U.S. Department
of Transportation

**Pipeline and
Hazardous Materials Safety
Administration**

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

OCT 28 2005

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

Ref No. 05-0227

Dear Mr. Winters:

This is in response to your September 19, 2005 letter requesting clarification of the design requirements for Class 7 packages under the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180). Specifically, you ask if §§ 173.410(h) or 173.412(a) apply to a 0.5-1 inch diameter plugged drain that is recessed flush and located on the bottom of a package. You indicate that the drain is used for cleaning the package and that removal of the threaded drain plug requires the use of a tool.

Section 173.410(h) requires valves through which the package contents could escape to be protected against unauthorized operation. As used in this section, the term valve refers to a mechanical device that can be used to start, stop, or regulate product flow. Though a drain plug performs a similar function, it is not a mechanical device and; therefore, not a valve. As a result, the plugged drain that you describe is not subject to § 173.410(h).

Section 173.412(a) requires the outside package to incorporate a feature, such as a seal, that is not readily breakable, that serves as evidence that the package has not been opened. Given the limited accessibility of the plugged drain (bottom of the package) and the need for a tool to remove the drain plug, it is our opinion that the plugged drain that you describe is not subject to this requirement.

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

050227

173.410(h)
173.412(a)

Supko
§173.410(h)
§173.412(a)
RAM
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Regulatory Resources, Inc.
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September 19, 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. I've opted to submit each topical question(s) as a separate correspondence rather than placing all the questions in a single request. This particular request for clarification concerns 49 CFR 173.410(h) and §173.412(a) with regard to a drain plug.

The requirement in 49 CFR 173.410(h) states that all valves through which the package contents could escape will be protected against unauthorized operation. Some large (e.g., bulk packagings) industrial and Type A packaging design types authorized only for Class 7 radioactive materials solid contents are fabricated with a threaded drain hole (0.5 - 1" diameter) located on the bottom of the packaging, sealed closed with a drain plug. These drains are to aid in future cleaning of the packaging. The drain and plug are recessed to be flush with the outer package surface. The drain feature is not the designed closure of the packaging where content is added and removed; this is accomplished by removal of the lid (e.g., entire top) of the packaging. A tool, different from that used to close/open the package, is needed to remove the drain plug.

A valve is a device used to stop and start, or control flow rate. It is usually equipped with a means to operate the value without the use of tools. The IAEA TG-1-1, ¶614.1 states:

> "Locks are probably one of the best methods of preventing unauthorized operation of valves; they can be used directly to lock the valve closed or can be used on a lid or cover which prevents access to the valve. Whilst seals can be used to indicate that the valve has not been used, they cannot be relied upon to prevent unauthorized operation."

The intent of §173.410(h) is to prevent, without the used of tools, the inadvertent or ill-intentioned operation of the value whereby contents can escape from the package. Clearly, a drain plug as explained above is not for this purpose, and hence, not a valve as referred to in 173.410(h). Furthermore, the IAEA states in TS-G-1.1 paragraph 723 regarding packagings that "...even thick walled designs may have weak points such as closures of drain holes, valves, etc." It is evident the IAEA recognizes that a drain hole is separate and distinct from a valve. For regulatory clarity, RRI asks PHMSA's for confirmation of this opinion.

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RRI's second question concerns 49 CFR 173.412, *Type A Package Requirements*, paragraph (a) which states that the outside of the packaging must incorporate a feature, such as a seal, that is not readily breakable, and that, while intact, is evidence that the package has not been opened.

The filling and removing of content from the packaging design in question is accomplished only by removing the top, or lid, of the packaging. The lid is held in place by a series of bolts with appropriate washers and nuts or specialized locking clips. The tamper indicating design feature(s) is/are incorporated into the lid/closure. The drain and drain plug are located on the bottom of the packaging and can be accessed only by mechanically lifting the packaging and then employing a special drain plug tool that is different than that required for the packaging closure. Given: (1) the location of this drain plug limits its access to only when the entire packaging is mechanically lifted; (2) the need for a different tool than that used to open/close the packaging; (3) the fact that the drain feature is not part of the manufacturer's closure instructions for use of the packaging; and (4) the improbability of adding or removing authorized content from this small opening, RRI believes it is not within the scope of the intended tamper indicating device requirement as stated in §173.412(a), and hence, not required to be designed with such a feature. RRI seeks PHMSA's concurrence with this opinion.

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

For Regulatory Resources, Inc.,

Wade A. Winters, CET, CHMM
President

WAW/lom