Minnesota Department of Agriculture

2016 Tips from the Field

MDA's Anhydrous Ammonia Inspection and Permitting Program

In 2015 the Minnesota Department of Agriculture (MDA):

- Completed 100 routine anhydrous ammonia (NH3) equipment/storage facility inspections.
- Investigated thirty three (33) NH3 incidents; six (6) of which resulted in endangerment, evacuation, injury, or were a result of unsafe handling, incorrectly installed break-away quick couplers and/or withdrawal hoses that were excessively long.

A partial list of violations and the associated remedies that protect anhydrous ammonia handlers and the public from injury are listed below. If you have questions please contact MDA staff listed at the end of this article. Refer to the MDA's NH3 program website for additional safety and compliance information at: www.mda.state.mn.us/nh3.

	Violations	Remedies
1	NH3 gloves & goggles, not available and worn for NH3 handling or maintenance.	Make NH3 gloves and goggles available. Wear NH3 goggles & gloves for NH3 handling & maintenance.
2	Endangerment, exposure, or injury caused by NH3 release while connecting/disconnecting hoses/lines.	Always assume that hoses/lines contain NH3, bleeding off NH3 from hoses/lines before connecting/disconnecting.
3	Safety water not provided of sufficient quantity and accessibility during NH3 handling or maintenance.	See #4-safety water at a NH3 facility. At least 5 gallons of accessible, clean water on each nurse tank.
4	Not having required safety items at the permitted NH3 storage facility site.	At a minimum, have the following safety items at the permitted NH3 storage facility site: • Two (2) full-face gas masks • Four (4) currently dated/NH3 rated canisters (**NOT cartridges**) • One (1) pair gauntlet-style gloves of sufficient length for cuffing, impervious to NH3 • One (1) pair chemical splash goggles or chemical splash goggles with full face shield worn over the goggles • One (1) pair boots impervious to NH3 • One (1) slicker or pants/jacket, impervious to NH3 • An easily accessible emergency shower and a plumbed eye wash unit or in lieu of these, at least 150 gallons of clean water in an open top container.
5	Main tank and riser hose end valves not closed and locked when the facility is unattended.	Close and lockout main tank and riser hose end valves when facility is unattended. In place of valve lockouts, lock gates at facility secured by fencing when facility is unattended.
6	Traffic protection or other components/objects near the transport transfer and nurse tank riser areas that impedes the pull-away protection during an angle pull-away situation	Reposition the traffic protection or other components/objects to allow an angle pull at transport transfer and nurse tank riser areas. Consult with a contractor, engineer, and manufacturer to ensure that pull-away protection is adequate and in compliance.

	Violations	Remedies
7	Pressure relief valve (PRV) installation records	PRV installation records must be accurate, complete and current.
8	**Hydrostatic Relief Valves (HRVs)** • Incorrect psi rated HRVs installed (i.e. 250 or 450 psi rated). • Missing HRVs on dual nurse tank crossover hosing for liquid and vapor fill connections	Install 350-400 psi rated HRVs between each pair of positive shut-off valves in storage and equipment, and when dual nurse tank fill connections are joined by hosing.
9	Too long withdrawal (WD) hosing	Proper length of WD hose for specific application assembly, positioned above the nurse tank hitch with no chance of catching, being pinched, rubbing, or tearing during field applications and transport.
10	Incorrectly installed break-away coupling devices (BACD) – i.e. not installed per manufacturer's instructions.	• Review and follow BACD manufacturer's instructions for installation, maintenance, and operation • BACD must not be impeded in any manner by hardware, plastic or metal ties, hosing (i.e. jumper hose is too short) • Install bleeder valves as close as possible of both male and female sections of BACD.
11	Incorrect/illegible/missing break-away coupling device (BACD) connection/disconnection instructions.	Make sure that connection/disconnection instructions are complete, match the brand/model of BACD and fully legible near the BACD. Pioneer BACD: Both aluminum ring and decal instructions are required.
12	Supplemental Excess Flow Valves (EFV) not installed in merged withdrawal and fill connections on dual nurse tank assemblies.	On dual nurse tank assemblies where either the liquid or vapor phases have shared shut-off valves, install an additional EFV at the intake side of each shared shut- off valve.
13	Valves, piping and fittings outside the valve guard on nurse tanks.	All nurse tank valves, piping and fittings must be protected within the nurse tank valve guard which includes withdrawal valve connections and crossover connections on dual nurse tank assemblies. Re- plumb the nurse tank valves, piping and fittings so all valves, piping and fittings are protected within the valve guard.
14	Illegible or missing nurse tank (tank) nameplate.	Tank nameplate must be present and legible. Remove all paint, tape, etc. If unable to make legible or nameplate is missing immediately empty and pressure relieve the tank and follow the requirements in federal regulation 49 CFR, Part 173.315(m)(2) for V,T,P testing/marking.
15	Nurse tanks are not properly anchored.	Each bolt/washer/nut assembly must be tight (does not move), securely anchoring nurse tank to running gear. Maintain the running gear frame free of defects.

The MDA strongly recommends that self-inspections be conducted and non-compliance corrected.

NOTE: The Pioneer break-away coupler has a replacement date stamp and decal. The manufacturer states "Discard and replace the coupler and/or nipple 3 years after installation or after the date shown on the product, whatever is earlier." Beginning in 2015, the MDA will inspect Pioneer break-away couplers for replacement dates. Orders directing replacement will be issued when Pioneer break-away couplers are found at or beyond the stamped/decaled replacement date.

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