



U.S. Department
of Transportation

**Pipeline and Hazardous
Materials Safety
Administration**

1200 New Jersey Avenue, SE
Washington, D.C. 20590

JUL 3 1 2013

Mr. W.A. Winters
Regulatory Resources, Inc.
167 Keene Road
Richland, WA 99352

Ref No.: 13-0101

Dear Mr. Winters:

This is a response to your May 9, 2013 email requesting clarification of the Hazardous Materials Regulations (HMR; 49 CFR Parts 100-185) with regard to the transportation of Class 7 radioactive materials. Specifically, you seek clarification on the requirements for non-fixed radioactive contamination in § 173.443 and low specific activity (LSA) materials in § 173.427. Your questions and PHMSA's responses are summarized below:

Q1. Does the presence of non-fixed radioactive contamination on the external surface of a package, within the limitations provided in § 173.443, violate the general packaging requirement in § 173.24(b)(1) that there should be no identifiable release of hazardous materials to the environment?

A1. The answer is no. Section 173.24(b)(1) states that, except as otherwise provided in this subchapter, each package used for the shipment of hazardous materials shall be designed, constructed, maintained, filled, its contents so limited, and closed, so that under conditions normally incident to transportation there will be no identifiable release of hazardous materials to the environment. The contamination controls in § 173.443 require that the level of non-fixed (removable) radioactive contamination on the external surface of each package must be kept as low as reasonably possible. The limits described in this section prescribe activity limits deemed safe for transportation and for which general packaging requirements in § 173.24 cannot encompass.

Q2. Does the presence of non-fixed radioactive contamination on the external surface of a package, within the limitations provided in § 173.443, supersede the general packaging requirement in § 173.24(b)(4) that there should be no hazardous material residue adhering to the outside of the package during transport?

A2. The answer is yes. The contamination controls in § 173.443 state that the level of non-fixed (removable) radioactive contamination on the external surface of each package must be kept as low as reasonably possible. The limits described in this section prescribe activity limits deemed safe for transportation and for which general packaging requirements in § 173.24 cannot encompass.

Q3. Does the term “any package” as used in the contamination control requirements in § 173.443(b) limit the application to a specific package type or material of construction?

A3. The answer is no. This section applies to any packages, regardless of type or material of construction, transported as exclusive use shipments by rail or public highway only.

Q4. Does the requirement in § 173.427(a)(6)(ii) prohibiting loose radioactive material in the conveyance prohibit the transportation of unpackaged LSA radioactive materials in the same conveyance as packaged LSA radioactive materials? You provide the example of a conveyance loaded with both LSA-II material contained in an industrial packaging (IP) and in addition, unpackaged LSA-I loaded directly into the conveyance, which is authorized as packaging for the LSA-I material.

A4. The answer is yes. In the scenario you describe, unpackaged LSA radioactive materials and packaged LSA radioactive materials may not be in the same conveyance. The provisions of § 173.427(a)(6)(ii) state that there may be no loose radioactive material in the conveyance. Non-fixed radioactive contamination on packages within the limits allowed by § 173.443 would not be prohibited by § 173.427(a)(6)(ii).

Q5. Provided the conveyance is authorized as a packaging for LSA materials, including loose material as contents, would the packaging as described in the scenario in Q4 meet the requirements of § 173.427(a)(6)(ii), provided there was no leakage of material from the conveyance?

A5. See A4. Provided the conveyance is authorized as the packaging for the LSA radioactive materials being transported, including the unpackaged LSA materials, if the provisions of § 173.427(c) are met and there was no leakage of material from the conveyance this satisfies the requirement in § 173.427(a)(6)(ii).

Q6. Do the requirements applicable to LSA and surface contaminated objects (SCO) in § 173.427(a)(6) supersede the contamination control limits applicable to non-fixed radioactive contamination on the outside of a package or vehicle surface found in § 173.443?

A6. The answer is no. As specified in § 173.427(a)(4), shipments of LSA and SCO radioactive materials must adhere to the contamination control limits specified in § 173.443.

Q7. Would marking and labeling of packagings with the UN identification number, proper shipping name and label applicable to exclusive use shipments of LSA and SCO material be permitted if they are marked in accordance with the requirements in § 173.427(a)(6)(vi)?

A7. The answer is yes. Though packaged and unpackaged Class 7 radioactive materials are excepted from the requirements of marking and labeling when

transported in accordance with § 173.427(a)(6)(vi), shippers may permissively mark and label.

Q8. What is the role of the States in the enforcement of hazardous materials transportation?

A8. In your incoming email, you provide examples of scenarios concerning a State's enforcement of radioactive materials transportation, such as the use of the term "any package," as stated in § 173.443(b) being limited to metal casks only. Additionally, you cite the example of a State not permitting the non-fixed radioactive contamination limits specified in § 173.443(b) for exclusive use shipments, and only permitting contamination levels authorized in § 173.443(a), for shipments not being transported under exclusive use provisions. Furthermore, you note a State's interpretation of the term "loose radioactive material" as used in § 173.427(a)(6)(ii) to mean non-fixed radioactive contamination.

