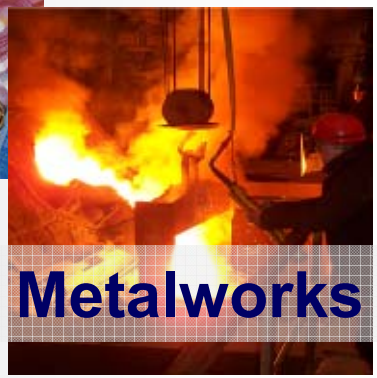
BIR



THE VIEW OF THE INDUSTRY

BIR is an international trade federation representing the world's recycling industry, covering in particular ferrous and non-ferrous metals, paper and textiles. Plastics, rubber and tyres are also studied and traded by some BIR members.

Ross Bartley,
Environmental &
Technical
Director

About 800 companies and national federations from over 70 countries are affiliated to BIR. Together they offer an international forum for industrial exchange and business contacts. They provide their expertise to other industrial sectors and political groups in order to promote recycling.

Key Recycling Figures

Commodity	Primary Production	Scrap consumption
Steel	1244 million tonnes	500+ million tonnes
Aluminium	37 million tonnes	18+ million tonnes
Paper	382 million tonnes	180+ million tonnes
Textiles	67 million tonnes (40 + 25 + 1.5)	4+ million tonnes est.arising as second-hand clothing and fibre

On Clearance & Exemption

Compare volumes of scrap likely to arise from Nuclear facilities - with volumes of clean scrap being recycled…….

<1% is insignificant, compared to the potential loss of public confidence in any specific metal and subsequent loss of market share

exact wording of the UN-ECE compromise

Prevention

Radioactive materials that are exempt from the requirements of the IAEA Basic Safety Standards or materials that are released from regulatory control do not have any significant radiological hazards associated with them. However, there is a perception that all radioactivity or all radiation is hazardous regardless of the level.

Therefore, as part of the contractual provisions and in order to satisfy the general customer demand, the metal recovery and recycling industry requires from the facility selling or disposing any metal with enhanced naturally occurring radioactivity or cleared from nuclear use, to be informed of this fact and the regulatory framework under which they have been released. Such information should be conveyed with the released materials to the successive suppliers and buyers of the metal scrap - up to and including the melting unit - to allow prior informed approval by the purchaser of the material.

*****

Best to separate exemption and clearance issues from orphan source issue

Scrap Recycling is a global business

- Bought from international sources
- Sold to international consumers

Scrap metal

- travels around the world,
- crosses border lines
- passes through various juridical systems
- passes through various local rules and regulations including those concerning:
  - radiation detection
  - the treatment of radioactive material

MANAGEMENT OF RADIATION PROTECTION ASPECTS IN THE RECYCLING OF METAL SCRAP

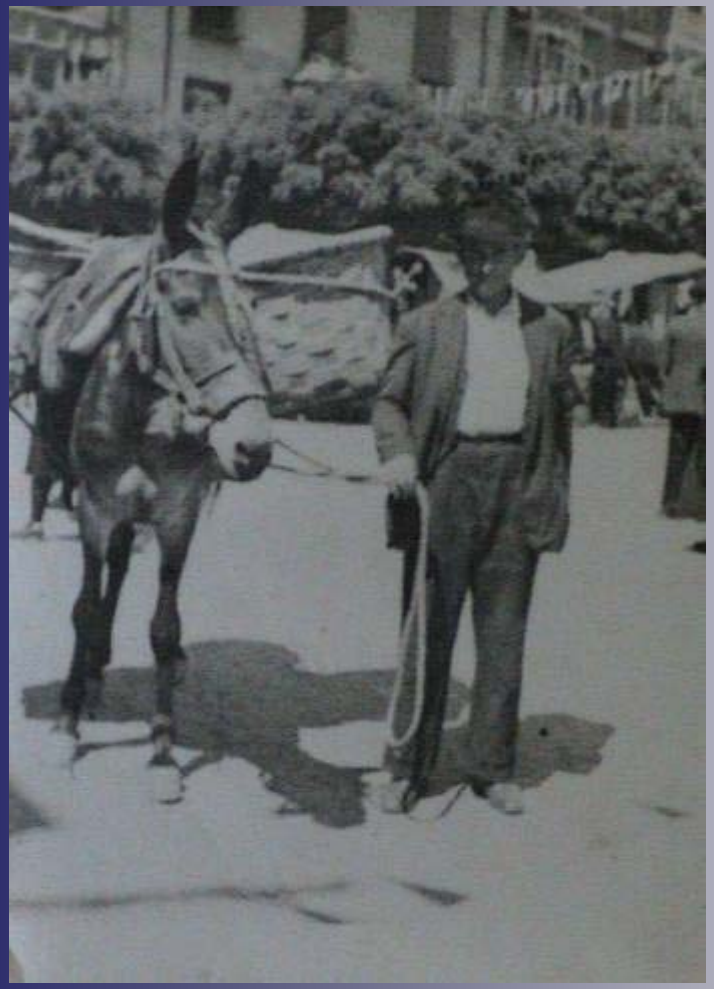
Contents: Recommendations to avoid introduction of radiation contaminated material into the recycling stream

