**284440** Radioactive Elements and Isotopes and Compounds; Alloys, Dispersion; Ceramic Products and Mixtures; Radioactive Residues

**284450** Spent Fuel Elements (Cartridges) of Nuclear Reactors

**840130** Fuel Elements (Cartridges), Non-irradiated, for Nuclear Reactors

# RADIOACTIVE MATERIALS LEGAL SHIPMENTS CUSTOMS CONTROL

## Threat of RM smuggling during legal shipments of such materials



**Declared in documents**  
(license, customs declaration, invoice)

**Cs-137**



**In shipment**

Cs-137 ?

Ba-133 ?

U-235 ?

# Types of RM smuggling threat

## I. Substitution of quality



*Declared*

Cf-252

*Actual*

Pu-239

# Types of RM smuggling threat

## II. Substitution of quantity



*Declared*

**LEU**

*Actual*

**HEU**

# Types of RM smuggling threat

## III. Non-declared additional material



*Declared*

Radioactive material  
(Cf-252)

*Actual*

**Mix** Cf-252 + **HEU**

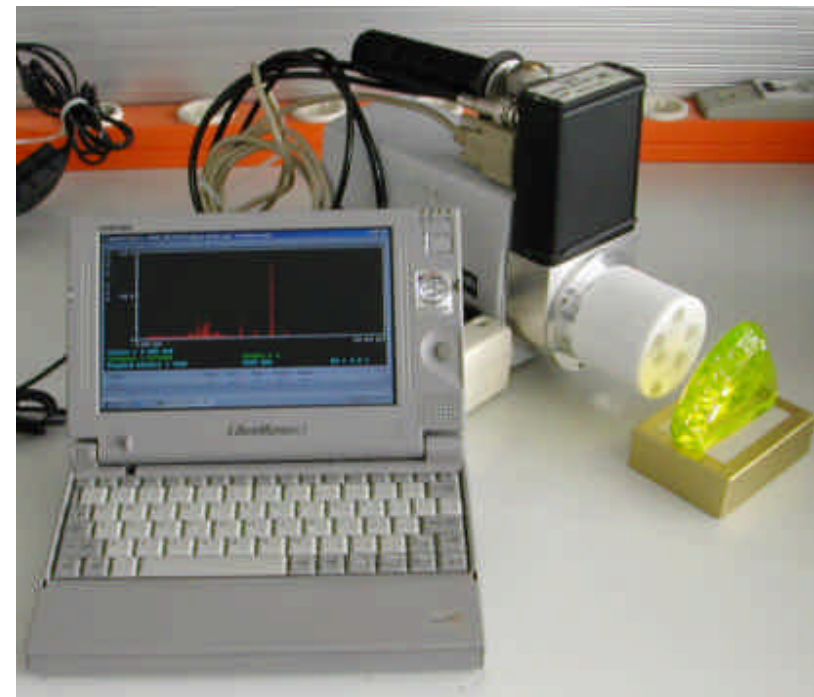
# Prevention of RM smuggling

The IAEA document concerning verification of declared content in the transport of radioactive material is in development.

This document describes a supplementary infrastructure for the development of the technical means of radiation control at border crossings to verify the declared parameters of RM without opening the packages in which such material is contained.

# Prevention of RM smuggling

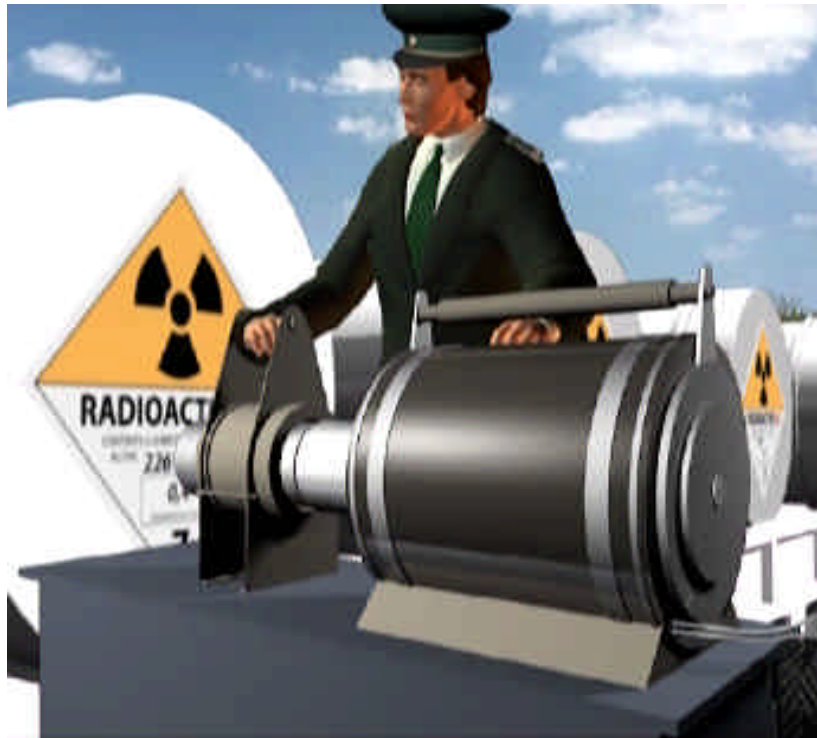
## Equipment for RM customs inspections



Gamma-spectrometric equipment

# RADIOACTIVE MATERIALS LEGAL SHIPMENTS CUSTOMS CONTROL

## RM identification without opening the container



**THANK YOU FOR ATTENTION**