



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

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

DEC 23 2004

Mr. Marvin M. Miller
Operations Manager
Service Department
Beall Transport Equipment Co.
8801 North Vancouver Avenue
Portland, OR 97217

Ref No.: 04-0226

Dear Mr. Miller:

This responds to your September 30, 2004 letter requesting clarification of the requirements in the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180) applicable to periodic testing and inspection of specification cargo tanks. In particular, you are concerned about the requirements in § 180.407(d) applicable to insulated cargo tanks and specifically § 180.407(d)(4) applicable to external ring stiffeners installed on insulated cargo tanks.

Section 180.407(c) requires all specification cargo tanks to have an external visual inspection at least once each year. Where insulation precludes an external inspection, MC 330, 331, and 338 cargo tanks may be given either an internal visual inspection in conjunction with the external visual inspection or a hydrostatic or pneumatic pressure-test (see the chart entitled Compliance Dates – Inspections and Test Under § 180.407(c)). Insulated cargo tanks that are lined, coated, or designed so that access to the interior of the tank is not possible must be pressure tested in accordance with § 180.407(g)(1)(iv) at the applicable time interval provided in § 180.407(c) (see § 180.407(d)(1)). In instances where insulation precludes a complete external visual examination of the tank shell, a visual external inspection of a cargo tank's piping, valves, gaskets, manholes, emergency devices, remote closures, and all major appurtenances and structural attachments must be conducted in accordance with § 180.407(d)(2) and included in the test report.

In accordance with § 180.407(d)(4), for cargo tanks constructed of mild steel or high-strength, low-alloy steel, external ring stiffeners and other appurtenances that create air cavities adjacent to the tank shell that do not allow for an external visual inspection of the tank shell must be thickness tested in four symmetrically distributed locations at least once every two years. This provision applies to both insulated and non-insulated tanks. On insulated tanks where the insulation may preclude the thickness test, you may need to remove the insulation jacket surrounding the ring stiffeners in order to comply with this requirement. You should also note that the exception provided in § 180.407(d)(1) authorizing alternate



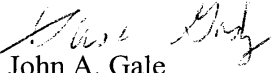
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180.407(d)(1)

means to comply with the provisions contained in paragraphs (d)(2) thru (d)(6) of § 180.407 does not apply to thickness testing of the ring stiffeners or other appurtenances.

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



Beall Transport Equipment Co.
8801 North Vancouver Avenue
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\$180.407 (d)(1)
Cargo Tanks
04-0226

Mr. Tony Cicero
U.S. Department of Transportation
Federal Motor Carrier Safety Administration
The Equitable Center
530 Center Street NE, Suite 100
Salem, OR 97301

Dear Mr. Cicero,

As per our conversation I have outlined the following scenario with regards to CFR49, Part 180.407 (d)(1) & (4) and provided what I believe to be a literal interpretation.

(d)(1)(sentences 1 & 2) Where insulation precludes a complete external visual inspection as required by paragraphs (d)(2) through (d)(6) of this section, the cargo tank must be given an internal visual inspection in accordance with paragraph (e) of this section. If external visual inspection is precluded because any part of the cargo tank wall is lined, coated, or designed so as to prevent an external visual inspection, those areas of the cargo tank must be internally inspected.

Interpretation: Insulated tank. I cannot externally inspect the cargo tank wall, ring stiffeners or other appurtenances because the cargo tank is insulated and designed so as to prevent an external visual inspection. I must perform an internal visual inspection. **Non-insulated tank.** I can externally inspect the cargo tank wall, ring stiffeners or other appurtenances.

(d)(1)(sentence 3) If the internal visual inspection is precluded because the cargo tank wall is lined, coated, or designed so as to prevent access for internal inspection, the tank must be hydrostatically or pneumatically tested in accordance with paragraph (g)(1)(iv) of this section.

Interpretation: Insulated tank. The internal visual inspection is precluded because the cargo tank wall is designed so as to prevent access for internal inspection of ring stiffeners or other appurtenances. I must perform a pressure test. **Non-insulated tank.** Does not apply.

(d)(1)(sentence 4) Those items able to be externally inspected must be externally inspected and noted in the inspection report.

Interpretation: Insulated tank. I am not able to externally inspect the ring stiffeners or other appurtenances so I am not required to inspect or note them in the inspection report. **Non-insulated tank.** I am able to externally inspect the ring stiffeners and other appurtenances so I am required to inspect and note them in the inspection report.

(d)(4)(sentence 1) Ring stiffeners or other appurtenances, installed on cargo tanks constructed of mild steel or high-strength, low-alloy steel, that create air cavities adjacent to the tank shell that do not allow for external visual inspection must be thickness tested in accordance with paragraphs (i)(2) and (i)(3) of this section, at least once every two years.

Interpretation: Insulated tank. I must thickness test the ring stiffeners and other appurtenances that do not allow for external visual inspection at least once every two years. **Non-insulated tank.** I am able to

perform an external visual inspection on the ring stiffeners and other appurtenances so I am not required to thickness test them every two years.

(d)(4)(sentences 2 & 3) At least four symmetrically distributed readings must be taken to establish an average thickness for the ring stiffener or appurtenance. If any thickness reading is less than the average thickness by more than 10%, thickness testing in accordance with paragraphs (i)(2) and (i)(3) of this section must be conducted from the inside of the cargo tank on the area of the tank wall covered by the appurtenance or ring stiffener.

Interpretation: Insulated tank. In order to comply with (d)(4)(sentence 1) I must open the insulation jacket to access the ring stiffeners and other appurtenances so that I may perform a thickness test as per (d)(4)(sentence 1) or ignore it as per (d)(1)(sentence 4). Non-insulated tank. Does not apply.

Conclusions: 1. An insulated tank must now be pressure tested every time one performs an external visual inspection because you can't inspect the ring stiffeners or other appurtenances either externally or internally or 2. An insulated tank must have the insulation jacket opened to allow access so that one may identify the type of ring stiffeners and other appurtenances and so that they may be thickness tested every two years. 3. Except for a handful of tanks, every non-insulated tank can be inspected externally and therefore would never require a thickness test.

If the intent of 180.407(d)(4) is to ensure the integrity of the ring stiffeners, then you have to be able to see them on all tanks therefore opening the insulation jacket would be required. If the intent is to ignore insulated tanks and apply this to non-insulated tanks only, then it is redundant because the vast majority would never require thickness testing because you can perform an external visual inspection. I can only think of one type of tank that would qualify and it is lined internally. Please provide a written interpretation covering all points of concern.

Sincerely,

M.M. (Marv) Miller
Operations Manager
Service Department
Beall Transport Equipment Co.