Prepared by: UNECE, EC, IAEA (2002)

The inverted pyramid structure of the metals recovery and recycling sector

In total some 45,000 enterprises in the EU-27 World-wide well over 120,000

A small sized scrap operation



remember the Proportionality Principle, don’t put excess burdens on recyclers

A medium sized scrap processor

remember the Proportionality Principle, don’t put excess burdens on recyclers

A large sized scrap processor

remember the Proportionality Principle, don’t put excess burdens on recyclers

RESOLUCIÓN DEL CONSEJO

sobre la creación en los Estados miembros de sistemas nacionales de vigilancia y control de la presencia de materiales radiactivos en el reciclaje de materiales metálicos

(2002/C 119/05)

EL CONSEJO DE LA UNIÓN EUROPEA,

Considerando lo siguiente:

(1) El uso de tecnologías radiactivas en los Estados miembros está sujeto a un sistema específico de regulación que incluye estrictas medidas de control que cubren el control de los movimientos transfronterizos, y que a pesar de tales controles se ha detectado en los materiales metálicos destinados al reciclaje la presencia de fuentes incontroladas de radiación o materiales contaminados con radionucleidos de origen natural o artificial.

(2) La presencia entre los metales de materiales radiactivos puede tener graves consecuencias para la economía de las empresas, el medio ambiente y, en algunos casos, la salud de las personas, como ha ocurrido en varios accidentes.

sectores industriales que tradicionalmente presentan escasos lazos de unión y que, por lo tanto, podría resultar apropiado que la aplicación se llevara a cabo teniendo en cuenta las capacidades, necesidades e intereses de ambos sectores, y considerando a este respecto que la elaboración de las medidas preventivas debería ser el resultado de la colaboración entre los distintos agentes involucrados en los dos sectores industriales, incluyendo las autoridades responsables de la toma de decisiones, los reguladores, y los sectores metalúrgico, de la recuperación, y de gestión de residuos radiactivos.

(8) El mercado de los productos metálicos destinados al reciclaje es de naturaleza marcadamente internacional y que cualquier medida que se adopte deberá tener en cuenta este hecho y, en particular, que la reducción a un mínimo del riesgo radiológico deberá llevarse a cabo de forma homogénea en los distintos países, especialmente en el caso de los países de la Unión Europea, entre los cuales

DIRECTIVE 2003/122/EURATOM DU CONSEIL

du 22 décembre 2003

relative au contrôle des sources radioactives scellées de haute activité et des sources orphelines

LE CONSEIL DE L'UNION EUROPÉENNE,

vu le traité instituant la Communauté européenne de l'énergie atomique, et notamment son article 31, deuxième alinéa, et son article 32,

vu la proposition de la Commission, établie après avis d'un groupe de personnes nommées par le comité scientifique et technique parmi les experts scientifiques des États membres, conformément à l'article 31 du traité,

après consultation du Comité économique et social européen,

vu l'avis du Parlement européen [1],

considérant ce qui suit:

