
The view of the steelmakers

Control and Management of Inadvertent Radioactive Material in Scrap Metal

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Eurofer

- European confederation of iron and steel industries: founded 1976
- Represents 100% of steel producers in the EU
- Objectives include: co-operation in matters that contribute to the development of the European steel industry

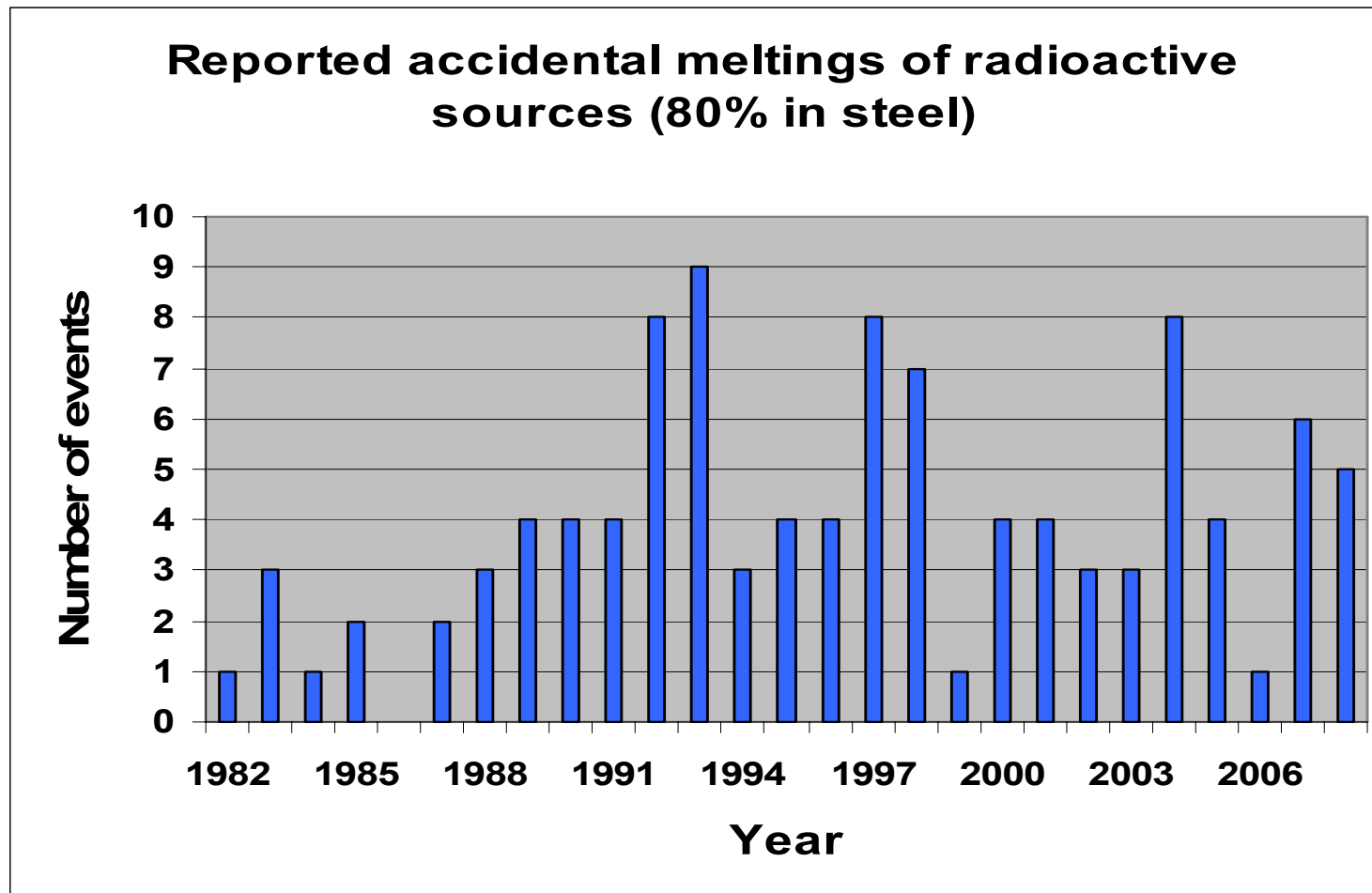
Steel in the EU 2007

- Steel production 209 Mtonne
- Scrap consumption 118 Mtonne
- Scrap imports 5.8 Mtonne, exports 10.8 Mtonne
- Scrap traded internally 30 M tonne



Reported melting incidents

(based on J. Yusko listing)



Post-steelplant detections

Radioactive push buttons:
France; October 2008
Otis, recall 500 lift buttons

Radioactive handles:
Australia; October 2004
Customs seize stainless
steel drawer handles

Radioactive watches:
France; October 2000
Radioactivity in the bracelet

Radioactive wheel trim:
UK; May 2000



Melting incidents are under-reported

- Detection:
- Monitoring is not always comprehensive
 - Steelplant products: Steel; off-gas dust; slag
- Reporting:
- Publicity is not helpful

**'RADIOACTIVE CESIUM SPILL
COOKS EUROPE'**

Cost

- Melting of radioactive source
 - Exposure of people to radioactivity
 - Cost >1M €
- Detector system to check scrap ~50000 €
 - plus yearly costs
 - plus nuisance alarms
- Correct disposal of radioactive source ~ 10000 €

Control of radioactive material

- The origin of the problem is poor control of radioactive material
- European HASS directive acknowledges the problem
- Imported scrap not affected by HASS
- Control varies from country to country

Detection systems



Monitoring for radioactivity

- Steelplants monitor for radioactivity
- Some scrap processors monitor for radioactivity
- Monitoring is a legal requirement in the Netherlands
- There are technical limits to detection

Is it radioactive?

- European steel scrap specification
 - All grades shall exclude:
 - ... radioactivity in excess of the ambient level ...
- Scrap causing alarms has to be searched
- Scrap meeting clearance levels can cause alarms



If radioactivity is detected

- Isolation of radioactivity from scrap is not usually difficult
- In the UK it is the responsibility of the finder
- In the Netherlands, and some other countries, it is the responsibility of the national authorities

Conclusions

- Control of radioactive sources is still a problem
- Steel production is the industry most at risk
 - it is the main finder of orphan radioactive sources
 - it pays for detection
 - it pays for melting incidents
- The polluter pays?