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LEAD SHIELDING FOR RADIOACTIVE WASTE IS A RCRA SOLID WASTE

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

4-30-91

Gaynor Dawson  
Vice President  
ICF Kaiser Engineers  
601 Williams Blvd., 4th Floor  
Richland, WA

Dear Mr. Dawson:

I am writing to respond to your August 17, 1990 letter requesting clarification of the circumstances under which lead shielding for radioactive waste is a solid waste under RCRA. In your letter, you refer to the June 26, 1987 correspondence between the Director of the office of Solid Waste, Marcia Williams, and Terry Husseman, Chair of the Northwest Interstate Compact Committee, which states in part: "... lead whose primary use is shielding in low-level waste disposal operations is not subject to Federal hazardous waste regulations when placed on the land as part of its normal commercial use." This policy is unchanged.

Most recently, this policy was echoed in the October 4, 1989 Agency guidance to NRC licensees, "Guidance on the Definition and Identification of Commercial Mixed Low-level Radioactive and Hazardous waste and Answers to Anticipated Questions." In question 6, on page 4 of the guidance, the issue is raised: "Are lead containers whose primary use is for shielding in disposal operations, hazardous waste under RCRA?" The first paragraph of the response follows:

No. While lead containers and lead container liners may exhibit the hazardous characteristic for lead, those containers whose primary use is for shielding in low-level waste disposal operations are not considered hazardous wastes and thus, are not subject to the hazardous waste rules. These same containers and liners if disposed of or discarded would be considered wastes and if they exhibit the hazardous characteristic, would be subject to the hazardous waste rules.

RO 13468

In summary, your statement that "... lead containers or container liners [are] not solid wastes when the radioactive waste [is] disposed because the lead shielding continue[s] to fulfill this intended use as shielding, is a correct interpretation of Agency policy. While the lead shielding is not a solid waste, we recommend that it be macroencapsulated prior to disposal in or on the land to prevent the shielding from leaching. When this is done, the environment will be protected from radiation by the lead shielding, and from the leaching of lead by the macroencapsulation of the entire waste package. Please note that this macroencapsulation is not required by the land disposal restrictions, but represents best management practice. Of course, if the shielding is no longer serving its intended use as a commercial product and is discarded, and exhibits a characteristic, it is a solid waste and must meet all Subtitle C requirements, including macroencapsulation before being placed in or on the ground.

Your letter asks several questions regarding lead shielding, some of which were discussed over the phone with Rod Larang of your staff. The first question asks if lead shielding for radioactive wastes is a solid waste when it is disposed under certain conditions.

The first condition is when the shielding is part of an object being disposed, and while necessary for radiation protection during waste handling prior to its disposal in or on the land, is not necessary for radiation protection after the object has been placed in or on the land. Since the shielding is not necessary for radiation protection once the object has been disposed, it becomes a solid waste upon disposal, and therefore must meet all applicable treatment standards.

The second condition concerns lead shielding that is part of a disposed waste package and is necessary for radiation protection after the object has been buried. Here, the lead shielding is fulfilling its intended use as a commercial product, and is not considered a solid waste.

The third condition involves the introduction of shielding during the packaging of radioactive waste in preparation for its disposal. As the lead shielding is necessary only during waste handling in this example, once the shielding is disposed, it becomes a solid waste.

The fourth condition concerns the introduction of shielding during the packaging of the radioactive waste for disposal; the shielding being

necessary for radiation protection after the waste package has been buried. Here the shielding is not a solid waste as long as it is fulfilling its intended use as a commercial 'Product.

Question two reads, "If lead shielding is a solid waste when placed for disposal, it is subject to 40 CFR 268 waste treatment standards (i.e., encapsulation for DOOS waste lead shielding), or are these standards inapplicable because the shielding is not a solid waste until disposal is completed?" As indicated above, if the lead shielding itself is discarded and is no longer fulfilling its intended use as a commercial product, it is a solid waste, and is subject to all applicable treatment standards.

Question three describes a situation where a waste package with nonencapsulated shielding disposed in the past is retrieved in the future in order to treat the waste. In this case, as long as the shielding is fulfilling its intended use, it is not a solid waste. Once the shielding is discarded, however, the shielding becomes a solid waste, as it would no longer be serving the function for which it was intended. As the land disposal restrictions apply prospectively, it is important to know when the shielding was discarded. If it was discarded before the applicable effective land disposal restrictions date for the RCRA hazardous waste, the land disposal restrictions would not apply until it was dug up.

Question four in your letter provides two more examples of the use of lead shielding: radioactive materials passing through a lead pipe, and nonradioactive materials being protected from a radioactive environment by lead. To respond to the subparts of question four, first, the abandonment of buried lead-lined piping which transported radioactive materials and the radioactively contaminated lead-shielded phone cable constitutes disposal of a solid waste. See 40 CFR 261.2 for the definition of solid waste. This lead would be subject to treatment standards under the Land Disposal Restrictions program. Lead contaminated with radioactivity must be macroencapsulated before disposal (55 FR 22628). The piping and cables are wastes once abandoned; redisposing the waste elsewhere would not affect its status as a solid waste. Again, because the land disposal restrictions apply prospectively, if the material was abandoned before the land disposal restrictions effective date for the hazardous waste(s), the land ban would not apply unless the material was dug up. Liability for the improper disposal of hazardous waste would occur immediately upon such disposal. Violations of the land disposal prohibitions may result in

the issuance of an order assessing a civil penalty for any past or current violation, requiring compliance immediately or within a specified time period, or both. (RCRA section 3008 (a)(1)). To reiterate, HSWA requires hazardous wastes to meet promulgated treatment standards prior to land disposal. Failure to meet these standards is a violation of HSWA.

Question 5 of your letter asks if, under Section 6001 of RCRA, federal agencies are immune from regulation by authorized states. Section 6001 of RCRA spells out clearly that any part of the Federal government engaging in waste disposal operations is subject to all federal, state, interstate, and local requirements. Moreover, Executive Order 12088 states that the Federal government will comply with all environmental statutes and regulations, including the environmental statutes and regulations of authorized states. Thus, under Section 6001 of RCRA, Federal agencies are not immune from regulation by authorized states.

We hope that this letter answers your concerns regarding the circumstances under which lead shielding for radioactive wastes is or is not a solid waste under RCRA. If you have further questions on this matter, please contact me.

Sincerely,

Richard Kinch, Chief  
Waste Treatment Branch