(1) L'article 30 du traité prévoit d'instituer dans la Communauté des normes de base relatives à la protection sani-

(6) Dans la directive 96/29/Euratom, des valeurs d'exemption étaient prévues pour la déclaration d'une pratique aux autorités. Ces valeurs ont été définies dans ladite directive sur la base d'un niveau de risque négligeable. Comme il n'y a pas lieu que les exigences de la présente directive entraînent pour les détenteurs de petites sources une charge administrative disproportionnée par rapport au détriment sanitaire possible, la définition des sources radioactives de haute activité ne devrait pas être étendue aux niveaux d'exemption de la directive 96/29/Euratom.

(7) Les transferts de sources scellées entre États membres sont régis par la procédure définie dans le règlement (Euratom) n° 1493/93 du Conseil du 8 juin 1993 concernant les transferts de substances radioactives entre les États membres [4].

(8) Bien que les prescriptions légales découlant de la législation en vigueur aux niveaux communautaire et national assurent une protection de base, les sources de haute activité présentent encore des risques potentiels considé-

RECOMMENDATIONS ON MONITORING AND RESPONSE PROCEDURES FOR RADIOACTIVE SCRAP METAL

Contents: Recommendations on Monitoring and Response Procedures for Radioactive Scrap Metal agreed at the UNECE Group of Experts Meeting (Geneva, 12-14 June 2006)

Prepared by: UNECE (2006)

BIR

INTERNATIONAL TRAINING AND CAPACITY BUILDING STRATEGY FOR MONITORING AND RESPONSE PROCEDURES FOR RADIOACTIVE SCRAP METAL

Contents: International Training and Capacity Building Strategy for Monitoring and Response Procedures for Radioactive Scrap Metal

Prepared by: UNITAR and UNECE (2007)

