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

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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

…next appearence 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

…frequent occurence 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

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.

Melting Plant

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

Product

Photo: www.iaea.org

Orphan Source

Co-60

The Problem

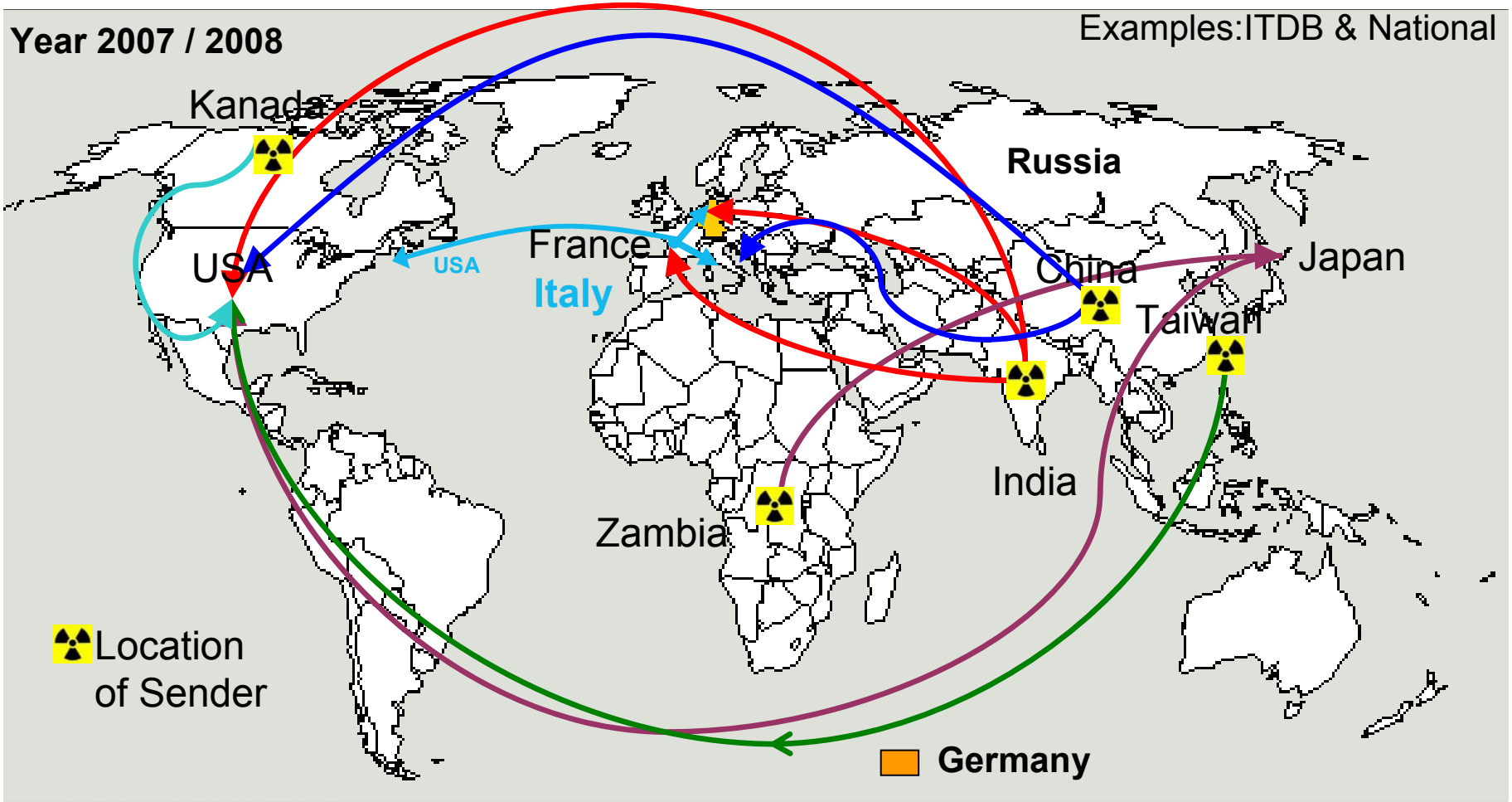
Export

Photo: www.purso.fi

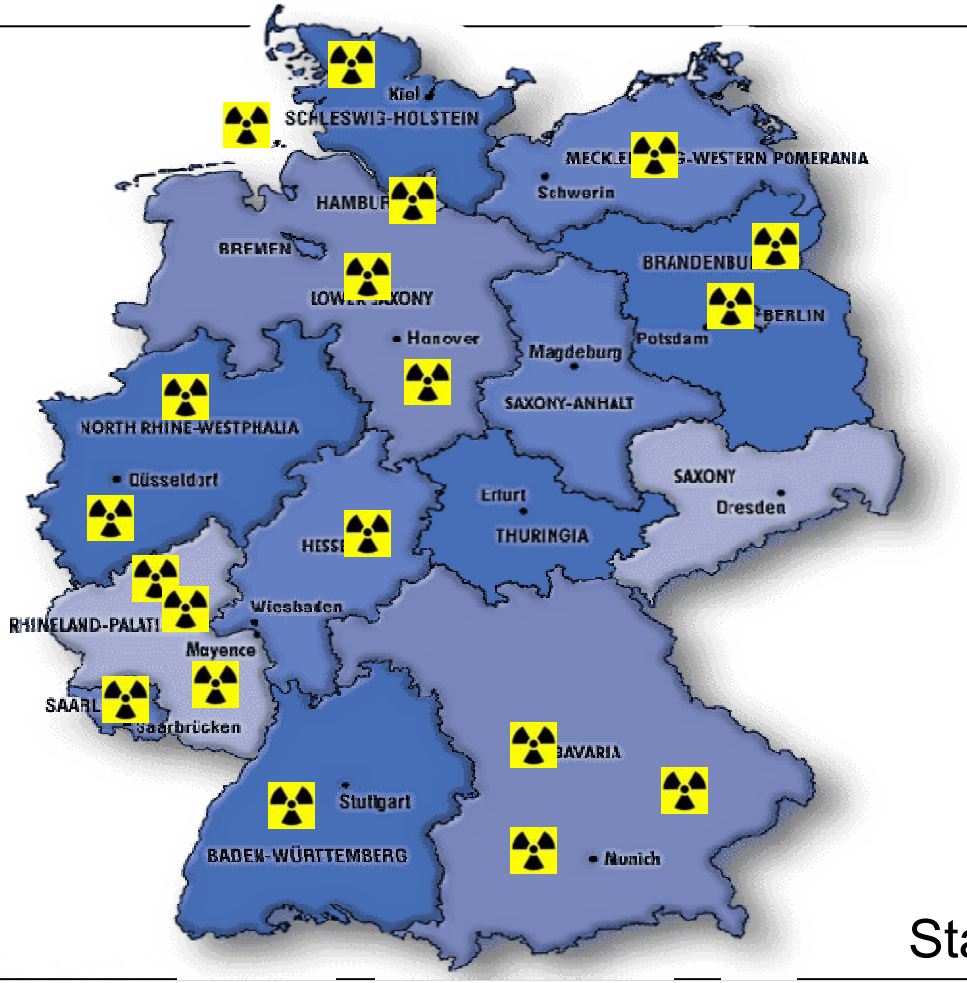
Stainless Round Steel

Stainless Steel Flange

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



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



Co-60 Contaminated Stainless Steel found in Germany

Status as of 9th Feb. 2009

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

Options

Material Activity > 10 Bq/g

Obligation

Material Activity < 10 Bq/g

Voluntary Basis

Not covered by radiation protection law!

- **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

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) ??

Thank you very much for your attention !