TWO MINUTE TRAINING

TO: *CH2M HILL PLATEAU REMEDIATION COMPANY*

FROM: *PAUL W. MARTIN, RCRA Subject Matter Expert*
CHPRC Environmental Protection, Hanford, WA

SUBJECT: *UNIVERSAL WASTE LAMPS AND PROHIBITION ON CRUSHING*

DATE: *DECEMBER 5, 2019*

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SUBJECT: Universal Waste Lamps and Prohibition on Crushing

Q: A universal waste (UW) handler (large or small) has accidentally broken lamp bulbs destined for recycling at a UW receiving facility. The UW receiving facility reminds the UW handler that unintentionally broken bulbs are recyclable, but intentionally broken bulbs, e.g., from a bulb crusher, are prohibited. The UW handler reviews the UW regulations and finds no specific wording prohibiting intentionally broken bulbs as UW but does find wording that a UW handler must minimize lamp breakage, which does not sound like an absolute prohibition on broken lamps. So where in the UW regulations does it state that intentional crushing of UW bulbs is prohibited?

A: The UW handler is correct that according to WAC 173-303-573 [*40 CFR 273*], "Standards for Universal Waste" and paragraph (20)(c)(ii) [*40 CFR 273.33(d)*], a UW handler must minimize lamp breakage. Paragraph (20)(c)(i) also states that a UW handler must cleanup and containerize UW lamps that show evidence of "leakage, spillage, or damage". The UW handler is also correct that explicit wording prohibiting crushing UW bulbs does not appear in WAC 173-303-573.

However, there is a prohibition at WAC 173-303-573(18)(b) [*40 CFR 273.31(b)*], that states:

"A large quantity handler of universal waste is:
Prohibited from diluting or treating universal waste, except by responding to releases as provided in subsection (24) of this section; or by managing specific wastes as provided in subsection (20) of this section."

Per WAC 173-303-040 [*40 CFR 260.10*], "Definitions", treatment can include physical processing of dangerous waste to make such wastes reduced in volume. Therefore, crushing of bulbs would be prohibited treatment. As clarified in the July 6, 1999, Federal Register on page 36477, section B.1.c. states:

"*In general, as explained in the preamble to the universal waste rule (60 FR 25519), the Agency does not believe that universal waste handlers, who are not required to comply with the full Subtitle C management standards, should treat universal wastes. Therefore, under today's rule, both small and large quantity handlers of universal waste lamps are prohibited from diluting or treating universal waste lamps except by responding to releases as provided in §§ 273.17 and 273.37. Prohibitions for small quantity handlers are found in § 273.11 and for large quantity handlers in § 273.31. The prohibition against treatment includes a prohibition of crushing of lamps.*"

Since treatment of UW is prohibited, and crushing is treatment, crushing of UW bulbs is prohibited.

SUMMARY:

- UW handlers are prohibited from treating universal waste.
- Crushing lamps meets the definition of treatment since the crushed bulbs would be reduced in volume.
- Since treatment of UW is prohibited, and crushing of bulbs is treatment, crushing of UW bulbs is prohibited.

Excerpts from WAC 173-303-040, WAC 173-303-573 and the July 6, 1999, Federal Register are attached to the e-mail. If you have any questions, contact me at Paul_W_Martin@rl.gov or at (509) 376-6620.

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WAC 173-303-040 Definitions.

When used in this chapter, the following terms have the meanings given below.

"Large quantity handler of universal waste" means a universal waste handler (as defined in this section) who accumulates 11,000 pounds or more total of universal waste (batteries, mercury-containing equipment, and lamps calculated collectively) or who accumulates more than 2,200 pounds of lamps at any time. This designation as a large quantity handler of universal waste is retained through the end of the calendar year in which 11,000 pounds or more total of universal waste and/or 2,200 pounds of lamps is accumulated.

"Treatment" means the physical, chemical, or biological processing of dangerous waste to make such wastes nondangerous or less dangerous, safer for transport, amenable for energy or material resource recovery, amenable for storage, or reduced in volume, with the exception of compacting, repackaging, and sorting as allowed under WAC 173-303-400(2) and 173-303-600(3).

WAC 173-303-573 Standards for universal waste management.

(18) Prohibitions.

A large quantity handler of universal waste is:

(a) Prohibited from disposing of universal waste; and

(b) Prohibited from diluting or treating universal waste, except by responding to releases as provided in subsection (24) of this section; or by managing specific wastes as provided in subsection (20) of this section.

(20) Waste management.