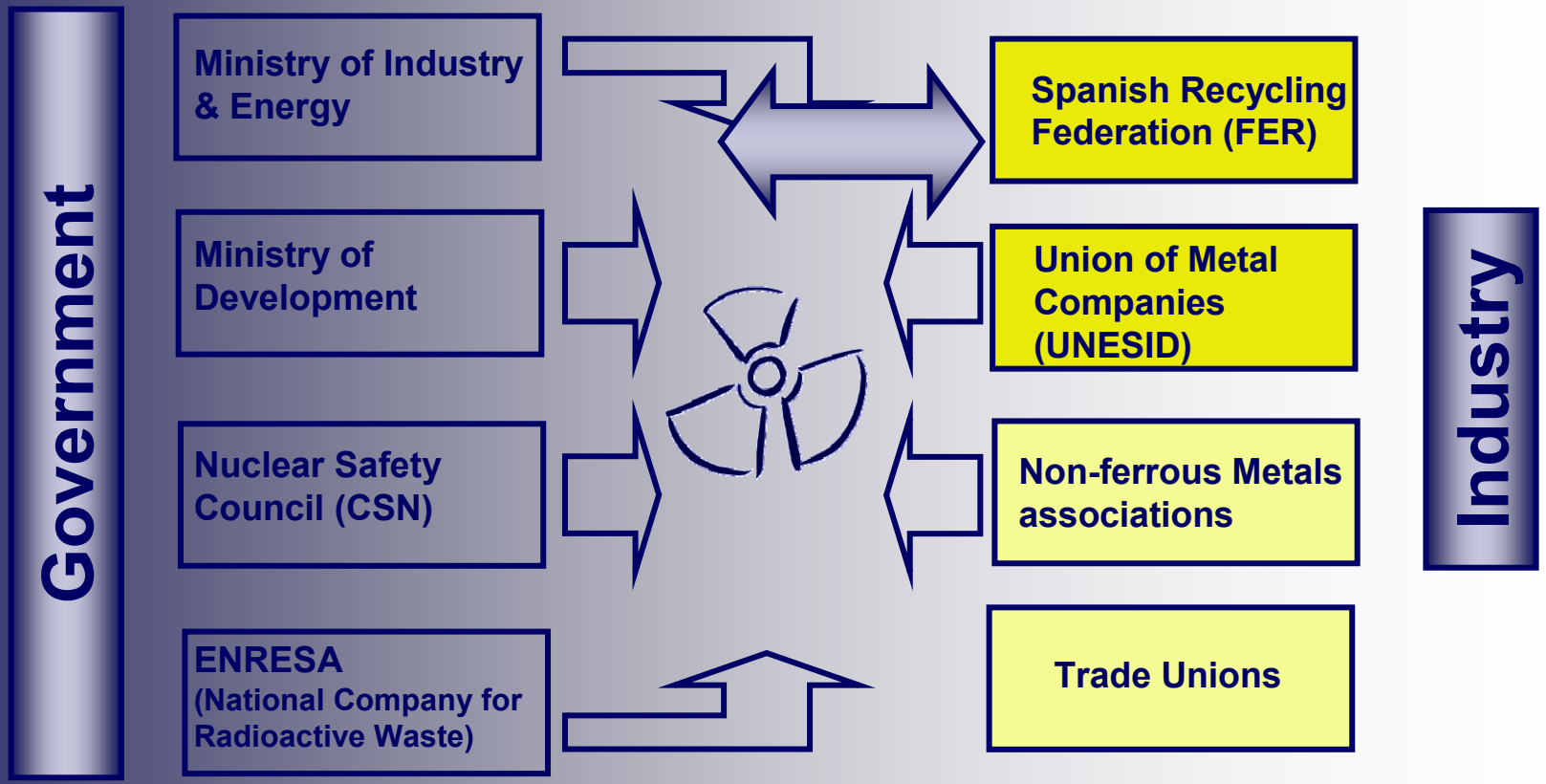
Identify best practice

advocate adoption
nationally, regionally
and internationally

BIR

The "Spanish Protocol":

- **Introduced in January 2000**
- ***a Model for the Recycling Industry***



BIR

United Nations Economic Commission for Europe (UNECE)

WHAT are the UNECE Recommendations?

A set of recommended best practices based on experience from over 50 countries. They aim to support countries and the industry to minimise the risks of radioactive scrap metal and are in line with and complementary to relevant IAEA activities.

WHY do we need Recommendations?

- Radioactivity can enter the metal stream intentionally or not, through orphan sources, or simply through natural occurrence
- Radioactivity is a major concern for the metal industry
- Health and environmental concerns are real
- Clean up and de-contamination costs can reach millions of dollars

WHO are the Recommendations for?

The Recommendations are for: recyclers, the metal industry, smelters, metal processors, trade ministries, Customs, transporters, regulators, researchers, the nuclear sector, etc.

UNITED NATIONS

UNECE Recommendations on Monitoring and Response Procedures for Radioactive Scrap Metal

Three Fields of Recommended Action:

Prevention

Prevent radioactive scrap metal from entering the recycling stream, through:
- Effective legislation
- Safety arrangements
- Risk assessment
- Training and awareness

Detection

Ensure effective detection is in place, including:
- Administrative, visual and radiation monitoring
- Monitoring at points of origin, borders, scrap yards, processing facilities and melting plants
- International coordination

Response

Establish appropriate response measures and capacity, including:
- Suitable procedures to respond to an alarm
- Management of detected radioactive material
- National and international reporting





Photos © Ray Turner

More information, as well as the UNECE Recommendations, can be obtained on: http://www.unece.org/trans/radiation/radiation.html

The recycling sector has invested in detection equipment and operational manpower

