



U.S. Department of Transportation
**Pipeline and Hazardous Materials
Safety Administration**

1200 New Jersey Ave, S.E.
Washington, D.C. 20590

Mr. E.A. Altemos
HMT Associates, LLC
603 King St., Suite 300
Alexandria, VA 22314-3105

MAY 26 2009

Ref. No. 09-0080

Dear Mr. Altemos:

This responds to your April 8, 2009 letter requesting clarification of the IBC design testing requirements under the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180). Specifically, you request confirmation that an existing IBC mounted with certain bottom discharge equipment that is representative of the service equipment installed on the IBC during design qualification tests is not a “different IBC design type” requiring design qualification testing.

Your letter describes two alternative modifications of the bottom discharge outlet of an IBC in order to conform to a new EPA requirement that each opening (other than a vent) of portable refillable containers used for liquid pesticides must have one-way valves. The original design qualification tests for the IBC were performed with a “Banjo” ball valve installed at the bottom drain assembly. The alternatives are as follows:

Alternative 1: Replace the existing “Banjo” ball valve with a new “Banjo” ball valve fitted with an internal one-way valve. The new ball valve is identical to the existing ball valve except for the addition of a one-way valve at the rear (inlet) of the valve that is located completely within the IBC when installed.

Alternative 2: Retain the existing “Banjo” ball valve and add at its outlet a nozzle with a standard external coupler connection to which a hose is attached for unloading where the coupler contains the one-way valve.

Your understanding is correct. Based on the descriptions of the two alternatives and the drawings provided with your letter, neither Alternative 1 nor Alternative 2 would result in the creation of a “different IBC design type” as defined in § 178.801(c) and therefore, neither alternative is subject to design qualification testing in accordance with § 178.801(d). Additionally, your understanding is correct that Alternative 1 is considered routine maintenance because the original valve is removed and replaced (see § 180.350(c)(1)(ii)). Thus, this modification would be subject to verification of leaktightness and marking of the IBC in accordance with §§ 180.350(c)(1)(ii) and 180.352(e), respectively. Note that the new “Banjo” valve described in Alternative 1 must provide an equivalent standard of integrity as the original valve. The modification described as Alternative 2 is not considered routine

maintenance and, thus, would not be subject to the verification of leaktightness and marking requirements.

Sincerely,

A handwritten signature in cursive script, appearing to read "Susan Gorsky".

Susan Gorsky
Acting Chief, Standards Development
Office of Hazardous Materials Standards

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§178.801
§178.802
Testing of IBC's
09-0080

E.A. ALTEMOS
PATRICIA A. QUINN

WRITER'S DIRECT DIAL NUMBER

(703) 549-0727, Ext. 11

April 8, 2009

Mr. Edward T. Mazzullo
Director, Office of Hazardous
Materials Standards (PHH-10)
Pipeline and Hazardous Materials
Safety Administration
Department of Transportation
1200 New Jersey Avenue, SE
East Building, 2nd Floor
Washington, D.C. 20590-0001

Dear Mr. Mazzullo:

According to the definition of "*Different IBC design type*" in § 178.801(c)(7) of the Department of Transportation's Hazardous Materials Regulations ("HMR", 49 CFR Parts 171-180), an IBC which differs from a previously qualified IBC design type *only* in that it "differs in service equipment" is not considered a different IBC design type (see § 178.802(c)(7)(iv)). Further, § 178.801(c)(1) defines an "*IBC design type*" to include service equipment "representative" of the service equipment installed on the IBC for purposes of performing the required design qualification tests. Thus, the HMR consider an IBC that differs from a previously qualified design type only in terms of the *representative service equipment* installed to be of the same design type - and, therefore, not a "different" design type requiring full design qualification testing.

The purpose of this letter is to seek your confirmation, based on the foregoing provisions, that certain bottom discharge equipment proposed to be mounted on existing IBCs is "representative" of the service equipment installed on the IBC when the design qualification tests were performed, and, therefore, that the modified IBCs are of the same "IBC design type" as the previously qualified IBCs.

Need for modified discharge arrangement.

The IBCs of interest are used in the agricultural industry for the transport of a variety of liquid pesticides. The IBC design qualification tests that provided the basis for the original

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manufacturers' markings applied to the IBCs in order to certify conformance to the applicable requirements of the HMR were performed with a standard "Banjo" ball valve installed at the outlet of the bottom drain assembly. The design of this valve - which is very commonly used on IBCs of a variety of different design types - does not have an inherent feature to prevent reverse flow into the IBC through the bottom discharge outlet.

The US Environmental Protection Agency (EPA) recently adopted new requirements applicable to packagings used for pesticides. One of these requirements, which appears as paragraph (e) of 40 CFR 165.45 ("Refillable container standards"), states (in pertinent part):

"(e) What standards for openings do my refillable containers have to meet? If your refillable container is a portable pesticide container that is designed to hold liquid pesticide formulations and is not a cylinder that complies with the DOT Hazardous Materials Regulations, each opening of the container other than a vent must have a one-way valve, a tamper-evident device or both."

