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before the
Board of Directors
Steel Manufacturers Association
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INTRODUCTION

I am here today to discuss a problem that impacts both of us - the problem of radioactively contaminated steel, making its way via scrap handlers then being crushed and melted into other recyclable products.

I welcome the opportunity to be here to get your views on this issue. This is not a subject that we know a great deal about, so after I briefly outline the current situation as we understand it, I'd like to use most of my time to hear your views and suggestions.

During the nine years from January 1985 through December 1993 NRC is aware of 322 reported discoveries of radioactivity in metal scrap within the United States and Canada -- in fact, there was another incident yesterday.

Of the 322 discoveries, 302 were discovered before smelting, 2185 of these by stationary radiation monitors or by hand surveys. The other 20 events led to smelting of sources and contamination of facilities.

To the best of our knowledge, the 20 smeltings that occurred in the United States have not resulted in any serious exposures to the public, but the estimated cost of decontamination and disposal for each of these smeltings will range from half a million dollars to as high as 10 million dollars.

Although the discoveries of radioactive material in metal scrap has been small, recently this number has been increasing (chart). What we frankly don't know is whether the increased use of monitoring by the industry is uncovering what was going on all along, or whether incidents are in fact becoming more numerous. Note that the increase is almost entirely in sources of radiation not regulated under the Atomic Energy Act, and hence outside

NRC's authority.

The most harmful and therefore worrisome source of contamination is the approximately 150,000 licensed industrial sealed sources and devices in use nationwide; annually only 5 to 10 devices are reported to NRC as lost or stolen and another half dozen turn up unreported by the licensees -- these are the devices that could make their way to the scrap handlers. So we have about fewer then one incident for every 10,000 sources, which means we are faced with the problem of finding a costly needle in the haystack.

ROLES and RESPONSIBILITIES

Byproduct Material (i.e., cesium-137, cobalt-60)

NRC and the Agreement States use a combination of licensing, inspection, and enforcement actions to ensure that licensed radioactive material is controlled, distributed and disposed of properly. Under the current regulations, licensees are not permitted to dispose of byproduct radioactive waste without prior approval from the NRC. For the offenders, NRC has the authority to impose penalties ranging from monetary fines to license revocation and criminal sanctions. Licensing activities play an integral role in the traceability of sealed sources and devices. Sources and devices are approved for specific licensing, general licensing or exemptions from licensing, depending on the level of risk they pose to the health and safety of the public and workers.

Those sealed sources and devices approved for use under a specific license, such as cobalt-60 in teletherapy, iridium-192 in radiography and cesium-137 in some gauges, generally contain higher activity sources. It is very unusual for such a source to be lost, in large part because a user is required to have a radiation protection program in place and meet all the applicable NRC requirements in order to obtain a specific license.

Sources and devices approved for use under a general license, such as most cesium-137 and americium-241 in gauges, are typically tamper-proof, contain lower levels of radioactive activity, and do not require the licensee to have a radiation safety program. Gauge users and many other users are granted a general license automatically without filing an application when they purchase a device from a specifically licensed manufacturer or distributor.

Manufacturers and distributors of devices to be used under a general license must themselves have a specific license and are required to submit quarterly reports to NRC and the Agreement States listing the transfers made to general licensees. The quarterly report contains the customer's name and address, model number, and other pertinent information. If the customer

transfers, disposes or loses the source he is supposed to inform us, but we suspect that many do not.

To assist license reviewers and inspectors to identify sealed sources and devices, and to help identify lost or stolen sources, the NRC does maintain a national registry system. This registry system includes information on sources and devices that contain byproduct material. In addition, this system includes information supplied by the States on sealed sources and devices that contain naturally occurring and accelerator produced radioactive material, i.e. non-Atomic Energy Act material. If the licensed material received at a scrap handler retains legible labels and other identifying information, then the registry system can be queried about the manufacturer and other pertinent information, but there is little confidence that we can trace the source beyond the first general licensee.

I'll digress from discussion of sources to discuss emission control dust. EAF dust arises from the primary production of steel in electric arc furnaces; it is listed by the Environmental Protection Agency as hazardous waste. EAF dust that is contaminated with radioactive material, such as results when radioactive material is accidentally smelted, is considered mixed waste. Because mixed waste contains both radioactive material and hazardous waste, it is subject to the NRC's authority under the AEA, and the EPA's authority under the Resource Conservation and Recovery act of 1976 (RCRA). In addition, both NRC and EPA have programs under which the authority for the regulation of the radioactive or hazardous components of mixed waste can be adopted by the States. NRC and EPA have been working jointly on guidance for handling and disposing of mixed waste.