- Stationary gate detectors

- Grapple mounted detectors

- Handheld detectors

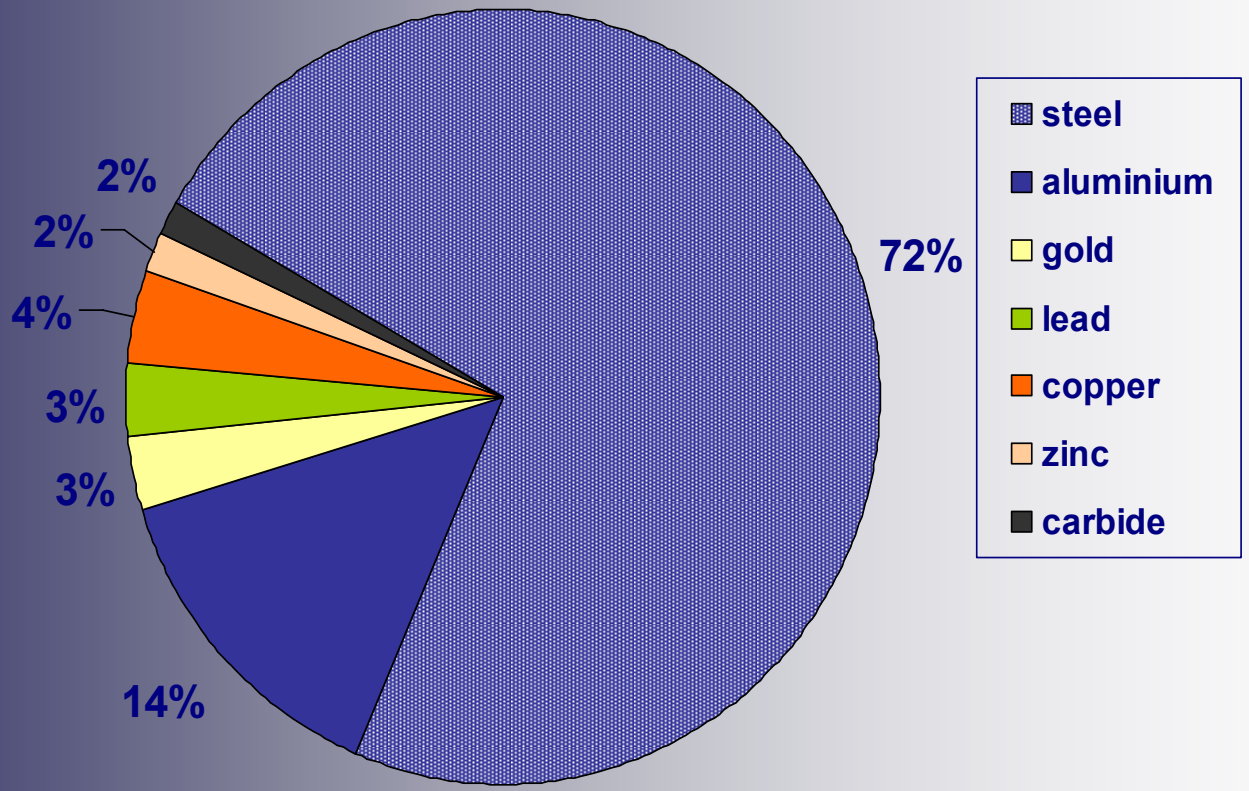
The recycling sector recognises the costs

- **Cesium Source** melted in Florida, contamination of emission control system and baghouse, led to **three (3) weeks of business interruption** with de-contamination & remediation work in 24/7 shifts

Total costs: **25 million USD**

Loss of shielding may not only happen during melting, but also during scrap processing (shredding, baling etc.)

