Radioactive Scrap

A Major Environmental Problem

Steel companies are confronted each day by the possible presence of radioactive materials in scrap. These materials are usually in the form of: sealed radioactive sources, typically installed in measurement gauges used in manufacturing operations or in hospital equipment; scrap from decommissioned nuclear power and USDOE facilities; and imported scrap.

The presence of spent radioactive materials in the ferrous scrap supply presents significant health and safety risks to steel workers and to the general public.

In the past fifteen years, over 84 known incidents have occurred worldwide in which metals companies inadvertently melted shielded radioactive sources. Fortunately, none of these incidents resulted in worker injuries or loss of life. But they have caused major economic damage.

In 2007, the U.S. Nuclear Regulatory Commission (NRC) proposed and finalized a national radioactive source-tracking program for generally licensed Level One and Level Two sources. Through continued efforts by SMA and others, NRC reviewed and proposed to include Level Three sources in the program in 2008. SMA will continue to press the Agency to expand the source-tracking system to include ALL generally licensed radioactive sources in use today. To protect themselves from sources that are improperly introduced into the steel scrap supply, EAF steel companies have installed sophisticated radiation detection systems to monitor all incoming shipments of scrap by truck, rail, and vessel. However, no system is infallible, and incidental source melting events continue to occur.

The economic effects of inadequate control of radioactive sources include: the purchase of sophisticated detection systems and equipment; training personnel in detection; delays in steelmaking operations; costs for disposal of sources; and for a company that has inadvertently melted a radioactive source, tens of millions of dollars of business interruption losses and clean-up costs.

Historically, penalties for improper source disposal have been minuscule – often a fine of a few thousand dollars levied against the negligent licensee for a source that, if inadvertently melted, would cost a steel company many millions of dollars, the total cost

associated with decontaminating a facility after an inadvertent melting of a radioactive device can range up to $15 million. Recently, NRC amended its enforcement policy to allow fines equal to the cost of proper disposal. The SMA lauds this change in policy.

No Contaminated Scrap from Decommissioned Facilities

For the past 25 years the US Department of Energy (DOE) has maintained a policy of "free release" of obsolete equipment and materials at weapons production and research facilities across the country. Free release means that the material is cleaned, and if necessary, declassified, and then released into the stream of commerce for unrestricted use. In the past, the amount of such material released was not significant. Following the end of the Cold War, DOE is decommissioning and dismantling several facilities across the nation, and expects to release thousands of tons of scrap metal from these facilities for recycling at steel companies without any dose-based clearance standards.

SMA members would be the primary intended recipients of this scrap and would stand to suffer serious economic injury, as much of this material is radioactively contaminated. **SMA members are trying to keep radioactivity out of their mills, and therefore oppose free release**. DOE's policy is simply inequitable and short-sighted and could develop into a public policy disaster.

Free release of radioactive scrap could adversely affect the marketability of steel products made from recycled scrap. The public perception is that any level or type of radioactivity is unsafe. Metal recycling industries have worked hard to build public confidence in the safety and utility of products made from recycled metal. This confidence would be lost if the public, rightly or wrongly, perceives such products to be unsafe. For this reason, **SMA members have not, and will not, accept scrap that is known to be radioactively contaminated.**

Furthermore, the unrestricted release of radioactively contaminated metal from nuclear facilities for recycling would tarnish the image of recycling, and potentially lead consumers to avoid products made of steel – especially those with high recycled scrap steel content.

DOE should adopt a policy of restricted release of scrap, provided the scrap meets specified health-based standards. Restricted release should be specifically limited to either of two proposed eligible uses:

1. Recycling or recovery at a dedicated, licensed facility for use only at an NRC-licensed fuel cycle facility or at nuclear facilities operated by the DOE, where the use of low level radioactive material is not an issue; or

2. Disposal into licensed radioactive waste landfills, or into municipal or industrial landfills, as long as the material meets specified health-based levels. If these levels are met, the landfill need not be licensed as a radioactive waste landfill.

DOE should not authorize any release of material from nuclear facilities until it establishes health-based standards that reflect sound science. NRC is currently evaluating whether and how to establish dose-based clearance levels that will adequately protect health and safety. It is expected that DOE would follow NRC's standards. It is prudent public policy that material not be released until firm, publicly accepted standards and procedures for attaining and measuring compliance are developed through the standard setting process.

SMA opposes policies or rulemaking activities that sanction the free release of radioactively contaminated scrap metals from nuclear power plants or DOE facilities, without any additional regulatory controls. The US steel industry cannot be the dumping ground for the discards of the global nuclear age.