(c) Universal waste lamps. A large quantity handler of universal waste must manage universal waste lamps in a way that prevents releases of any universal waste or component of a universal waste to the environment, as follows:

(i) A large quantity handler of universal waste must immediately clean up and place in a container any universal waste lamps that show evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions. The container must be closed, structurally sound, compatible with the contents of the lamps, and must lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions;

(ii) A large quantity handler of universal waste must minimize lamp breakage by accumulating lamps in containers or packages that are structurally sound, adequate to prevent breakage, and compatible with the contents of the lamps. The containers and packages must remain closed and must lack evidence of leakage, spillage, or damage that could cause leakage under reasonably foreseeable conditions;

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B. Requirements for Handlers of Universal Waste Lamps

1. Prohibition on Treatment

a. Summary of Proposed Provision.

The Agency requested comments on the same prohibitions for generators and consolidation points that were proposed in the February 11, 1993 universal waste proposal. The Agency had proposed that generators of hazardous waste lamps and consolidation points managing hazardous waste lamps be prohibited from diluting or disposing of the lamps and from treating them except in response to releases.

The Agency requested comments on management practices for lamps, the risks posed by these practices, and appropriate technical controls to minimize these risks which would not inhibit collection and proper management. The Agency requested comment on whether requirements should be included in the final rule to minimize mercury emissions during storage and transport of the lamps.

The definition of treatment under RCRA (40 CFR 260.10) includes any method, technique or process designed to change the physical, chemical, or biological character or composition of any hazardous waste so as to neutralize such waste, or so as to recover energy or material resources from, or render such waste non-hazardous or less hazardous, safer to transport, store or dispose of, amenable for recovery, or storage, or reduced in volume. The crushing of spent mercury-containing lamps clearly falls within this definition. The Agency therefore requested comment on whether generators or consolidation points should be allowed to crush lamps intentionally to minimize volume for storage or shipment and which, if any, standards should be imposed to protect against mercury releases during crushing or the subsequent management of crushed lamps.

b. Summary of Comments Received.

Several commenters stated that the Agency should maintain its proposed prohibition on waste treatment, including lamp crushing. These commenters said that lamp crushers are a significant source of mercury emissions and that many lamp recyclers prefer to receive whole lamps. Other commenters stated that generators should be allowed to separate, consolidate, and crush their own lamps. Many commenters supported allowing crushing if it were safely performed, and some commenters stated that crushing is necessary to reduce storage and transportation costs. Information submitted to the Agency on drum top crushing systems for lamps indicates that there is a wide range of air emissions of mercury from these units, depending on the type of controls, and that in some units emissions of mercury exceed the OSHA limit of 0.05 mg/m3.

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c. *Agency's Response to Comments and Summary of Promulgated Standards.*

The Agency is adopting for universal waste lamps the prohibitions in the final universal waste rule promulgated on May 11, 1995. In general, as explained in the preamble to the universal waste rule (60 FR 25519), the Agency does not believe that universal waste handlers, who are not required to comply with the full Subtitle C management standards, should treat universal wastes. Therefore, under today's rule, both small and large quantity handlers of universal waste lamps are prohibited from diluting or treating universal waste lamps except by responding to releases as provided in §§ 273.17 and 273.37. Prohibitions for small quantity handlers are found in § 273.11 and for large quantity handlers in § 273.31. The prohibition against treatment includes a prohibition of crushing of lamps. EPA is particularly concerned that uncontrolled crushing of universal waste lamps in containers meeting only the general performance standards of the universal waste rule would not sufficiently protect human health and the environment. As stated earlier, the prevention of mercury emissions during collection and transport is one of the principal reasons that the Agency selected the universal waste approach. Allowing uncontrolled crushing would be inconsistent with this goal.

The Agency is aware that a number of states have already added spent lamps to their universal waste programs. Available information indicates that some of these state programs prohibit crushing of spent lamps, but that at least some state programs may allow crushing under regulatory requirements designed to control emissions of hazardous constituents, particularly mercury. The Agency believes that some state programs may include standards for controlling emissions from mercury containing lamps during crushing that could be equivalent, per RCRA Section 3006, to the federal prohibition.

Therefore, EPA will consider authorization of state programs that include provisions for controlling treatment or crushing of universal waste lamps, where the state program application includes a demonstration of equivalency to the federal prohibition. Factors the Agency would expect such an application to address include the effectiveness of technical requirements in controlling emissions of hazardous constituents, the level of interaction of regulated entities with the regulatory agency to ensure compliance with control requirements, and other factors demonstrating that the state regulatory program would be equivalent to the federal treatment prohibition.