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

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Supervision in the Field of Radiological Protection
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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
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
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
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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The Problem

Orphan Source Co-60

Export

Product

Melting Plant

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

Photo: www.purso.fi

Photo: www.iaea.org

23rd - 27th February 2009
Stainless Steel Flange
International Conference on Control and Management of Inadvertent Radioactive Material in Scrap Metal

Location of Sender

Examples: ITDB & National

Year 2007 / 2008

Location of Sender

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BMU-RSII3
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Co-60 Contaminated Stainless Steel found in Germany

Status as of 9th 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
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

Material Activity > 10 Bq/g
- Melting in specialized company under radiation protection license -> ~3500€ / t
- Return to Indian producer (under control)
- Usage in controlled area
- Storage under control for 20 – 30 years

Material Activity < 10 Bq/g
- Not covered by radiation protection law!

Voluntary Basis

Obligation
**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 ???

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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) ??
Thank you very much for your attention!