- **Since 1983: More than 113 radioactive melting incidents in 26 countries**



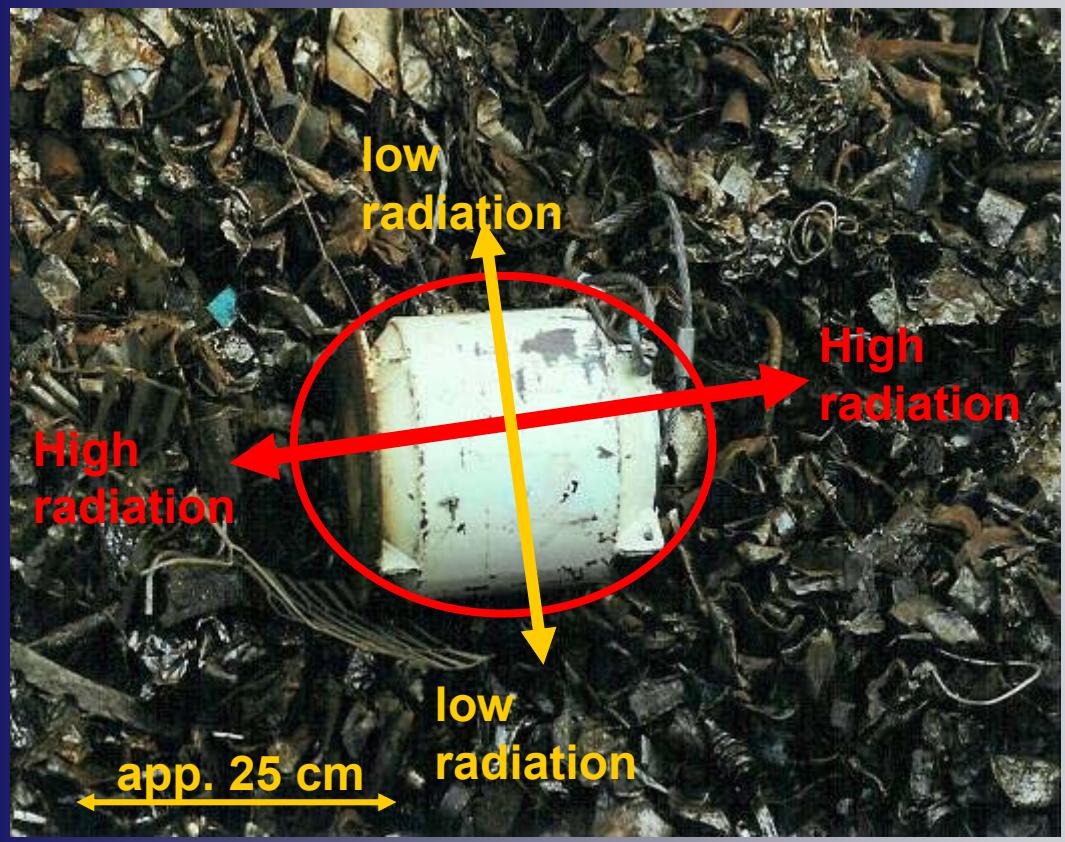
A global problem of the whole industry

Metal Industry stakeholders for an international agreement

Include all metal scrap processors and metal works, their suppliers and customers….

Limitation of Accessibility

Sealed sources are extremely dangerous in scrap & difficult to detect !!

