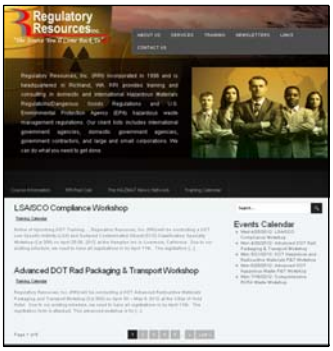
# THE HAZMAT NEWS NETWORK

**Regulatory Resources, Inc. 167 Keene Road Richland, WA 99352**

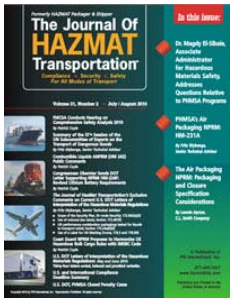
Voice: 509-628-1020 — Fax: 509-628-0972 — email: newsletter@regulatoryresources.net — www.regulatoryresources.net — **Spring 2012**

**WHEW, WHAT A RIDE!** Well, we're finally back in the saddle and setting up for the spring/summer/fall training drive. Welcome to the Spring 2012 edition of our newsletter. We used to be (or tried to be) monthly but time just keeps passing by too fast. So we're now striving for at least a quarterly newsletter with "special editions" at times. This newsletter is free and available to anyone who would like to receive it. Please forward this to others you think will benefit. And away we go…

**WE HAVE A NEW WEBSITE UP AND RUNNING** with all our currently scheduled training classes listed and all the information you need to find out about the workshop and get registered. I'll be talking more about what we're offering. Check us out at www.regulatoryresources.net.




**THIS IS WORTH REPEATING.** Do you really have the time to check out the Federal Register each day? Are you keeping abreast of what's happening, or better yet, what will be happening in the packaging and transport world? Yeah, me neither. Let's fix this.




You need to look up *"The Journal of HAZMAT Transportation"*; a publication that dedicates itself to the domestic and international hazardous materials regulations. It's not free but I'll bet a good dinner that a subscription will pay for itself just in the labor time you'd spend researching all the information, let alone getting the "how to apply it". Visit their website at: www.hazmatship.com.

**LET'S TALK TRAINING FOR A MINUTE.** We currently have five workshops schedule with at least three more in the planning stages.

- LSA/SCO Compliance Workshop: April 25-26 in Livermore, CA
- Adv DOT Rad P&T Workshop: April 30-May 4 in Santa Fe, NM
- DOT Hazmat/Rad P&T Workshop: May 21-24 in Santa Fe, NM
- Adv DOT Waste P&T Workshop: June 25-29 in Santa Fe, NM
- Comprehensive RCRA Workshop: July 16-20 in Santa Fe, NM

On the "get scheduled" list yet is our DOT Explosives Course, Advanced Hazmat P&T Workshop, and IATA/ICAO DG and Rad Courses. Keep an eye on our website for these course dates soon!

**IT'S TIME AGAIN TO REVIEW THE DEFINITION** of bulk packaging as it applies to Class 7 (radioactive) materials. I consistently get deer-in-the-headlight looks from folks who just can't seem to understand this definition. Sadly, it appears that maybe even some at PHMSA are skating over it as well. For example, in the second column, second paragraph of page 50340 of the August 12, 2011 NPRM, HM-250 (Class 7 docket), PHMSA states:

*"PHMSA proposes to rearrange the wording in paragraph (b)(4), to indicate that for an exclusive use shipment of less than an A2 quantity, the packaging should meet the requirements of § 173.24a or § 173.24b, depending on whether the packaging would be considered non-bulk or bulk according to the definition in § 171.8. For the most part this distinction is irrelevant for radioactive material packages, but there are some cases, such as LSA liquids transported in portable tanks, where the bulk-packaging requirements are more appropriate."* [emphasis added]

We don't agree with PHMSA's opinion that, for the most part, bulk packaging is irrelevant for radioactive materials. We believe that PHMSA is not applying definitions as required by the HMR. We find this to be particularly of interest in this docket since PHMSA is specifying more clearly the required information a shipper is to retain for Type A packages, emphasizing greatly the need to identify each item of the containment system and any damage to any component of the containment system as a result of performance tests (proposed §173.415(a)).

General Definitions (§171.8). Let's take a quick look at the hierarchy for how terms are defined in Figure 1.

Figure 1. Example of the Hierarchy of Defined Terms

| | |
|---|---|
| Section 5102 | The Federal Hazardous Materials Transportation Law |
| 49 CFR 172.504(g) | The Paragraph |
| 49 CFR 178.338-1(a) | The Section |
| 49 CFR 173.403 | The Subpart |
| 49 CFR 178.2(d) | The Part |
| 49 CFR 171.8 | The HMR |
| A recognized dictionary | |

Unless specifically stated, all terms and definitions in §171.8 apply to the entire "subchapter" which consists of Parts 171 through 180. The definitions for "bulk packaging" and "non-bulk packaging" are located in this section and are not redefined in §173.403 nor excepted in §171.8. Therefore, the bulk/non-bulk definition in the General Definition section applies equally to packages for Class 7 material. The next important term to look at is "containment system". This term is specific to Class 7 material and defined in §173.403. As defined, *containment system* means the assembly of components of the packaging intended to retain the Class 7 (radioactive) material during transport. This is important and we'll come back to it.

