



U.S. Department  
of Transportation  
**Research and  
Special Programs  
Administration**

FEB 14 2003

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

Mr. J. M. Atwood  
Manager, Waste Management/Transportation  
Bechtel Hanford, Inc.  
3350 George Washington Way  
Richland, WA 99352

Reference No. 03-0013

Dear Mr. Atwood:

This is in response to your letter dated January 13, 2003 requesting a clarification of the packaging requirements for Uranium metal, pyrophoric, UN2979, under the Hazardous Materials Regulations (49 CFR Parts 171-180). Specifically, you ask what test criteria must the packaging configuration meet.

Section 173.418 requires pyrophoric Class 7 (radioactive) materials in quantities not exceeding  $A_2$  per package to be transported in DOT Specification 7A packagings constructed of materials that will not react with, nor be decomposed by, the contents. In addition, the contents of the package must among other things be inerted to prevent self-ignition during transport by either:

- (1) Mixing with large volumes of inerting materials, such as graphite, dry sand, or other suitable inerting material, or blended into a matrix of hardened concrete; or
- (2) Filling the innermost receptacle with an appropriate inert gas or liquid.

In your letter, you stated that your depleted uranium is packaged in small drums (nominally 30 gallons) filled with mineral oil as a liquid inerting agent. You further stated that, the small drum is then placed inside a larger (nominally 55 gallons) DOT Specification 7A package. Therefore, your DOT Specification 7A package must conform to the Type A packaging tests prescribed in §§ 173.465 and 173.466.

I hope this satisfies your request.

Sincerely,

Hattie L. Mitchell, Chief  
Regulatory Review and Reinvention  
Office of Hazardous Materials Standards



030013

173.418



Job No. 22192  
Written Response Required: NO  
Due Date: N/A  
Action: N/A  
Closes CCN: N/A  
OU: N/A  
TSD: N/A  
ERA: N/A  
Subject Code: 8515

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§ 173.418

RAM

03-0013

JAN 13 2003

Mr. Edward T. Mazzullo  
Director, Office of Hazardous Materials Standards  
U.S. DOT/RSPA (DHM-10)  
400 7th Street S. W.  
Washington, D.C. 20590-0001

Subject: **INTERPRETATION OF 49 CFR 173.418**

Dear Mr. Mazzullo:

In order to ensure that we are conducting our transportation activities in a compliant manner, we would like to request written clarification of the regulations for packaging ~~Uranium Metal~~, ~~Pyrophoric~~.

Specifically, we are packaging depleted uranium chips and turnings that are considered to be pyrophoric. The depleted uranium is packaged in small drums (nominally 30 gallons) filled with mineral oil as a liquid inerting agent. The mineral oil does not meet the DOT definition of a radioactive material (i.e., it is less than 70 Bq/gram). However, it is slightly contaminated with radioactive material. The small drum is then placed inside a larger (nominally 55 gallons) DOT specification 7A container. All of this is intended to be in full compliance with 49 CFR 173.418.

~~At issue is what test criteria the packaging configuration must meet.~~ Three different scenarios have been put forward, either by the regulated community, or by the help line. These are:

- 1) The material being shipped is a solid. The liquid has been added for purposes of packaging safety. Therefore, the package must meet the test requirements for a solid. The package is considered to meet the test requirements if there is no loss of radioactive materials (i.e., solids) during the testing [reference 49 CFR 173.461(a)(1) states: "... must simulate as closely as practicable the expected range of physical properties of the *radioactive* contents..." (emphasis added)]. This is similar to shipping a non-radioactive pyrophoric material that has been inerted with a liquid material (e.g., Zirconium Powder Wetted has a packaging reference of 173.213).

E. T. Mazzullo

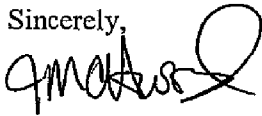
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- 2) The material being shipped is a solid. The liquid has been added for purposes of packaging safety. Therefore, the package must meet the test requirements for a solid. The package is considered to meet the test requirements if there is no loss of materials (i.e., solids or liquids) during the testing.
  - 3) The material being shipped is a liquid and must meet the test requirements for a liquid found in 49 CFR 173.466.

If you have questions or need additional information, please don't hesitate to contact me at (509) 372-9343 or [jmatwood@bechtel.com](mailto:jmatwood@bechtel.com). Thank you for your response to this request.

Sincerely,



J. M. Atwood  
Manager, Waste Management/Transportation

JMA:nww