

# Is Long-Term Surface Storage Safe?

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## The Radioactive Wastes Exist

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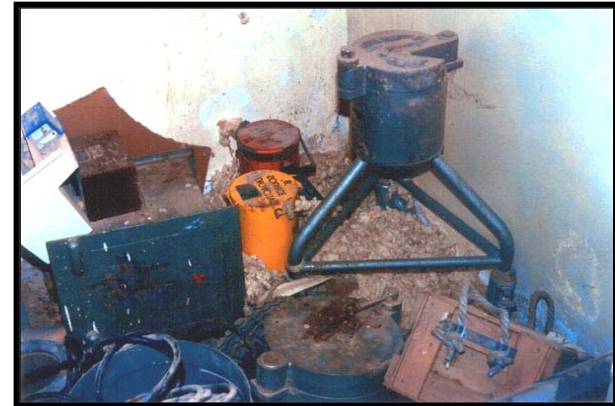


# Something Must Be Done

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- **The radioactive wastes exists**
  - **Many times, the radioactive wastes are in storage**
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## Some Countries Require the Owner to Hold Radioactive Waste at User Premises



**Unwanted,  
highly radioactive  
material  
in public sector**

## Some Countries Hold Radioactive Waste in Centralized Government Storage

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**Armenia**

## Some Countries Hold Radioactive Waste in Centralized Government Storage

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**Egypt**

## Some Countries Hold Radioactive Waste in Centralized Government Storage

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**Georgia**

# Sealed Radioactive Source Strength Compared to IAEA Exemption Criteria

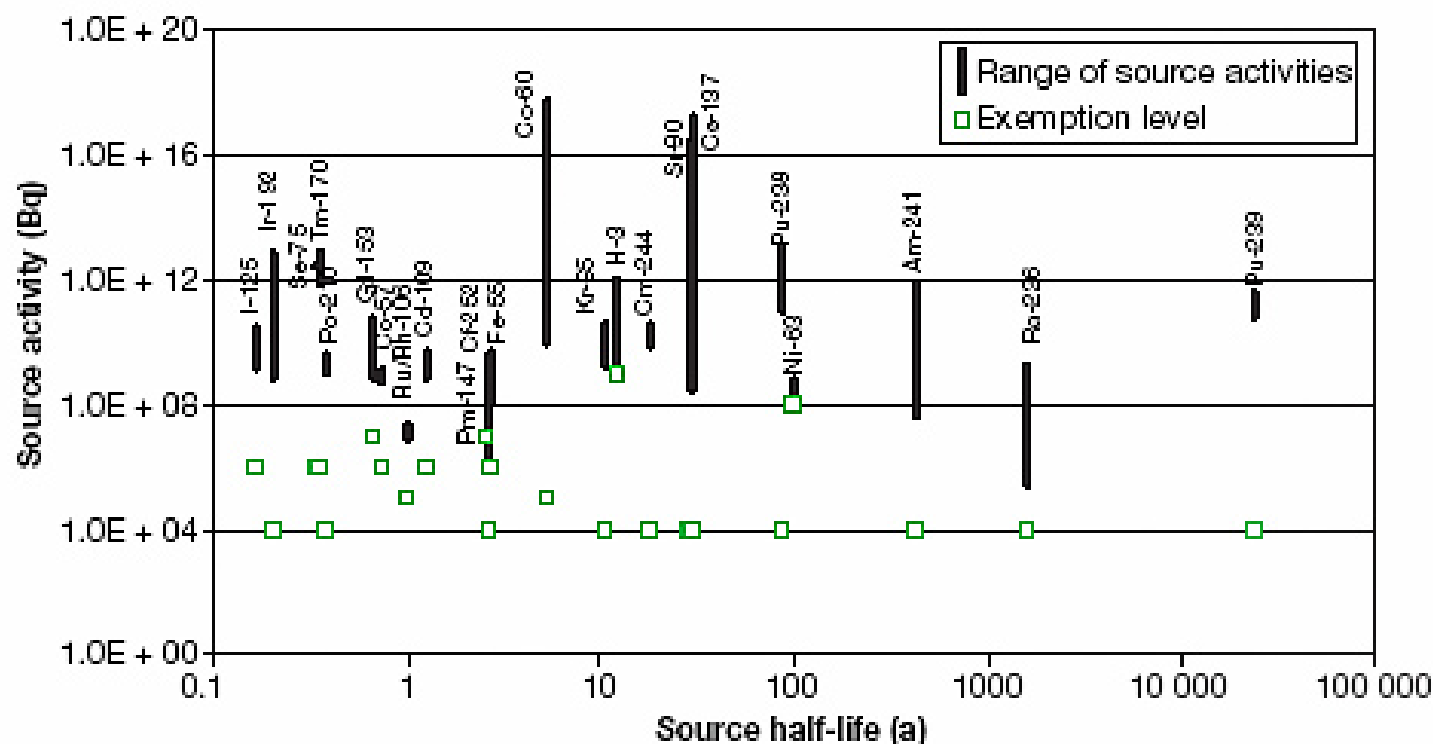


FIG. 1. Ranges of source activities for various radionuclides.