An example of successful government interagency cooperation is the U.S. Department of Transportation (DOT) exemption that simplifies the return of some metal scrap by a recipient if it is found to contain radioactive material. The DOT exemption is administered by the Conference of Radiation Control Program Directors -- the individual shipments must receive approval of the State radiation control program having jurisdiction.

Industry

NRC's primary role is to protect the public health and safety and, as my outline of the problem illustrates, contaminated scrap in the U.S. has become an economic issue because of the need to comply with EPA and NRC safety requirements for decontamination and disposal. The industries concerned certainly have a right to expect that their government will help them avoid unnecessary and unfair costs.

The role of the industries concerned, and how to allocate the costs of preventing contamination to these industries, is also a central issue. Solutions which put an excessive burden on

the users of the licensed sources, or on the users of the scrap, are simply not justifiable. What is needed is a combination of fairness and efficiency. You have recognized that

responsibilities for clean and efficient operation fall on the recyclers of the scrap as well.

The metal recycling industry has already completed a number of significant actions in this regard: The Institute of Scrap Recycling Industries, Inc. (ISRI), in particular, has been an active proponent of education about this problem as a vehicle for prevention. ISRI has conducted seminars and, with the help of NRC, developed an information booklet. ISRI has developed technical guidance, contained in a recommended Practice and Procedures manual, and with the help of NRC and the Conference of Radiation Control Program Directors, is completing a video for its members. These are excellent steps that reflect a working partnership between the industry, the States, and NRC.

Furthermore, the more informed recyclers of scrap are now taking additional steps to prevent radioactive material from becoming mixed with recycled scrap. For example, in addition to performing their own monitoring, some steel mill operators will not purchase metal scrap unless the supplier certifies that it has been monitored for radioactivity. There must be continuing educational initiatives to reach all sectors of the industry and spread the word about these protective techniques.

CORRECTIVE STEPS

Broadly speaking, three types of steps should be considered:

- Analytical Steps

We know neither the extent of the problem nor its impact on steel recyclers and manufacturers. Efforts would be welcome to determine more accurately how many sources are lost annually, what the real health and safety risk is, how much economic damage the industry suffers, and what the potential economy downside is to the industry as a whole.

- Risk-spreading steps

Both the economic risks of contamination and the costs of reducing these risks will be borne by the licensees who hold the sources, the wholesalers who collect and sort the scrap, and the recyclers and steel manufacturers. Before invoking the heavy hand of government, these industries ought to consider what they can do on their own to reduce the absolute level of risk, to share the costs of this reduction, and to spread the residual financial risks equitably and efficiently among themselves.

- Regulatory Steps

Once the industries concerned take sensible steps to spread the financial risk effectively and equitably among themselves, what further licensing, inspection and enforcement steps should be considered, how costly or effective are they likely to be, and are the costs commensurate with the health or economic benefits?

A number of specific steps suggest themselves:

- Through communication and education comes awareness. It is important that not only ISRI but SMA and all scrap handlers be informed of the issues, how to handle a hazardous situation if one were to occur, and the responsible persons to contact.

- As pointed out earlier, 285 of the 322 detections of contaminated scrap were detected with stationary monitors and 94% of all contaminated scrap was discovered before smelting. I commend you for your efforts to date; but perhaps more monitoring should be done. You should encourage all your members to adopt protective monitoring measures to identify radioactive material at their plants and require suppliers to certify that they have monitored incoming materials.

- Since approximately half of all the detections of radioactivity in the scrap recycling stream has been radioactive material regulated by the States, we are providing technical support to the Conference of Radiation Control Program Directors, to develop recommendations for possible solutions relating to this issue.

- It is unrealistic to expect that any regulatory system can secure 100% compliance of sources and devices under the control of licensed users. Unfortunately some licensees will fail to maintain proper control of their sources or devices despite the existing regulatory framework. The industry is considering establishing financial protection, for those members having a monitoring system, that can be used to subsidize the cost of decontamination that results from smelting of an undetected source. This is an excellent idea which would have useful side benefits, such as centralized data and a more informed voice for reducing risk.

- NRC will continue to provide assistance in identifying sealed sources and devices that are inadvertently in the possession of recyclers and scrap dealers. In addition, if appropriate, NRC will contact DOE for possible disposal of the sealed source, contamination, or device.

- NRC will consider issuing a formal statement endorsing the practice of monitoring recycled scrap for radioactivity.

CONCLUSION

The issue of radioactive material contaminating recycled scrap has received increased attention over the past few years. Your concerns are similar to those noted by ISRI and others. NRC realizes the importance of ensuring that radioactive material does not contaminate recycled scrap. We appreciate your concern and your bringing these specific points to our attention. We know we don't have all the answers, and welcome your suggestions. Now, I'm anxious to hear your ideas; to have a dialogue on the subject.