



U.S. Department  
of Transportation

**Pipeline and  
Hazardous Materials Safety  
Administration**

400 Seventh Street, S.W.  
Washington, D.C. 20590

JUN 30 2006

Mr. Kurt Colborn  
Director, Technical Services  
MHF Logistical Solutions  
800 Cranberry Woods Drive, Suite 450  
Cranberry Township, PA 16066

Ref No. 06-0002

Dear Mr. Colborn:

This responds to your December 21, 2005, letter requesting clarification of the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180) applicable to Class 7 (radioactive) materials. Your questions are paraphrased and answered below:

- Q1. You ask whether an empty packaging is considered contaminated if survey readings exceed the levels in the definition of contamination in § 173.403, provided the packaging is not a conveyance.
- A1. The answer is yes. Any material, package, or packaging that exceeds both the activity concentration for exempt material and the activity limit for exempt consignments in § 173.436, or meets the definition of "contamination" in § 173.403, must be classed as a Class 7 (radioactive) material.
- Q2. You ask whether an empty conveyance (e.g., a gondola railcar), or bulk packaging large enough to be a conveyance (e.g., an intermodal or cargo container) would be regulated under the HMR if the contamination levels are below the levels specified in § 173.443(c).
- A2. See A1.
- Q3. You ask whether an empty gondola railcar, used to transport packages of Class 7 (radioactive) materials would be regulated under the HMR if the contamination levels are below those levels specified in § 173.443(c).
- A3. See A1.
- Q4. You ask whether an empty gondola railcar used to transport Class 7 (radioactive) materials and having a liner serving as a contamination barrier would be regulated under the HMR if the contamination levels are below those specified by § 173.443(c).
- A4. See A1.



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173.403  
173.443

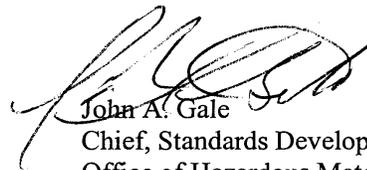
- Q5. You ask, for the purpose of choosing the appropriate contamination control limit, whether an intermodal or cargo container may be considered a conveyance, even if the containers are transported on a railcar for all or part of their transportation.
- A5. The answer is yes. For transport by public highway or rail, the term “conveyance” as defined in § 173.403 includes any transport vehicle or large freight container.
- Q6. You ask whether the contamination limits in § 173.443 apply to all conveyances, including those conveyances that are not used in “exclusive use” service.
- A6. The answer is no. The contamination limits in § 173.443 apply to: (1) conveyances used as the packaging for Class 7 (radioactive) material; (2) transport vehicles in “exclusive use” service; and, (3) closed transport vehicles used solely for the transportation of Class 7 (radioactive) material by highway or rail.
- Q7. You ask whether the shipper is responsible for complying with the contamination requirements for a “non-exclusive use” shipment. Additionally, you ask whether a post-shipment survey of conveyances used for “non-exclusive use” shipments is required.
- A7. Compliance with the HMR is the responsibility of both the shipper and the carrier. The shipper is responsible for ensuring the package and conveyance meet the contamination limits prior to transportation. The carrier and shipper may both be responsible for ensuring compliance with the contamination limits specified in § 173.443 during transportation, based on the specific scenario. The HMR do not require post-shipment surveys of conveyances, used for “non-exclusive use” shipments.
- Q8. You ask whether contamination limits on the surface of a package, empty packaging, or conveyance are restricted to those limits specified in §§ 173.403 and 173.443.
- A8. The definition of contamination in § 173.403 applies to radioactive contamination on the surface of any inherently non-radioactive material and includes the surface of a package, empty packaging, or conveyance. The contamination limits in § 173.443 are upper contamination limits for packages and transport vehicles.
- Q9. You ask whether a single measurement of contamination, performed with an appropriate instrument, may be conducted in lieu of separate measurements for fixed and non-fixed contamination.
- A9. The answer is no. You must comply with the limits for both fixed and non-fixed radioactive contamination. Separate measurements are necessary to verify compliance with both contamination limits.

Q10. You ask whether the terms “general use” and “unrestricted release” regarding a conveyance that is below the contamination limits in § 173.443 means that the conveyance is no longer subject to the HMR.

A10. The terms “general use” and “unrestricted release” are not defined by the HMR. A conveyance that meets the definition of “radioactive material” or “contamination” in § 173.403 is regulated by the HMR as a Class 7 (radioactive) material.

I hope this information is helpful.

Sincerely,

A handwritten signature in black ink, appearing to read 'John A. Gale', is written over the typed name.

