



U.S. Department
of Transportation

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

**Pipeline and Hazardous
Materials Safety Administration**

December 19, 2008

To all Anhydrous Ammonia/Nurse Tank Owners, Fillers, Transporters, Users, Repair Stations, Welders, Inspectors and Related Associations:

Based on eight (8) recent enforcement investigations, conducted by the U.S. Department of Transportation, Pipeline and Hazardous Materials Safety Administration (PHMSA), Office of Hazardous Materials Enforcement (OHME), this letter is intended to notify the industry of serious safety problems and non-compliance issues regarding the maintenance, filling, transport and use of nurse tanks in anhydrous ammonia service. PHMSA is greatly concerned with the lack of compliance and understanding of the minimum safety requirements for nurse tanks based on its investigations. PHMSA recognizes the breadth of the nurse tank industry. In order to magnify its safety and compliance efforts, PHMSA feels this letter will help increase awareness and provide a means of contact for questions about the prescribed safety requirements.

In all of the investigations, PHMSA Hazmat Investigators noted a similar pattern of non-compliance and safety problems. Below is a list of the areas of non-compliance and safety problems.

A nurse tank, by US DOT regulatory definition, is a cargo tank considered an implement of husbandry for the transportation of bulk anhydrous ammonia.

Under an exception in 49 CFR § 173.315(m) in the Hazardous Materials Regulations (HMR), the transportation of anhydrous ammonia in a “nurse tank” is only authorized if the tank is operated by a private carrier and used exclusively for agricultural purposes. This section also excepts a “nurse tank” from meeting the specification requirements for packaging in the (HMR). However, a nurse tank must meet the general requirements of § 173.24 and the specific criteria outlined in § 173.315(m) (below).



§ 173.315(m) Requirements

The tank must: (1) Have a minimum design pressure of 250 psig and meets the requirements of the edition of Section VIII of the ASME Code in effect at the time it was manufactured and marked.

(2) Be equipped with safety relief valves meeting the requirements of CGA pamphlet S1.2.

(3) Be painted white or aluminum.

Nurse Tank Safety Advisory

(4) Have a capacity of 3,000 gallons or less.

(5) Be loaded to a filling density no greater than 56 percent.

(6) Be securely mounted on a farm wagon.

(7) Be in conformance with the requirements of part 172 of this subchapter except that shipping papers are not required; and it need not be marked or placarded on one end if that end contains valves, fittings, regulators or gauges when those appurtenances prevent the markings and placard from being properly placed and visible.

All of the requirements listed in § 173.315(m) must be followed for the regulatory exception to apply, otherwise the full requirements of the HMR apply for specification containers, hazard communication, and paperwork, training and carrier specific requirements.

Non-Compliance

Based on investigations conducted throughout the Midwest area, PHMSA discovered a pattern of widespread non-compliance regarding the following:

- (1) 49 CFR Sections 172.400 and 500: Placarding and marking violations (lack of placarding and marking, and illegible or extremely faded placarding and marking).



- (2) 49 CFR Section 173.315(m): Missing or illegible American Society of Mechanical Engineers (ASME) code nameplates. (ASME nameplates must be legible to be valid).



(3) 49 CFR Section 173.315(m) Unauthorized repairs on the tank – the HMR requires the tank to be manufactured in accordance with ASME Code and marked accordingly. Nameplates on ASME code tanks are marked with a “U” stamp at the time of manufacture. Based on the ASME Code incorporated by reference standard in section 171.7, repairs of “U” stamped ASME tanks must be repaired in accordance with the National Board Inspection Code procedures for repair, and performed and marked by an authorized “R” stamp facility.



(4) 49 CFR Section 173.24(b)(2) – Tanks used for the shipment of anhydrous ammonia must be properly maintained. A reduction in package (or tank) integrity poses an unsafe and increased risk of failure during conditions normally incident to transportation (vibration, shock, and loading). Many tanks were observed



that showed documented use, where the integrity and effectiveness of tanks were compromised, thus potentially affecting public safety.

DOT-SP 13554: On January 10, 2005, based on an application from The Fertilizer Institute, the Pipeline and Hazardous Materials Safety Administration granted DOT-SP 13554 to address nurse tanks with missing nameplates.

ASME Nameplate: For nurse tanks with missing nameplates and a replacement nameplate is not available; the owner may apply for a special permit for continued operation. (The alternative is to remove the tank from hazardous materials service).

