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DOCKET NUMBER
PROPOSED RULE PR 20
(64FR35090)

DOCKETED
USNRC

'99 DEC 23 A11 :29

December 22, 1999

Secretary
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Attention: Rulemaking and Adjudications Staff

The Institute of Scrap Recycling Industries, Inc. (ISRI) herein presents comments in response to the Nuclear Regulatory Commission's (NRC) request for comments published June 30, 1999, in the Federal Register. This request was for comments based on the NRC's consideration of a rulemaking that would set specific requirements for release of solid material from NRC licensees.

The issue of release of solid material from NRC licensees is an issue that is very important to our approximately 1,400 member companies, most of which are small businesses, that process, broker, and consume scrap commodities. These commodities include scrap iron and steel, aluminum, copper, stainless steel, nickel, lead, zinc, paper, plastic, glass, rubber and textiles. Such material, when recycled, is processed and prepared by ISRI member companies to rigid specifications so that it may be purchased and melted by ferrous or nonferrous mills and foundries, as well as other consuming facilities. Metallic scrap commodities have been identified as being a significant part of the material that would be released from NRC licensees under the rulemaking that is being considered by the Commission, thus ISRI's interest in this rulemaking.

Annually our members return more than 120 million tons of secondary materials to the economy as specification feedstock to replace virgin materials that otherwise would have been used to make new products for use in the economy. The savings in terms of reduced energy needs and sharply lower water and air pollution, water use, and solid waste generations are a dramatic and major contributor to America's improving environment. It is vital that scrap recyclers continue to be a major force in the improvement of the environment. It is vital that their customers, the steel or nonferrous mills, foundries and other consuming facilities, continue to have confidence in the feedstock of processed scrap material that our members deliver to them. It is also vital that the general public continues to have the greatest degree of confidence in the safety and reliability of material that is made from recycled scrap materials.

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ISRI participated in the public meetings that were designed to solicit early public input on the major issues associated with the release of solid materials from NRC licensees. It was very clear at these meetings that the concept of known radioactive material entering into general commerce prompted a great deal of fear and apprehension from both industry and the general public. We can understand, in part, the reason for the fear.

For many in the recycling industry, radioactivity elicits a fear of both health risks and tremendous financial risks. These fears stem from the numerous incidents of licensed sources that have been lost, stolen or forgotten by the individual or company that was responsible for assuring that such potentially dangerous devices not reach the general public. One or more metals may compose the housing for these devices as well as the machinery or equipment that could house these devices. It is their metal composition, and the value of that metal, that causes lost, stolen or forgotten sources of radioactivity, often termed "orphaned sources", to occassionally be brought to scrap recycling facilities. Internationally, since 1983, there have been more than 3,600 detections of radioactive material at facilities that process or consume scrap metal reported to the Conference of Radiation Control Program Directors. This number includes 457 recovered sources and devices and the smelting of 66 sources of radioactivity. It is possible that these numbers represent only a fraction of the actual occurrences.

The economic hardship caused by the careless and uncontrolled release of these sources has been substantial. A scrap recycler whose shredder damaged the housing of a sealed source incurred clean-up costs of more than $500,000. The cost to steel mills, whose process will melt the entire protective housing and disperse the radioactive material throughout the melt, for decontamination of their furnace facilities has averaged between $8 and $10 million.

Yet the fear related to clean-up costs and the interruption of business is not as significant as the fear related to the potential safety risks. In 1987, a radioactive source ruptured at a Goiania, Brazil scrap recycling facility resulting in four deaths and more than 200 people receiving dangerous levels of radiation. In 1983, a ruptured source at a Juarex, Mexico, scrap facility exposed many workers to as much radiation as would come from 35,000 chest X-rays. Today 20 current workers are still being treated for various radiation-related problems. In 1996, workers at a Houston scrap recycling facility, including two children of one employee, were exposed to radiation from a ruptured source.

ISRI has worked vigorously to protect recyclers from the threat of dangerous radioactive material. In 1993, ISRI issued *Radioactivity in the Scrap Recycling Process: Recommended Practice and Procedure*. This document provides information to ISRI members that assists them in the identification, detection, and handling of potentially hazardous radioactive material that may inadvertently enter the scrap recycling stream. ISRI's efforts continued with its support of and participation in the NRC-Agreement State Working Group, which developed recommendations that would later provide the framework for the NRC's decision on the increased regulation of general licensed sources. In addition, ISRI has worked with the Conference of Radiation Control Program

Directors for the creation of the "orphaned source" program, which is currently under development.

We understand that the issue at hand is not related to the inappropriate release of sources of radioactivity. We are grateful that the Commission has recognized this potential threat and has taken action to decrease the threat to the recycling industry from these sources. Yet it is clear that the mention of the issue of release of radioactive material is a cause of great fear and concerns both throughout the recycling industry as well as the general public.

