U.S. Department
of Transportation

Pipeline and Hazardous Materials Safety Administration

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

FEB 20 2014

Mr. Robert White
Owner/CEO
Hazwaste Packaging Consultants
PO Box 209
Lenoir City, TN 37771-0209

Reference No. 13-0198

Dear Mr. White:

This is in response to your September 19, 2013 letter requesting clarification of the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180) applicable to packaging. Your questions are paraphrased and answered below:

Q1: You state that in the absence of a reduced atmospheric pressure chamber, you internally pressurize a Type A packaging containing a radioactive material to 11.1 pounds per square inch (psi), close the air supply, and monitor the pressure gauge for a period of 5 minutes. You ask if the packaging is considered to have met the requirements in § 173.412(f) for reduction of ambient pressure if there is no loss in pressure for the 5 minute period.

A1: The requirement in § 173.412(f) for demonstrating whether a package can withstand reduction of ambient pressure to 25 kPa (3.6 psi) is a design capability requirement. As required by § 173.412(f), the containment system must retain its radioactive contents under the reduction of ambient pressure to 25kPa (3.6 psi).

Q2: You state that § 173.410(f) references §§ 173.24, 173.24a, and 173.24b. You ask if §§ 173.24, 173.24a, and 173.24b all apply to both bulk and non-bulk packages.

A2: Non-bulk packages would be subject to the packaging requirements in §§ 173.24 and 173.24a; bulk packages would be subject to the requirements of §§ 173.24 and 173.24b.

Q3: You state that the packaging that is most commonly tested for Department of Energy (DOE) sites is a 96 cubic foot container filled to a gross weight of 11,000 pounds. You further state that the packaging can be designed and tested as an IP-1, IP-2, IP-2, 7A Type A, or 7A Type A, Fissile Qualified. You ask whether a 96 cubic foot container would be considered a bulk packaging. Additionally, you ask if this packaging is considered a non-bulk package, would it be permissible to test a single package to meet the vibration test as required by § 178.608.

A3: PHMSA defines a bulk packaging in § 171.8 as having a net mass greater than 400 kg (882 pounds). Since your packaging has a gross weight of 11,000 pounds it would be considered a bulk packaging under the HMR. A vibration test for a bulk packaging is not required under § 178.608.

I hope this satisfies your request.

Sincerely,

T. Glenn Foster

T. Glenn Foster
Chief, Regulatory Review and Reinvention Branch
Standards and Rulemaking Division

Andrews
§173.410(f)
§173.24
§173.24a
§173.24b
Packages
13-0198

HAZWASTE PACKAGING CONSULTANTS

September 19, 2013

U.S. DOT
PHMSA Office of Hazardous Materials Standards
Attn: PHH-10
East Building
1200 New Jersey Avenue, SE.
Washington, DC 20590-0001

Dear Sirs,

I have two (2) questions pertaining to the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180).

QUESTION 1:

Reference 49 CFR 173.412(f), Reduction of Ambient Pressure.

In the absence of a reduced atmospheric pressure chamber, we internally pressurize a Packaging to 11.1 psig (14.7 psi atmospheric pressure – 3.6 psi reduced ambient pressure = 11.1 psi), close the air supply, and monitor the Pressure Gauge for a period of 5-minutes. If there is no loss in pressure for the 5-minute period, the Packaging is considered to have passed the Test. Is this an acceptable method?

QUESTION 2:

Reference 49 CFR 173.410(f), Vibration

a. **173.410(f)** says "The package will be capable of withstanding the effects of any acceleration, vibration, or vibration resonance that may arise under normal conditions of transport without any deterioration in the effectiveness of the closing devices on the various receptacles or in the integrity of the package as a whole and without loosening or unintentionally releasing the nuts, bolts, or other securing devices even after repeated use. (see **§§ 173.24**, **173.24a**, and **173.24b**)."

   i. **173.24(f)(1)** says, "Closures on packagings shall be so designed and closed that under conditions (including the effects of temperature, pressure, and vibration) normally incident to transportation, ...there is no release of material and the closure is leakproof.

   ii. **173.24a(5)** says, "*Vibration*. Each non-bulk package must be capable of withstanding, without rupture or leakage, the vibration test procedure specified in **178.608** of this subchapter."

   iii. **173.24b** does NOT require vibration testing

2a. Since **173.410(f)** states: "see **§§ 173.24**, **173.24a**, and **173.24b**," are all Packagings subject to all three paragraphs? As I read it, **173.24** applies to all packagings, bulk and non-bulk; **172.24a** applies to non-bulk packagings only; **173.24b** applies to bulk packagings only.

2b. The Packaging that is most commonly tested for DOE Sites is 4' x 4' x 6' = nominal 96 cubic feet, with a filled gross weight of 11,000 lbs. (This size Packaging can be designed and tested as an IP-1, IP-2, IP-3, 7A Type A, or 7A Type A, Fissile Qualified.) Is this a bulk packaging? If so, then I understand that the CFRs do not require a Vibration Test as specified in **178.608**. Is this correct?

2c. IF a Vibration Test IS required, since there is no Vibration Test Machine that I know of large enough to handle three (3) of the above Packages simultaneously, because of both physical size and weight, is it permissible to use a single Package on the Vibration Table for the Test?

Thank you for your help.
Sincerely,

Robert G. White
Owner/CEO
Hazwaste Packaging Consultants
PO Box 209
Lenoir City, TN 37771-0209
(865)- 235-6555