
Managing Potentially Radioactive Scrap Metal (NCRP Report No 141), National Council on Radiation Protection and Measurements, Scientific Committee 87-4 on Management of Waste Metals Containing Radioactivity, 2002, 224 pp. (soft cover), \$45.00, National Council on Radiation Protection and Measurements, 7910 Woodmont Ave., Suite 400, Bethesda, MD 20814; ISBN 0-929600-74-6, www.ncrp.com.

RECENT PUBLIC, commercial, and regulatory interest has been elevated by reports of radioactivity found in scrap metals as well as common consumer products, such as table legs, shovels, and vinyl lead aprons used in medical x-ray facilities. The concerns and incidents have been reviewed in this journal (Lubenau and Yusko 1998) and have resulted in an American National Standards Institute/Health Physics Society standard (ANSI/HPS 1999) addressing the clearance of such materials from regulatory and radiological control. With Report No 141, *Managing Potentially Radioactive Scrap Metal*, the National Council on Radiation Protection and Measurements (NCRP) has published a comprehensive discussion of the release of potentially radioactive scrap metal (PRSM) and a series of recommendations on its management.

Report 141 consists of eight chapters, two appendices, a glossary, and a reference list. Chapter 1 provides an executive summary and presents the finding that the large amount of PRSM expected to come from decommissioned nuclear facilities requires the development of a clearance management strategy that is consistent in national and international viewpoints while being comprehensive in scope. The comprehensive scope should include addressing accelerator-produced and naturally occurring radioactive materials as well as by-product materials. Chapter 2 presents an introduction to the issues, the purpose of the report, and discusses the concept of *clearance*, the controlled release, where appropriate, of PRSM into the public domain where such materials would no longer be subject to regulation.

A discussion of sources, inventories and characteristics of PRSM in Chapter 3 illustrates the dimensions of the situation on PRSM disposition.

It is estimated that a total of up to nine million metric tons of scrap metal will be generated in the United States as a result of decommissioning and dismantling nuclear plants and facilities used in the exploration and extraction of natural resources. In Chapter 4, the NCRP reviews the current laws, regulations and policies for scrap metal disposition, with a brief analysis of current disposal practices.

Radiation protection principles and practices in management of the risks from PRSM appear in two chapters of the report. Chapter 5 discusses the radiation protection management framework for developing clearance standards and provides an overview of recent activities by national and international standards organizations. The radiation protection issues for exposures and risks at scrap-yards, mills and foundries during the processing of scrap metal are in Chapter 6. The discussion in Chapter 6 is supported by detailed information in the two appendices on metal-making technology and on radiation detection and surveillance practices.

A major perturbation to the issue of PRSM management is protection from orphan source contamination, the topic examined in Chapter 7. The inadvertent incorporation into the process stream of discarded devices and abandoned sealed sources of sometimes-significant radioactivity (orphan sources) is an issue of critical concern. The concerns are both a public health issue in the distributed metal product, and an economic issue due to contamination of the process facilities. While not the focus of this report, the NCRP does address relevant orphan source issues pertaining to recycling of PRSM. Five findings and eight recommendations to enhance the management and disposition of PRSM appear in Chapter 8.

This report incorporates into one volume an in-depth discussion of a contentious public and commercial issue that will grow as the pace of decommissioning increases. The recommendation to produce consistent national and international standards for PRSM management is fitting and based on accepted principles of justification and optimization. The report and its extensive reference list will be most useful for federal and state regulators seeking summary data to support the development of regulations on PRSM within their spheres of influence. The information in Chapter 6 and the appendices on radiation exposures and risks will be essential for those responders in

regulatory and health organizations who may be called to evaluate an incident of orphan source contamination in scrapyards, mills and foundries during the processing of scrap metal.

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REFERENCES

- American National Standards Institute/Health Physics Society.
Surface and volume radioactivity standards for clearance.
McLean, VA: ANSI/HPS; N13.12-1999; 1999.
- Lubenau JO, Yusko JG. Radioactive materials in recycled
metals—an update. *Health Phys* 74:293–299; 1998.
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