



U.S. Department
of Transportation

**Pipeline and
Hazardous Materials Safety
Administration**

DEC 13 2005

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

Mr. Wade Winters
Regulatory Resources, Inc.
240 Joshua Road
Kennewick, WA 99338

Ref. No. 05-0279

Dear Mr. Winters:

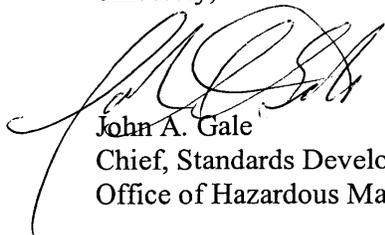
This is in response to your November 1, 2005 letter requesting clarification of the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180). Specifically, you request clarification on the free drop test for Type 7A packages specified in § 173.465(c).

It is your understanding that center of gravity over impact point testing is not a required drop test orientation for a Type 7A package, unless such an orientation would impart maximum damage to the package.

Your understanding is correct. A Type 7A package, with its contents, must be capable of withstanding a free drop test. The specimen must drop onto the target so as to suffer maximum damage to the safety features being tested. The person conducting the free drop test must determine the orientation that will produce the maximum damage.

I hope this information is helpful. Please contact us if you require additional assistance.

Sincerely,



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



050279

173.465(e)



Leary
§ 173.465 (c)
Test
05-0279

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Kennewick, WA 99338
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November 1, 2005

Ms. Susan Gorsky
Office of Hazardous Materials Standards
Pipeline and Hazardous Materials Safety Administration
U.S. Department of Transportation
PHH-10
400 Seventh Street, SW
Washington, DC 20590

Dear Ms. Gorsky,

Regulatory Resources, Inc. (RRI) is a consulting and training company serving clients subject to the Department of Transportation (DOT) Hazardous Materials Regulations (HMRs) and the Environmental Protection Agency (EPA) solid and hazardous waste management regulation. One of our specialty areas covers the regulations for the safe transport of radioactive materials. Various Class 7 packaging questions have been raised in recent training classes and I'm seeking PHMSA's clarification on these. RRI is seeking PHMSA concurrence as to the intent of 'maximum damage' concerning Type A package drop tests. We do not believe that orientation for maximum damage is the same as requiring the package to be drop test oriented with its center of gravity over the point of impact.

The 49 CFR 173.465(c), Type A packaging tests, Free drop test, states that the package containing non-fissile solids must be dropped onto the target (e.g., unyielding surface) so as to suffer the maximum damage to the safety features being tested. Paragraph (c)(1) identifies the required free drop distance based on package mass. This drop test requirement is a test performed to simulated 'normal conditions of transportation'. The purpose of this test is to reproduce the type of shock and damage that could be experienced if the package were to fall off a vehicle or loading dock, or if were to be dropped during normal handling. The test is not designed to simulate vehicle accident situations or accident type handling occurrences.

The objective of the Type A package drop test is to inflict 'maximum damage' to evaluate the package features such as structural components, containment systems, closures, and shielding configurations and properties. To achieve maximum damage the package may require several drops in varying drop configurations, however, all possible drop orientations need not be considered providing that these drop orientations are not possible under normal conditions of transport. Naturally, these determinations must be documented by the package designer and/or test engineer. As stated by the IAEA in TS-G-1.1, 1722.6:

"During the revision process leading to the 1996 edition of the Regulations, it was agreed that all possible drop test orientations need not be considered when conducting the drop test for normal conditions of transport. Providing that it is not possible under 'normal' conditions for the package to be dropped in certain orientations, these orientations could be ignored in assessing the worst damage. It was envisaged that this relaxation would only be allowed for large dimension and large aspect ratio packages. In addition this relief would require documented justification by the package designer."



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Ms. Susan Gorsky
November 1, 2005
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For example, a package with a relatively large aspect ratio (e.g., 4' wide x 4' high x 25' long) must be tested and evaluated based on its normal loading and handling configuration so that maximum damage is attained. Some users of Type A radioactive materials packagings require the manufacturer to test the package with its center of gravity over the point of impact. The result of such test may be beyond any normal condition of transport as this orientation may not be within the scope of the design for the handling and transport configuration of the package. Clearly, such a drop configuration will subject secondary impacts that far exceed any normal condition drop test requirement.

RRI seeks PHMSA concurrence that center of gravity over impact point testing, based on the design of the package as documented by the design and/or test engineers, is not the same as the requirement to test the package so that 'maximum damage' is imparted to the package under normal conditions of transport. Furthermore, we believe that center of gravity over impact point testing is not a required drop test orientation unless such package orientation would, in fact, impart maximum impairment to the integrity of the package under normal condition of transport.

Thank you for your time in these matters. Please contact me if I can answer any questions.

For Regulatory Resources, Inc.,

A handwritten signature in black ink, appearing to read 'Wade A. Winters', is written over a horizontal line.

Wade A. Winters, CET, CHMM
President

WAW/lom