John A. Gale  
Chief, Standards Development  
Office of Hazardous Materials Standards



Eichenlaub  
§173.403  
§173.443  
Definitions/RAM  
06-0002

800 Cranberry Woods Drive, Suite 450, Cranberry Township, PA 16066 T 724.772.9800 F 724.772.9850 W [www.mhfs.com](http://www.mhfs.com)

Mr. Edward Mazzullo  
Director of Hazmat Standards  
USDOT/PHMSA, Suite 8422  
Office of Hazardous Materials Safety  
400 7<sup>th</sup> Street, SW  
Washington, DC 20590-3012

December 21, 2005

SUBJECT: Clarification of the Contamination Limits of 49 CFR 173.403 and 173.443

Dear Mr. Mazzullo,

This letter requests clarification of the limits on radioactive contamination limits for packages and conveyances as described in the definition of contamination in 49 CFR 173.403, and in the contamination control provisions of 49 CFR 173.443.

#### BACKGROUND

We cite the following information in this request for clarification (attached):

- a. DOT Interpretation Reference 00-0304: Indicates that a railcar used to transport radioactive materials can be released for general use if the contamination limits of 173.443(c) are met {less than 0.5 mrem/hour and less than 4 Bq/cm<sup>2</sup> beta-gamma and low-toxicity alpha, 0.4 Bq/cm<sup>2</sup> other alpha}.
- b. Page 3643 of the January 26, 2004 Federal Register, preamble to the Harmonization Rules: States that a conveyance must be released and surveyed in accordance with 173.443(c) prior to unrestricted release.
- c. DOT Interpretation Reference 05-0094: States that (A6) an empty container contaminated above the limit of 173.403 {4 Bq/cm<sup>2</sup> beta-gamma and low-toxicity alpha, 0.4 Bq/cm<sup>2</sup> other alpha} must be transported in accordance with 173.428.

The cited information [c.] suggests that an empty container contaminated above the limits of 173.403 must either be considered a surface contaminated object or be shipped as empty in accordance with 173.428. That is, a contaminated (above 173.403) empty container is subject to the requirements of the hazardous materials regulations (HMR).

However, if the container is a conveyance (e.g. an intermodal, cargo container, or railcar) it can be released for unrestricted use if contamination is up to 10 times the 173.403 contamination limit (and remains below the contamination and dose limits of 173.443 as indicated in a. and b.).

### REQUESTED CLARIFICATIONS

Please confirm the following interpretation of the cited regulations:

1. An empty packaging is considered contaminated if survey readings exceed the levels in the definition of contamination of 173.403, provided that the packaging is not a conveyance.
2. An empty conveyance (e.g. a gondola railcar), or bulk packaging large enough to be a conveyance (e.g. an intermodal or cargo container) is not considered contaminated until the levels of 173.443 are reached, and is exempt from further regulation by the HMR below those levels.
3. An empty gondola railcar, used to ship radioactive material packages is exempt from further regulation under the HMR if contamination levels are confirmed to be below those required by 173.443(c).
4. An empty gondola railcar used to ship radioactive materials within a liner serving as the barrier to contamination (such as a Super Load Wrapper<sup>TM</sup>) is exempt from further regulation under the HMR if contamination levels are confirmed to be below those required by 173.443(c).
5. Intermodal and cargo containers can be considered conveyances for the purposes of choosing the appropriate contamination control limit, even if these containers are transported on a railcar for all or part of their transportation.
6. The contamination limits of 173.443 apply to conveyances regardless of whether the conveyance was used in an exclusive use shipment in accordance with 173.443(b) [an apparent prerequisite of 173.443(c)].
7. Compliance with the contamination requirements for a non-exclusive use shipment is the shipper's responsibility. Post-shipment surveys of conveyances used for general shipping [non-exclusive use, not utilizing the provisions of 173.443(b)] are not required, and may be performed at the consignee's discretion.

8. Contamination levels in 173.403 and 173.443 are limits on contamination on the surface of the package, empty packaging, or conveyance. The default factor for determining non-fixed surface contamination is 10 times the level measured on the wipe.
9. Contamination, as defined in 173.403, can be measured by a direct reading with an appropriate instrument; separate fixed and non-fixed measurements are not required.
10. The terms “general use” and “unrestricted release” as used in references a. and b. above both mean “*for general use in commerce, exempt from further regulation under the HMR*”. Please confirm these terms do not mean “*free from exclusive use controls, but still subject to the requirements of the HMR*”.

In addition to the cited clarifications and references, a copy of a parallel request to the NRC for clarification is also attached to this letter.

Please feel free to contact me at (724) 772-9800, ext. 5560 if you have any questions about this request. Thank you for your assistance.

Respectfully submitted,



Kurt Colborn  
Director, Technical Services  
MHF Logistical Solutions

cc:

Envirocare of Utah: Jeff Gardner  
US NRC: Dan Gillen, Dominic Orlando  
US DOT PHMSA: Rick Boyle, Fred Ferate