These fears should not stand in the way of an appropriate solution for the release of material from licensed facilities. However, until these concerns and fears are adequately addressed, there will be no opportunity for a solution that is acceptable to the stakeholders who would be involved in the release and recycling of scrap from these facilities. Therefore, before the Commission can commence a rulemaking on the release of solid material from these facilities, it is imperative that the key stakeholders in this effort achieve a complete understanding of all that is involved in this issue. This will then allow these stakeholders to reach a consensus on an acceptable release, recycling, and reuse criteria based on a full understanding of the factual elements involved in this issue. When such a consensus is achieved, the Commission can then proceed with a rulemaking for the purpose of implementing regulations that would achieve the elements reached during the stakeholder fact-finding and consensus process.

ISSUES

For the parties potentially involved in the release and recycling of scrap from licensed facilities, a number of issues need to be clarified before an effective rulemaking effort can be undertaken. These issues relate to both uncontaminated material and contaminated material.

Uncontaminated Material:

It is assumed that there is probably a substantial amount of scrap material at NRC licensed facilities that has never become contaminated with radioactive material. While this material could be recycled, as would any other scrap material, the concern is whether this material truly meets an acceptable definition of "uncontaminated." For this to occur, all affected stakeholders would need to agree on a measurable definition and an acceptable means for proving and documenting that such material is not contaminated by radioactive material. This should include assurances and proof that contaminated material did not become mixed with uncontaminated material at any time prior to release.

Contaminated Material:

Material could be contaminated or decontaminated to a very low level. At present, low-level contaminated material may be released for unrestricted use if it meets the requirements of US NRC Regulatory Guide 1.86 "Termination of Operating Licenses for Nuclear Reactors", June 1974. This regulatory guide was based on the available science for the detection of radioactivity in 1974. Any new regulation for the release for recycling and reuse of contaminated material must be based on both detection criteria acceptable to the affected stakeholders and current detection science reasonably available to those stakeholders. A measurable definition and an acceptable means for proving and documenting that released material is at such an acceptable level would be required. However, before acceptance criteria could be established, the stakeholders would need to review numerous issues. The following are a few of these issues:

1. The effects of contamination on employees, machinery and equipment from the recycling of such material. Currently this information is theoretical, based on the known action of the isotopes. However, this information would have to be reviewed and verified based on a study of current international recycling efforts.

2. The contamination of byproducts and waste from the recycling of such material. This would include the current restrictions for the handling and/or disposal of such material.

3. The potential for detection of radioactivity in material approved for release. Recycling companies currently reject any material that alarms a radiation detector. This is done because of the fear that the cause for such an alarm could be a dangerous source of radioactivity, such as an "orphaned source". Therefore, it is important that a complete understanding of the detectability of material acceptable for release be achieved.

4. The potential uses of such recycled material, taking into account the potential for contamination of human beings, animals, or the environment, as well as the acceptance, by affected industries and the general public, of such uses.

5. The potential to assure that such material could be used only for the purposes acceptable to the affected industries and the general public.

Other issues that would need to be considered include:

a) The amount of material potentially available for recycling and the time frames when it could become available.

b) The geographic locations where this material currently exists.

c) The means for determining that imported material meets the acceptance criteria.

In addition, an acceptable mechanism must be established to significantly assist any industry that has been compromised due to contamination from released material that did not meet the criteria for acceptable release.

STUDY

The affected stakeholders need to clarify and reach agreement on the various critical issues before an effective rulemaking effort can be undertaken. To facilitate this, the Commission should create an advisory task force whose members represent the affected stakeholders. These stakeholders include the entities that would release such material and the entities that would recycle such material. Such a task force would seek the input and involvement of the various government organizations that have direct authority over the key issues, the industries that would potentially use the recycled material to create useable products, and the general public who would directly use or be exposed to such products.

The goal of this advisory task force would be to report to the Commission on the criteria for the acceptable release, recycling, and reuse of solid material from licensed facilities. Such criteria would be achieved from the clarification of the critical issues, a review of all of the facts and a dialogue between stakeholders with a goal of achieving a consensus on the acceptable release, recycling, and reuse criteria.

CONCLUSION

ISRI believes that the recycling industry working together with government regulatory agencies and other affected stakeholders can clarify the factual issues on this topic and achieve a consensus on an acceptable release, recycling, and reuse criteria. ISRI is prepared to work with the Commission on all aspects of this proposed task force. Please feel free to contact me for further discussions or to answer any questions on this issue. You may reach me at telephone 202/662-8515, fax 202/626-0915 or via email at Mikemattia@ISRI.org.

Yours truly,

Michael Mattia
Director
Risk Management