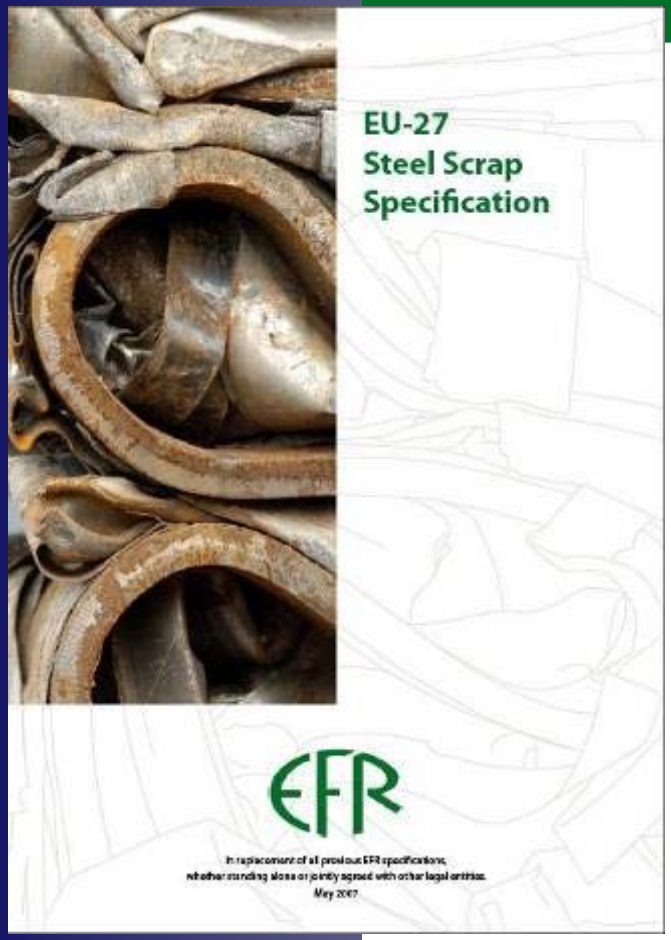


Most buyers and some authorities neglect that monitoring may not be 100% effective by demanding statements as "*Deliveries are free of any radioactivity*"

Such absolute & abstract warranties have consequences, as exceeding statutory liability any Insurance Cover is jeopardized

BIR

EU-27 Steel Scrap Specification



General Conditions applicable to all grades

As is practically achievable in customary preparation and handling of the grade involved
The definitions of this list of specifications apply only to non-alloy carbon steel scrap as raw material for the steel industry.

Environmental, health and safety considerations

A) SAFETY

All grades shall exclude:
1) pressurised, closed or insufficiently open containers of all origins which could cause explosions. Containers shall be considered as insufficiently open where the opening is not visible or is less than 10 cm in any one direction;

2) dangerous material, inflammable or explosive, fire-arms (whole or in part), munitions, dirt or pollutants which may contain or emit substances dangerous to human health or to the environment or to the steel production process;

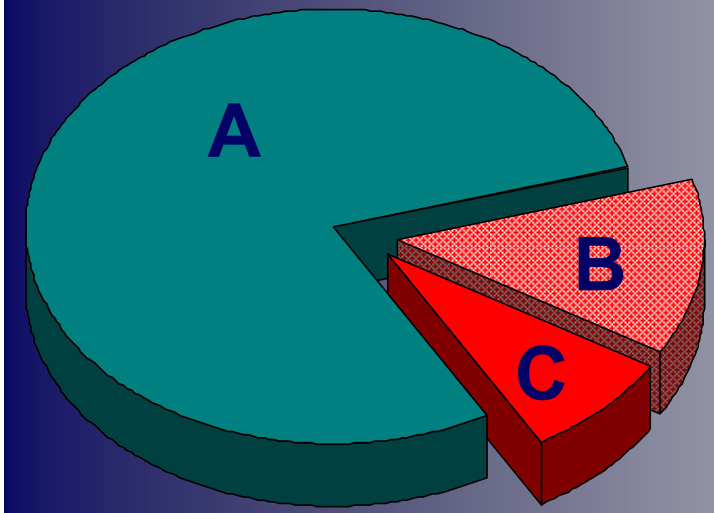
All grades shall be checked, within the limitations of accessibility and in strict compliance with appropriate detection equipment for radioactivity, to identify:

- material presenting radioactivity in excess of the ambient level of radioactivity

- radioactive material in sealed containers even if no significant exterior radioactivity is detectable due to shielding or due to the position of the sealed source in the scrap delivery.

B) STERILES (cleanliness)

Can the scrap industry handle the risk alone ? NO !



A) 79 %
non-nuclear ⇒
- not hazardous
- NORM*
- not subject to regulatory control

B) 13 %
Nuclear, research, medical etc.

C) 8 %
Orphan sources

⇒
- escaped from regulatory control
- special care needed
- hazardous
- need to restore regulatory control

App. 20 % caused by lack of registration and governmental control

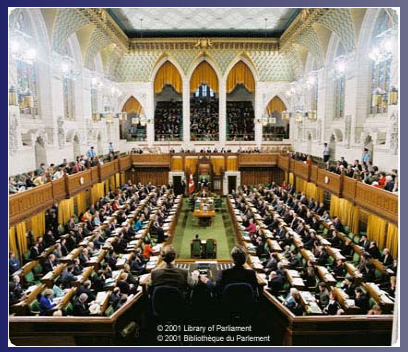
***NORM** = Naturally Occurring Radioactive Materials

Global Approach on Monitoring & Response Procedures needed

Recycling circuit and the international trade of metal scrap require a broad and international approach

⇨ Responsibilities have to be **shared fairly** amongst:

- Governments;
- Scrap processors; and
- Consumers (metal producers)



Do the right thing !

