

Session 1: Global perspective

In this session the views and perspectives of different organizations concerned with the issue of radioactive material in metal scrap were presented, including those of the international organizations concerned with scrap metal recycling, steel making, radiation source security and safety and international trade and economics.

For the metal industries, the potential presence of radioactive material in metal scrap raises concerns about the reliability of scrap as a key source material for metal manufacture. Inadvertent radioactivity found in scrap is mainly due to naturally occurring radioactive material (NORM) and orphan sources. The consequences of melting incidents involving radioactive material are mainly economic, with costs running into millions of euros, but they can also include a loss of confidence in the quality of the metal product. Nowadays, scrap metal is an important source material for the metal production industry contributing a large fraction (about 50% for steel) of the final product. It is noted in this context that the amount of steel scrap resulting from the decommissioning of a nuclear reactor is a very small fraction of that being used every year by the steel industry.

Radioactive sources find a wide range of beneficial applications in medicine, industry and research and it is unlikely in the foreseeable future that these uses of radioactive sources will be discontinued. Similarly, scrap reuse through melting offers substantial savings in use of raw materials and energy for processing and so the recycling of scrap is a practice that will continue.

International and regional organizations with responsibilities for the protection of workers and the public against the effects of ionizing radiations have sponsored the development of instruments such as the international Code of Conduct on the Safety and Security of Sealed Radioactive Sources and the European Directive on High Activity Sealed Sources (HASS Directive) to control and secure sealed radioactive sources by proper administrative means in each country. However, these instruments do not address the issue of inadvertent radioactive materials appearing in scrap metal. To date, the only international guidance in this context comes from the UN Economic Commission for Europe which, in 2006, issued a set of recommendations on monitoring and response procedures for radioactive scrap metal.

Despite the increased international attention being given to the control of radioactive sources in recent years, for example, through the international Code of Conduct, there does not appear to have been any significant reduction in the number of reported incidents involving radioactive material in scrap. This could be due to the fact that many sources which appear as orphan sources are quite old and may already be outside the

‘control system’. It may also be due to the expansion and improvement in detection methods used at borders, scrap yards and metal works.

A concern of the industry is that it is often difficult to find the organization/person responsible for the radioactive material appearing in scrap metal and to recover the often substantial costs associated with clean-up and loss of production. In this case the polluter usually does not pay.

From the side of the nuclear industry, the recycling and reuse of metal from the decommissioning of nuclear facilities is an important strategy. The alternative – disposal – is wasteful, and is becoming increasingly costly. The concept of clearance is used to determine which parts of decommissioned materials can be released from regulatory control. At present, cleared materials from the nuclear industry are used in applications which are in some way controlled, such as reuse again within the nuclear industry or use for applications which have very low probability of the released materials coming into contact with the public. The unrestricted release and use of cleared materials is not widely accepted. This is an issue which may be expected to increase in significance in the future as more nuclear facilities are decommissioned. National policies vary on this matter with clearance finding acceptance in some countries but being rejected in others. The metal industries are, for the most part, reluctant to accept cleared material, partly to avoid any possible risks of melt contamination but also in response to the concerns of the public.

The following topics were discussed in the Panel discussion held after this session:

The need for improved controls over scrap metal loads moving between countries was highlighted. At present there is no requirement for certification of radiation monitoring of loads although some considered this not to be feasible given the large number of loads and the limited resources of some scrap companies. It was also pointed out that there is no agreement on what procedures to adopt when a load is found to trigger radiation detector alarms at the borders.

The discovery of radioactive material in scrap is seen by persons in the scrap metal industry as a negative thing because it can bring difficulties with the authorities, a loss of production and a waste of time. This can cause such incidents to be hidden from the authorities. If the finding of radioactive material were to be seen as a positive event that merited awards being given to persons then this could transform the situation and lead to greater openness in reporting.

There are problems in communication between the metal industries and the nuclear industry. The concerned groups within them, such as the trade unions, do not understand each other and the terminology used, especially by the nuclear side, does not help this process. An international forum to promote this dialogue could help the two groups to understand each other and might possibly lead to solutions to the common problems that they face.

