Monitoring of Radioactive Scrap Metal

Activities of UNECE and its Group of Experts

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WORK UNDERTAKEN BY UNECE

- **1999: UNECE Seminar** on Radioactively contaminated scrap metal (Czech Republic)
- **2000**: **Team of Specialists** (governmental/regulatory and industry)
- **2001**: **UNECE, EC and IAEA publication** "Report on the Improvement of the Management of Radiation Protection in the Recycling of Metal Scrap"
- **2003/4**: 1st **UNECE Survey** on current state of scrap metal radiation monitoring worldwide
- **2004**: 1st Session **UNECE *Group of Experts*** to discuss **policies and experiences** in monitoring & interception of radioactively contaminated scrap metal & to explore ways to facilitate international trade and transport of scrap metal
- **2005/6**: 2 nd **UNECE Survey** *(progress report)*
- **2006:** 2 nd Session **UNECE Group of Experts** to agree on **Recommendations on Monitoring and Response Procedure for Radioactive Scrap Metal**

DEFINITION

What is radioactive scrap metal?

(defined by the UNECE Group of Experts)

Radioactive scrap metal may comprise:

- **radioactively contaminated scrap metal,**
- **activated scrap metal,**
- **scrap metal with radioactive source(s) or substances contained within it.**

- **It may include radioactive substances that are subject to regulatory control and outside regulatory control.**

Need for Action

Monitoring radioactive scrap metal

Facts

- **Increased steel production and use of recycled scrap metal**
  World steel production (2005): 1,100 Mio tonnes +6 % p.a.
  World metal scrap consumption (2004): 440 Mio tonnes
- **One of most actively traded commodities world-wide**
  International trade and transport(2004): 184 Mio tonnes
- **Increased decommissioning of sites with potential radiation hazards**
- **Improved technology in radiation detection devices**
- **Increasing number of detectors and detections**
- **Usually very low radiation levels involved and associated low health and environmental risks**
- **However, major economic, financial and trade consequences of incidents**
  Facility clean-up costs in the order of US$ 12-15 Mio

Need for Action

Monitoring radioactive scrap metal

Concerns

- **A policy concern: Increase recycling for energy and environmental reasons**
  74% less energy and 86% less emissions (iron and steel)
- **A business concern: Consumers and industry want radiation-free goods**
- **A transport and trade concern: Increasingly large volumes of metal scrap are transported by land and maritime modes of transport**
  Annually: World: 184 Mio tonnes; EU: 68 Mio tonnes; CIS: 21 Mio tonnes
- **An inter-sectoral and inter-departmental concern:**
  Coordination and cooperation between
  - Industry and (Governmental) regulatory authorities
  - Government: (Commerce, Energy, Customs, Health, Interior)
  - Industry (demolition, traders, transporters, recyclers, steel industry)
- **A potential security concern**

1st UNECE Expert Group Meeting

April 2004

First survey on radioactive scrap metal (2003/2004)

Metal scrap related industries and Governments world-wide
Replies from 48 countries
Results published in 2004 (in detail on protected web site)

Issues addressed:

- **Regulatory infrastructure**
- **Monitoring and detection mechanisms**
- **Disposal mechanisms**
- **Contractual procedures**
- **Reporting and response measures**
- **Experiences with radioactive scrap metal**

1st UNECE Expert Group Meeting

April 2004

UNECE experts proposed the following measures:

- **Voluntary "Protocol" or "Recommendations"**: Development of international Recommendations to increase the capture of radioactive material in scrap metal, to reduce potential contamination and to aid in the disposition of found materials

- **Information exchange**: Establishment of an international web portal

- **Training**: Preparation of international training and capacity-building programmes to address protocol implementation

2nd UNECE Expert Group Meeting

June 2006

Prepared and agreed on

Recommendations on Monitoring and Response Procedures for Radioactive Scrap Metal

Recommendations

Objective

- To assist Governments and industries to effectively monitor, intercept and respond to radioactive material in scrap metal
  - by seeking to prevent its occurrence (prevention),
  - by effectively monitoring shipments and facilities (detection),
  - by intercepting and managing any radioactive material found in scrap metal (response).
- To encourage use of recycled materials
- To facilitate international trade and commerce of scrap metal without compromising safety

Recommendations

Substantive basis

- Spanish Protocol for Collaboration on Radiation Monitoring of Metals (1999)
- UNECE, EC, IAEA Report on Management of Radiation Protection in the Recycling of Metal Scrap (2001)
- EU and IAEA regulations and « guidance »
- Industry metal processing and recycling specifications

Recommendations

Concept (1)

- Voluntary
- Compendium of best practices and alternatives
- Based on national/international regulations, standards and practices
- Expert opinion (regulatory and industry participation)
- Comprehensive approach (from demolition to melting)
- Identify responsibilities, procedures and mechanisms
- Encourage national and international collaboration
- Framework for action by Governments and industry to develop their own strategies for safe use of metal scrap

Recommendations

Concept (2)

- NOT legally binding or compulsory
- NOT a Guidance document or Code of Conduct
- NOT a political or regulatory commitment on control measures, procedures and mechanisms

Recommendations

Scope

The Recommendations

- include all metals used and traded nationally and internationally as part of the scrap metal recycling industry
- are addressed to all parties concerned with the scrap metal recycling industry
- are concerned with facilitating commerce in scrap metal; not with national/State security aspects of radioactive sources
- are not intended to place legal commitments on countries but, instead, to provide recommendations, guidance and best practices for voluntary application
- deal with substances within regulatory control and radioactive substances that are outside regulatory control

Recommendations

Strategy

1. First line of defence is prevention

but, in an imperfect world, we recognise that some release of radioactive material into scrap metal will occur,

Therefore:

2. Second defence is by detection

3. Third defence is in the response to the discovery of radioactive material in scrap metal

Recommendations

Outline

I. GENERAL PROVISIONS
- A. Definitions
- B. Objectives
- C. Scope
- D. Guidance and international legal instruments
- E. Origins of radioactive scrap metal
- F. Recommendations on responsibilities and coordination

II. FIELDS OF ACTION
- A. Recommendations on prevention
- B. Recommendations on detection
- C. Recommendations on response

III. ADDITIONAL PROVISIONS
- A. Training
- B. Information exchange

ANNEXES
- I. Example Certificate of Shipment Monitoring
- II. Example Content of a Unified National Collaborative Scheme to the Discovery of Radioactive Scrap Metal
- III. Example National Arrangements to Support Response to the Discovery of Radioactive Scrap Metal
- IV. Examples of Monitoring Procedures Used for Scrap Metal Shipments
- V. Example Form for Reporting Detected Radioactive Material in Scrap Metal

Recommendations

Structure

On each topic for action :

- ***General discussion***
  - **options for resolution of issues**
  - **general recommendations,**

- ***Specific recommendations* for identified parties**

Recommendations

Next steps

- Dissemination of Recommendations
- Expansion of web portal
  www.unece.org/trans/radiation/radiation.html
- Survey of existing training materials
- Identification of training gaps
- Input into training initiatives to implement
- Recommendations (capacity building)

END

www.unece.org/trans/radiation/radiation.html

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