Government must remain responsible for radioactive sources escaped from regulatory control (orphan sources) nationally and must come to an inter-governmental agreement for recovery and disposal of detected source in import - transit - export

Steel Producers must ensure raw-material supply according to their quality specifications

Scrap Suppliers must ensure to supply raw-material to steel producers in compliance with quality specifications and scientific parameters

Scrap industry is part of the solution and must not be regarded as part of the cause

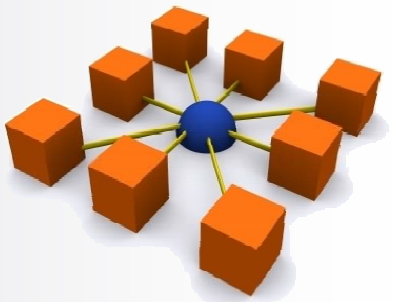
Sub-Suppliers must ensure to supply raw-material to scrap suppliers according to quality specifications and scientific parameters

Whole scrap / metal industry must take the necessary precautions regarding radiation detection

Governments' Areas of Responsibility

- Legislation
- Support of Scrap Recycling Industry and Steel Producers
- Provide financial assistance associated with:
  - Detection Equipment
  - Identification
  - Isolation; and
  - Disposal

  of radioactive material
- Establishing procedures and infrastructure for recovery and disposal nationally and internationally



Intelligent Infrastructure

The *"Spanish Protocol"* can be both a national solution and provide elements for an international agreement

Scrap Processors & Metal Producers

1. Installation of appropriate **monitoring equipment**
2. **Monitoring and response procedures** regarding radioactive incidents in compliance with applicable local rules and regulations
3. Continual **maintenance** and calibration procedures for the equipment
4. Continual **training** of all personnel on radiation monitoring

⇨ **Increased number of detection measures improves the likelihood of discovering radioactive material**

⇨ **Don't penalise finders, properly apply the Polluter Pays Principle to the licensed owners of orphan sources or radioactive material**

recall

THE TALE OF A MAN

("LA HISTORIA DE UN HOMBRE")

ALVARO RODRÍGUEZ MARTÍNEZ

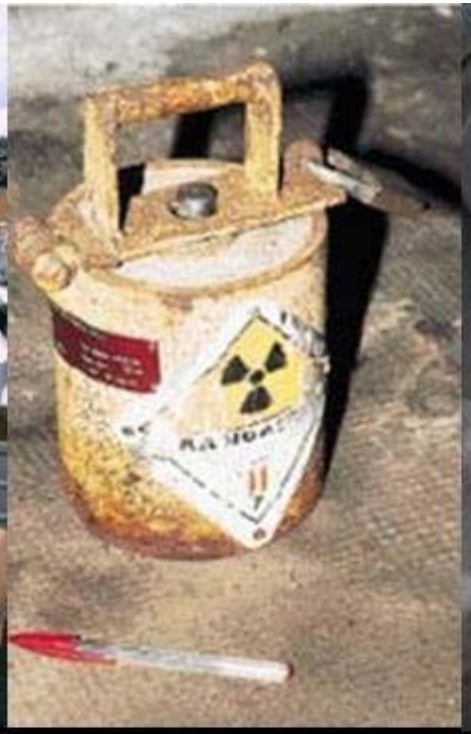
FEDERACIÓN ESPAÑOLA DE LA RECUPERACIÓN

(FER)

Find a shell

Save a town

Get a medal



Find a radioactive source

Save health if not life

- ⇨ Scrap processors & Metal-works find radioactive material but are not the polluters
- ⇨ BIR support the establishment of an international instrument to address issues of all involved parties
- ⇨ Recognise the help you get from, talk to and listen to, all in the Metal Recycling loop: scrap collectors; sorters; processors; metal works ….