

**International Conference on Control and Management  
of Inadvertent Radioactive Material in Scrap Metal**

**Co-60 contaminated stainless steel in Germany  
- experiences and first steps**

Dr. Renate Sefzig / Dr. Bejoy Saha / Gisela Stoppa  
Germany

Supervision in the Field of Radiological Protection  
Federal Ministry for the Environment, Nature Conservation and Nuclear Safety

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**First signs of the  
upcoming issue  
in August 2008...**

Hamburg Harbor  
- Transit Area -  
Container found with Co-60  
contaminated steel. Final  
destination was Russia.  
Material returned to sender.  
Origin of material: India



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**...next appearance in  
October 2008 ...**

Co-60 contaminated  
elevator buttons supplied  
by a French company  
were found in France, Italy,  
Germany. Buttons were  
replaced.

Origin of material: India



Photo: www.upcenter.de

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**...frequent  
occurrence since  
December 2008.**

The detection of Co-60  
contaminated stainless  
steel cuttings in a German  
scrap yard was the starting  
point for realizing the huge  
dimension of the issue.

Origin of material: India



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**Self control measures** regarding radioactive material especially high radioactive sources are carried out by the **German metal scrap industry**. E.g. detection systems are established at the entrance of scrap yards and melting plants.



Those systems are not established in goods trading industry.

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**Melting Plant**



Photo: www.iaea.org

**Orphan Source  
Co-60**



Photo: www.manager-magazin.de (Reuters)

**Product**

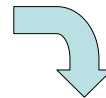


Photo: www.purso.fi

**The Problem**

**Export**



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**Stainless Round Steel**



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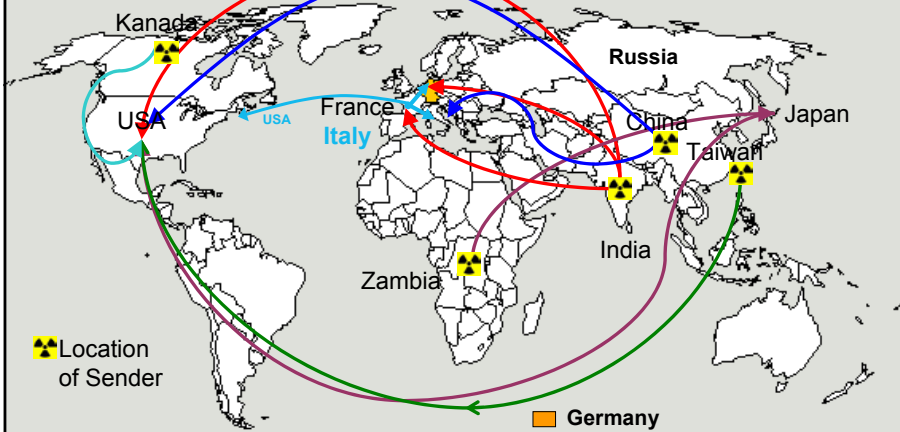
**Stainless Steel Flange**



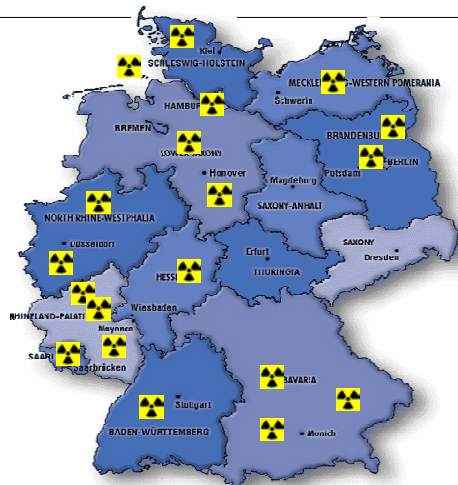
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Year 2007 / 2008

Examples: ITDB & National



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**Co-60  
Contaminated  
Stainless  
Steel  
found  
in  
Germany**

Status as of 9<sup>th</sup> Feb. 2009

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**Facts & Numbers**

- According to German Radiation Protection Ordinance
  - Co-60 clearance level for unconditional clearance:  
**0,1 Bq/g**
  - Co-60 exemption levels: **100 kBq & 10 Bq/g**
- **80 - 90%** of material are below exemption level (10 Bq/g) but above clearance level (0,1Bq/g)
- Level of contamination found by January up to **600 Bq/g**
- More than **150 tons** of material secured
- Raw- and end products concerned

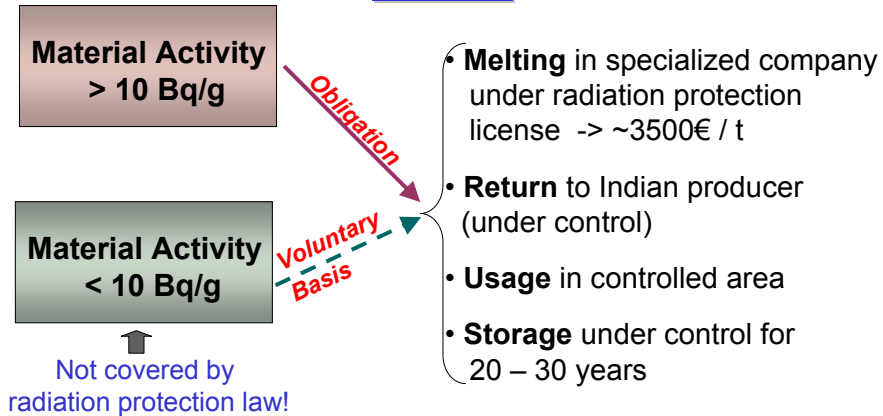
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**Economic Implications**

- Metalworking companies report up to **50% decline in sales** due to production outage as result of lack of material
- Import companies expect **high cost for disposal** and **cost for storage** of material until final decision is made
- Damage of companies reputation
- Loss of confidence

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Options



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Actions taken

- **Indian authorities** asked for support for controlled return of material and avoid further shipments
- **Products secured** by competent authorities
- Association of metal trade informed and concerned companies invited
- **Public** informed
- INRA, ENSREG informed
- EU-Commission DG-TREN involved
- Discussion of issue on Tarragona Conference

## Possible Next Steps (1)

### Authorities

- Strengthen the execution of the **HASS Directive** (2003/122/Euratom)
- **Improve Control** over High Radioactive Sealed Sources (HASS)
- Urge IAEA to support member states to reflect the provisions of the **Code of Conduct** in their legislation
- **Harmonization** in Member States with respect of handling products with activities 0,1 - 10 Bq/g
- Need of control at EU - Borders ???

## Possible Next Steps (2)

### Industry

- **Amendment of contracts** to agree upon „Non contaminated material“ ??
- Enhancement of „**Spanish Protocol**“ (1999) and „Recommendations for radioactive Scrap Material“ (UNECE 2006) ??