Compliance with this new provision is required on and after August 16, 2011, and no "grandfathering" of existing packagings is provided. For purposes of this requirement, EPA has defined a "one-way valve" as a valve that is "designed and constructed to allow virtually unrestricted flow in one direction and no flow in the opposite direction". Moreover, it is noted that use of a tamper-evident device as the *sole* means to satisfy this requirement is allowed only for containers that are cleaned of all residue prior to refilling. However, in practice IBCs used by the agricultural industry for the transport of pesticides are normally refilled with the same or a similar pesticide without first being cleaned. Thus, in effect, on and after August 16, 2011, all existing IBCs used for liquid pesticides will have to be retro-fitted with a "one-way" valve in order to comply with this requirement, or no longer used in pesticides service.

It is estimated that several hundred thousand IBCs used in the agricultural industry are affected by this new requirement. The cost of removing these IBCs from this service and replacing them (within the authorized time-frame) with new IBCs equipped with discharge valves that meet this requirement is prohibitive. Thus, the only practicable option is to retro-fit these existing IBCs with discharge valves complying with the new EPA requirement. However, at the same time, in order to ensure that the applicable requirements of the HMR are satisfied, it is imperative that any alteration of the bottom outlets on these IBCs does not result in the IBC being considered to be of a "different design type". Were this to result, the continued use of the IBCs on the basis of the previously conducted design qualification tests (under which the UN markings certifying compliance with the applicable requirements of the HMR were applied) would be precluded - thereby causing significant harm and serious financial loss to an agricultural industry that relies heavily on these IBCs for the transport of pesticides.

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Proposed alternatives.

Against that background, and based on the provisions of the HMR outlined above, your confirmation is requested that certain bottom discharge equipment proposed to be mounted on these existing IBCs may be considered to be “representative” of the service equipment installed on the IBC when the design qualification tests were performed, or otherwise authorized, such that the modified IBCs may be considered to be of the same “IBC design type” as the previously qualified IBCs. Two alternative bottom discharge arrangements, as described below, are proposed in order to ensure these existing IBCs conform to the new EPA requirements. Your consideration of each of these alternatives in light of the “representative service equipment” provisions will be appreciated.

Alternative 1. Alternative 1 is to replace of the existing Banjo ball valve at the IBC bottom outlet with a new Banjo ball valve fitted with an internal one-way valve. The original ball valve is shown in attached drawing identified as “1” in the upper left hand corner, and the new ball valve is shown in the drawing identified as “2”. The drawing identified as “5” is a sectioned isometric view of the IBC body and base illustrating the drain assembly with the original valve installed.¹ The new ball valve is identical to the existing ball valve except for the addition of the one-way valve at the rear (inlet) of the valve which, when the valve is installed, is located completely within the IBC. Thus, viewed from outside of the IBC, the valve installed in the drain assembly would appear the same as does the original valve, as illustrated in the drawing identified as “1”. It is understood that the replacement of the original valve by a new valve would constitute “routine maintenance” as defined in § 180.350(c), which is subject to verification of the leaktightness, and marking of the IBC as provided in §§ 180.350(c)(ii) and 180.352(e), respectively.

Your confirmation is requested that the replacement described above will not result in the creation of a “different IBC design type” on the basis that the original Banjo ball valve (with which the IBCs subjected to the design qualification tests were equipped) is “representative” of the new Banjo ball valve (with integral one-way valve).

Alternative 2. Alternative 2 is to retain the existing Banjo ball valve and to add at its outlet a nozzle (with the standard external “coupler” connection to which a hose is attached for unloading). This added “coupler” would contain the internal one-way valve necessary to satisfy the new EPA requirement. This alternative arrangement is illustrated in the attached drawings identified as “3” and “4”. Note that when installed on the outlet the entire assembly remains adequately protected.

¹ Note that the dark colored (red) component shown in the attached sectioned isometric drawings of the IBC drain assembly (i.e., the drawings identified as “3”, “4” and “5”) is a part of the IBC pallet base. While most of the IBCs affected by the new EPA requirements conform to this particular arrangement, all do not. However, even when not fitted with a pallet base as illustrated, the outlet valves (including as described in Alternative 2) are located within a recess in the IBC body and adequately protected from damage.

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Importantly, the original outlet valve remains installed on the IBC and continues to provide the basic product containment capability. The “new” component necessary to conform the outlet to the new EPA requirement is simply a “downstream” addition to the current item of service equipment. In this connection, nothing in the HMR appears to preclude adding a coupler extension to the outlet of an existing bottom discharge valve (i.e., a valve of the design used when the IBC design qualification tests were performed) and transporting the IBC with the coupler extension installed.

It is estimated that implementation of Alternative 2 would entail only approximately *half* the expense of Alternative 1. Therefore, given the very large number of IBCs that must be brought into conformance with the new EPA requirement, this would be the preferred approach. Consequently, your confirmation is requested that the addition described above will not result in the creation of a “different IBC design type”. This conclusion could be based *either* on the fact that nothing in the HMR precludes the addition of a coupler extension to the outlet of an the existing discharge valve, or on the basis that the original Banjo ball valve (with which the IBCs subjected to the design qualification tests were equipped) is “representative” of the arrangement in which the coupler (with integral one-way valve) is added to the outlet of the original Banjo ball valve. In either case, this operation would not appear to constitute “routine maintenance” as defined in § 180.350(c), and your confirmation of this understanding would also be appreciated.

Thank you for your consideration in this matter. Please do not hesitate to contact me if you have questions concerning this request, or if you require additional information.

Sincerely,



E. A. Altemos