States are encouraged to adopt and enforce the requirements in the HMR as State requirements (i.e., State law or regulations). Federal Hazardous Materials Transportation Law (49 USC § 5125(a)) preempts a State requirement when (1) it is not possible to comply with both the HMR and the State requirement, or (2) the State requirement is an "obstacle" to accomplishing and carrying out Federal hazmat law or the HMR. Furthermore, 49 USC § 5125(b) sets forth areas where State requirements may not have any substantive differences from Federal Hazardous Materials Transportation Law and the HMR.

The HMR outlines how to transport hazardous materials in commerce – and provides that any other way is prohibited. Therefore, preemption issues arise whenever a State enforces its requirements in a way that narrows an authorization in the HMR for transporting a hazardous material in commerce (i.e., does not allow something that the HMR does allow). These issues may be addressed and resolved through an administrative determination by PHMSA. The purpose of this is to determine whether Federal Hazardous Materials Transportation Law preempts the State requirement in response to an application by a person directly affected by the State requirement (49 USC § 5125(d)). The procedures for applying for an administrative preemption determination are set forth in subpart C of part 107 in the 49 CFR (§ 107.201 et seq.).

I hope this information is helpful. If you have any more questions, please do not hesitate to contact this office.

Sincerely,



Robert Benedict
Chief, Standards Development
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May 9, 2013

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Mr. Charles E. Betts
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Dear Mr. Betts,

Thank you in advanced for your time with these questions concerning Class 7 (radioactive) materials.

1. With regard to Class 7 (radioactive) materials, is my understanding correct that as long as the package containing the Class 7 (radioactive) material has performed its containment function as designed and upon inspection shows no evidence of damage or loss of integrity, the presence of non-fixed radioactive contamination on the external surface of the package within the allowed limits of § 173.443 is not in violation of § 173.24(b)(1)?
2. With regard to Class 7 (radioactive) materials, is my understanding correct that the *"no hazardous material residue adhering to the outside of the package during transport"* regulation as prescribed in § 173.24(b)(4) is qualified and quantified by the authorized external non-fixed contamination limits of § 173.443? Hence, external non-fixed radioactive contamination remaining on the external surface(s) of its package is allowed, without regard to § 173.24(b)(4), if within the limits stated in § 173.443.
3. With regard to external non-fixed radioactive contamination on a package of Class 7 (radioactive) material shipped exclusive use, is my understanding correct that the term *"any package"* as seen in § 173.443(b) means exactly what it states and does not limit the application to only one package type and material of construction?
4. Is my understanding correct that the § 173.427(a)(6)(ii) requirement *"there may be no loose radioactive material in the conveyance"* is not referring to whatever non-fixed radioactive contamination is present as allowed by § 173.443, but rather is specifically prohibiting unpackaged, loose radioactive material from being loaded into the conveyance with packaged material (as clarified by the example below)?

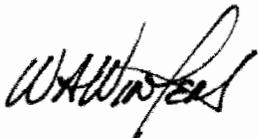
A Low Specific Activity (LSA) material categorized as LSA-II is placed inside an authorized Industrial Package (IP). The IP is loaded onto a conveyance which itself is not the Class 7 (radioactive) package. The conveyance is to be shipped exclusive use. Radioactively contaminated soil that meets the activity limit for LSA-I is placed directly onto the conveyance. This soil does not benefit from any additional packaging; the soil meets all conditions to be unpackaged per § 173.427(c). A means of containment is placed on the conveyance that prevents leakage of radioactive material from the conveyance. This configuration is prohibited per § 173.427(a)(6)(ii) since the conveyance (which is not "the package") contains loose (i.e., uncontained) radioactive material.

May 9, 2013
Page 2

5. Is my understanding correct that, given the example in question 4, if the conveyance itself were the authorized package for both materials (contained and loose), the transport configuration would be acceptable under § 173.427(a)(6)(ii) as long as there was no leakage from the conveyance?
6. With regard to the transport of LSA material (and surface contaminated objects (SCO)), is my understanding correct that the § 173.427(a)(6)(ii) requirement that *"there may be no loose radioactive material in the conveyance"* is directed to unpackaged radioactive materials and in no way overrides or nullifies the external package and vehicle surface non-fixed radioactive contamination limits of § 173.443 as references in § 173.427(a)(4)?
7. With regard to the transport of LSA material (and SCO) under exclusive use conveyance and in compliance with § 173.427(a)(6), is my understanding correct that the display of the applicable proper shipping name and identification number on the package is not prohibited when the package is marked as specified in § 173.427(a)(6)(vi)?
8. With regard to the transport of LSA material (and SCO) under exclusive use conveyance and in compliance with § 173.427(a)(6), is my understanding correct that the display of the Class 7 labels on the package in conformance with § 172.403 is not prohibited when the package is marked as specified in § 173.427(a)(6)(vi)?
9. With regards to a State's authority in enforcing the Hazardous Materials Regulations (HMR), is my understanding correct that a State cannot be more conservative in their "interpretation" than what is already covered and allowed by the HMR. For example, by limiting "any package" as stated in § 173.443(b) to metal casks only? For example, by not recognizing the non-fixed radioactive contamination limits as specified in § 173.443(b) for exclusive use shipments and mandating enforcement to § 173.443(a) levels only? For example, by stating "loose radioactive material" as specified in § 173.427(a)(6)(ii) applies to non-fixed radioactive contamination thereby overriding §§ 173.427(a)(4) and 173.443?

Thank you again.

For Regulatory Resources, Inc.,



W. A. Winters, CET, CHMM
President

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