## After 100 years of Storage

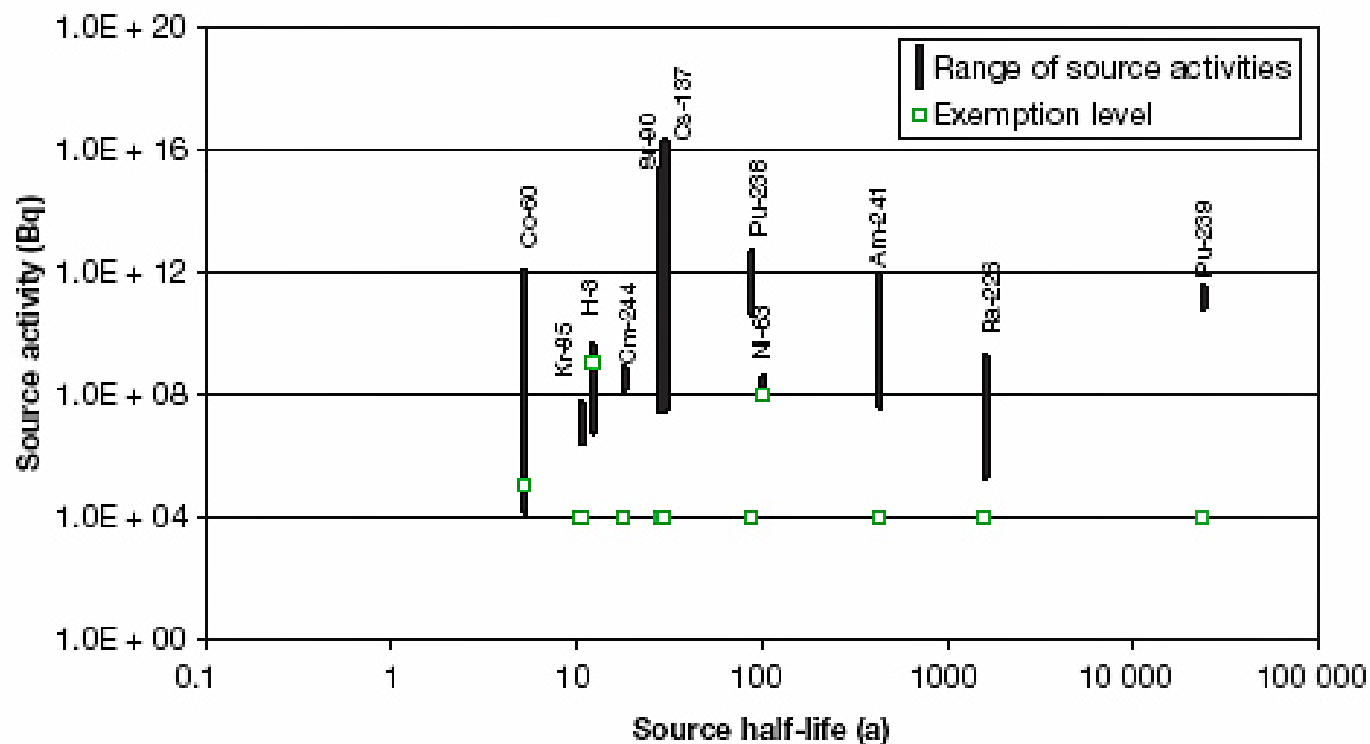


FIG. 2. The effect of 100 years of decay on the ranges of source activities.

# Safe and Secure 100 years? 1,600 years?



# Safe and Secure 100 years? 1,600 years?

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## Systems View

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- **Storage is an important, but interim solution**
  - **Storage is not the long-term answer**
    - Many wastes remain hazardous 100's to 1,000's of years
    - Centralized storage target for theft
    - Even governments may lose control
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# Even Governments Can Loose Control

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**Georgia, unattended  
3,000 Ci Cs-137  
powder**

## **Disposal is the Only Long-Term Answer**

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- **Because the wastes exist, and storage for 100's to 1,000's of years not sustainable**
  - **The people that created and benefited from rad materials should safely dispose of the wastes**
  - **The burden of radioactive waste disposal should not be passed to generations that did not benefit from the radioactive materials**
  - **Important part of countries infrastructure for safe management of radioactive materials**
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## Is Long-Term Surface Storage Safe?

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- **Surface storage is an important, but interim solution**
  - **“Long-term storage of unwanted radioactive materials is not considered sustainable, and in many cases long-term storage may represent a high-risk situation.” (IAEA Tech Report 436, 2005)**
  - **Proper disposal is the only long-term solution for long-lived radioactive wastes**
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