# THE HAZMAT NEWS NETWORK

**Regulatory Resources, Inc. 167 Keene Road Richland, WA 99352**

Voice: 509-628-1020 — Fax: 509-628-0972 — email: newsletter@regulatoryresources.net — www.regulatoryresources.net — **Spring 2012**


The next important definition is "intermediate form of containment". The application of the "intermediate form of containment" appears to be the element of confusion because it is not specifically defined itself. The following attempt to clarify the application of the phrase "intermediate form of containment" as it applies to the definition of bulk packaging is based from letters issued by the PHMSA as early as 1994. Because the definitions for bulk and non-bulk packagings are not excluded or excepted for Class 7 radioactive materials, the responses provided by PHMSA to non-radioactive contents do not alter the application of the definition of the packaging type when applied to Class 7 radioactive content. RRI has been unable to find any reference or statement in the regulations, including preamble discussions in proposed and final rules, which provide an avenue for packagings used for Class 7 radioactive materials to escape the application of the definitions of bulk and non-bulk packagings. In fact, the definition of "containment system" in §173.403 supports PHMSA's letters.

Based on our research, RRI concludes the phrase "intermediate form of containment" in the definition of bulk packaging applies only when the intermediate form of containment is a designed packaging system, such that, removal of the inner packaging system or any change in its configuration would invalidate the use of the package.

Type B packagings (and Type AF) are designed with a containment system. The issue is not in the exclusion of Type B (and Type AF) designs from the definition of bulk packaging, but the inclusion of many Type A packaging designs (and many Type IPs). The Type A packaging design must take into account a containment system (see Table 1). The term "containment system" is defined in §173.403 to mean: "[T]he assembly of components of the packaging intended to retain the Class 7 (radioactive) material during transport." It is absolutely essential to recognize that this definition applies to EACH packaging used for any DOT regulated quantity of Class 7 radioactive material.

| 49 CFR 173.412 Type A Packaging | Containment System Specific | Packaging as a Whole |
|---|---|---|
| (a) Tamper indicating device | | X |
| (b) Smallest external dimension | | X |
| (c) Containment and shielding maintained at temperatures | X | X |
| (d) Containment system is required (positive fastening device) | X | |
| (e) Radiolytic decomposition accounted for | X | |
| (f) Pressure reduction to 25 kPa (proposed 60 kPa) | X | X |
| (g) Valve and pressure relief device retaining leakage | X | X |
| (h) Radiation shield design | X | X |
| (i) Tie down attachments | | X |
| (j) Performance Tests: Loss of Content | | X |
| (j) Performance Tests: Dispersal of Content | X | |
| (j) Performance Tests: Increase in Dose Rate | | X |

Table 1

Unlike Type B and AF packagings, however, the containment systems for some Type A designs is the packaging itself without the benefit of any inner packaging system. For example, a 55-gallon drum or large waste box (end dump) may be designed to function as Type A package without any inner containment (i.e., packaging) system. In these designs, the packaging itself is both the containment system and package. Therefore, the drum or large box must meet all design requirements of 173.412(a)-(i). Performance testing is always conducted on the "package" and is separate from the 'design' requirements. For packages designed without the benefit of an inner packaging system, failure of the design will result in: (1) loss of content; or (2) significant increase in dose rate.

Other Type A packages are designed with a specified inner packaging system (i.e., containment system) that is an integral part of the packaging. A good example of this is a Type A box used for a radiopharmaceutical. The medicine is located in an inner packaging system that fulfills the "containment system" requirements of §173.412. The containment system is placed into the packaging. The entire 'package' assembly is performance tested. In this packaging design there are three opportunity for failure after testing: (1) dispersal of content; (2) loss of content; or (3) significant increase in dose rate. The criterion, "dispersal of content", applies to a failure of the containment system and is not contingent upon loss of content from the package.

We have often listened to those who state that large (>450 liters) Type A boxes used for Class 7 radioactive material are neither bulk nor non-bulk packagings. How can this be? Where is it supported by regulation? Some argue that the liner (i.e., large poly bag) in the box provides the "intermediate form of containment". And yet the content is not restricted – dirt, rocks, pipe, steel supports, concrete, etc. If the liner is the intermediate form of containment, it must meet the §173.403 definition of "containment system". This being the case, the liner must then also meet all "containment system" requirements (Table 1). This is not possible. How can a liner be used as the intermediate form of containment in the definition of bulk packaging and yet not be the containment system based on the design of the packaging? This certainly sounds like compliance by convenience. Review PHMSA issued letters on the application of the definition of bulk packaging. Repeatedly, PHSMA states that inner packagings placed in a bulk packaging, even if for containment of the content, does not alter the definition of bulk packaging. And why is this opinion presented each time…because the intermediate form of containment employed is not a function of a designed containment system for the bulk packaging.