Testing: DOT-SP 13554 allows the operation of nurse tanks without nameplates, providing the tanks are tested and marked as follows; external visual inspection (V), thickness test (T), and hydrostatic pressure test (P). In addition, each tank must be marked with a unique number to identify the tank, along with marking DOT-SP 13554 on the tank. For continued use, a tank must be tested and marked every five years, the owner must renew the special permit, and a current copy of the special permit must be maintained by the owner and every location the tank is filled. These tests must be performed by facilities

registered with US DOT FMCSA as cargo tank testers. Currently, nurse tanks with legible nameplates are not required to be tested.

Repairs: Repairs on ASME code tanks require the facility making the repairs to have an R stamp and be registered with US DOT FMCSA. Repairs must follow the procedures as outlined in the Nation Board Inspection Code. Tanks having completed a successful authorized repair must be marked and repair records must be maintained by the tank's owner. Unauthorized repairs place the tank out-of-service until corrections can be made. **DOT-SP 13554 currently prohibits repairs on nurse tanks without nameplates.**

Training: Owners of nurse tanks operating under DOT-SP 13554 must conduct and document training for its employees on the specific requirements and conditions of the special permit and applicable areas of their operation under the HMR.

TRINITY INDUSTRIES, INC.
DALLAS, TEXAS

U **W** **250 P.S.I. @ 125° F.**
MAX. ALLOWABLE WORKING PRESSURE

DIV. 1 **PRT** **MPG SERIAL NO.**

O.S. SURFACE AREA **1718"** **D.R.** **HEMI.**

WATER GALS. **26,000** **WATER LBS.** **216,580**

105.5" **.750"** **.420"** **74.7"**

O.S. DIA. **SNELL THK.** **HEAD THK.** **LENGTH**

THIS CONTAINER SHALL NOT CONTAIN A PRODUCT HAVING A VAPOR PRESSURE IN EXCESS OF 212 PSIA AT 100°F.

AG **196** **MFG AT**

TYPE **YR. BUILT**

ASME Nameplate Requirements: Required nameplate markings per the ASME Code, Section VIII, Division 1, UG-116 through UG-118(b) for the years prior to 1988.

ASME Nameplate Markings Prior to the 1986 ASME Code/1988 Addendum

1. Official Code "U" Symbol;
2. Name of Manufacturer;;
3. Maximum Allowable Working Pressure (MAWP);
4. Manufacturer's Serial No. (National Board No. optional);
5. Year Built;

S.N./NAT'L BD. [NB]

CERTIFIED BY
TRINITY INDUSTRIES, INC. DALLAS, TX

MAWP: 250 PSIG @ 125°F
MDMT: -20°F @ 250 PSIG

W **RT 4** **PHT**

PLANT **YEAR BUILT**

ANSI K61.1-1999

HEMI **1,000** **8,328**

HEAD D.R. **WATER GALS.** **WATER LBS.**

40.96" **0.239"** **0.203"** **190.81"**

O.S. DIA. **SHELL THK.** **HEAD THK.** **LENGTH**

AG **NURSE TANK** **173**

TYPE **OSSA, S.F.**

CAUTION: THIS CONTAINER IS DESIGNED FOR ANHYDROUS AMMONIA USE ONLY AND MUST BE EQUIPPED WITH VALVES, FITTINGS, OR HOSES DESIGNED FOR ANHYDROUS AMMONIA USE.

ASME Nameplate Requirements: Required nameplate markings per the ASME Code, Section VIII, Division 1, UG-116 through UG-119 for the years after 1988 Addendum.

ASME Nameplate Markings 1986 ASME Code/1988 Addendum to Present

1. Official Code "U" Symbol;
2. Name of Manufacturer;
3. Maximum Allowable Working Pressure (MAWP);
4. Minimum Design Metal Temperature (MDMT);
5. Manufacturer's Serial No. (National Board No. optional);
6. Year Built;

A PowerPoint presentation on this subject is planned for the PHMSA Hazmat Safety website.
<http://hazmat.dot.gov>

Should you have any questions, please contact PHMSA Hazmat Investigators Terry Pollard or Ted Turner in our Central Region at 847-294-8580.

Sincerely,

A handwritten signature in black ink, appearing to read 'R. Ryan Posten', with a long horizontal flourish extending to the right.

R. Ryan Posten
Director, Office of Hazardous Materials Enforcement