



U.S. Department
of Transportation

**Pipeline and Hazardous
Materials Safety
Administration**

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

JUN - 6 2008

Ms. Ella McNeil, Acting Director
Office of Packaging and Transportation
Office of Safety and Operations
Office of Environmental Management
U. S. Department of Energy
Washington, DC 20585

Ref. No.: 08-0055

Dear Ms. McNeil:

This responds to your letter dated March 5, 2008, requesting clarification regarding the use of freight containers which are designed, tested, and fabricated to ISO 1496-1: "Series 1 Freight Containers – Specifications and Testing – Part 1: General Cargo Containers," as Industrial packagings (IP) Type 1 (IP-1), Type 2 (IP-2) and Type 3 (IP-3) containers under the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180). Specifically, you request clarification on whether an offeror must comply with the use and documentation requirements of § 173.411(b)(6) and (c) of the HMR.

According to your letter, Department of Energy (DOE) utilizes freight containers for shipments of low-level radioactive materials destined for disposal. Many times the containers are transported to the disposal sites and buried with the radioactive contents. In accordance with the HMR, these freight containers can be used as IP-1, IP-2, and IP-3. The majority of these containers are designed and fabricated overseas. All of the designs and associated testing, analysis, and fabrication activities are independently reviewed and approved by competent authorities or designated authorized approval agencies (e.g., American Bureau of Shipping, Bureau Veritas, or Germanischer Lloyd). Much of the information required by § 173.411(c), is considered proprietary or confidential and is located in foreign countries. Thus, it is difficult, if not impossible, for an offeror to obtain the complete documentation that may be required.

Your questions are answered as follows:

Question 1:

Would an offeror be required to demonstrate that the requirements of § 173.410(b) have been met even though the freight container has passed all the required tests in ISO 1496-1?

Answer 1:

The answer is yes. An offeror would be required to demonstrate that the requirements of § 173.410(b) have been met, even though a freight container has passed all the required tests in ISO 1496-1. Section 173.411(b)(6)(ii) requires freight containers used as IP-2 or IP-3 to satisfy the requirements for an IP-1 as specified in § 173.411(b)(1). Section 173.411(b)(1) requires each IP-1 to meet the general design requirements prescribed in § 173.410. Section 173.410(b) requires each operable lifting attachment that is a structural part of the package to be designed with a minimum safety factor of three against yielding when used to lift the package in the intended manner. ISO 1496-1 and ISO 1161: "Series 1 freight containers – Corner fittings – Specification" do not specify such a design requirement, therefore the minimum safety factor of three against yielding for each operable lifting attachment is an additional HMR requirement for freight containers designed in accordance with ISO 1496-1 and ISO 1161. Alternatively, as prescribed in § 173.410(b), any other structural part of the package must be capable of being rendered inoperable for lifting the package during transport or must be designed with strength equivalent to that required for lifting attachments.

Question 2:

Is documented evidence, (e.g., production certificate), from an approved third party organization acceptable justification for DOT that a freight container is in compliance with ISO 1496-1, when this documented evidence verifies the freight container design has been tested to the same testing criteria found in the ISO 1496-1 standard?

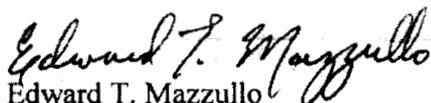
Answer 2:

The answer is no. Documented evidence (e.g., a production certificate) from a third party organization does not provide acceptable justification that a freight container complies with ISO 1496-1, unless it provides complete documentation of tests and an engineering evaluation or comparative data showing that the construction methods, packaging design, and materials of construction comply with the standard. In accordance with § 173.411(c), except for IP-1 packagings, each offeror of an industrial package must maintain on file for at least one year after the latest shipment, and shall provide to the Associate Administrator for Hazardous Materials Safety upon request, complete documentation of tests and an engineering evaluation or comparative data showing that the construction methods, packaging design, and materials of construction comply with that Standard. Freight containers designed to conform to ISO 1496-1, excluding dimensions and ratings, are permitted as a partial alternative to the tests required for IP-2 and IP-3 packages in § 173.411. In accordance with § 173.411(b)(6)(iii), the containers must conform to the standards prescribed in ISO 1496-1 and must also be designed such that if subjected to the tests prescribed in ISO 1496-1 and the accelerations occurring during routine conditions of transport they would prevent: (a) Loss or dispersal of the radioactive contents; and (b) Loss of shielding integrity which would result in more than a 20% increase in the radiation level at any external surface of the freight containers. It should be noted that the test conditions of accelerations occurring during routine conditions of transport are in addition to the testing prescribed by ISO 1496-1, because the ISO Standard does not include dynamic tests.

Therefore, in addition to conforming to the ISO 1496-1 design standards, complete documentation is required in accordance with § 173.411(c). Complete documentation is also required demonstrating that the freight containers are designed such that if subjected to the tests prescribed in the Standard and the accelerations occurring during routine conditions of transport (given the particular radioactive contents) the following will be prevented: a) Loss or dispersal of the radioactive contents, and b) Loss of shielding integrity which would result in more than a 20% increase in the radiation level at any external surface of the freight container.

I hope this answers your inquiry.

Sincerely,



Edward T. Mazzullo

Director

Office of Hazardous Materials Standards