
Minnesota Department of Agriculture
Anhydrous Ammonia Nurse Tank
Compliance Workshop

JULY 2009

Owatonna - Willmar - Crookston

Compliance (Problem Area) Topics

- NH3 EQUIPMENT COMPLIANCE ISSUES
 - STORAGE SYSTEM TRAFFIC PROTECTION
 - NH3 SERVICE STATUS POLICY
 - “CHECKLIST” – Nurse Tank Compliance
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NH3 EQUIPMENT COMPLIANCE ISSUES

Break-Away (B-A) Coupling Devices

- **Incorrect installation is one of the leading causes of incidents during field application**

 - **Strictly adhere** to B-A coupling device and application unit manufacturer's installation, maintenance, and operation specifications
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 - **Allow full vertical/horizontal movement without binding**

 - Maintain a straight line relationship between coupler and withdrawal hose

 - **Install bleeder valves on both sides of B-A coupling device**

 - Hydrostatic relief valve to protect withdrawal hose in addition to a hydrostat on the nurse tank withdrawal valve.

 - **Prevent application unit components from obstructing B-A coupling device operation**

 - Perform frequent inspection and testing
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NH₃ EQUIPMENT COMPLIANCE ISSUES

Break-Away (B-A) Coupling Devices

- Consult MDA NH₃ Program website at...

<http://www.mda.state.mn.us/chemicals/fertilizers/nh3.htm>

NH3 EQUIPMENT COMPLIANCE ISSUES

Bleed ALL Lines **BEFORE** Making or Breaking Connections



Play It Cautious - If in Doubt, Don't Make or Break a Connection!

- **NEVER** assume that all NH3 is bled off from hosing, piping, tanks, cold flow/cooler units



- **ALWAYS WEAR** NH3 rated goggles and gloves and have an clean accessible emergency water supply in close proximity when handling anhydrous ammonia (NH3) or performing inspections and maintenance
- **BE AWARE** of others around you during NH3 handling and maintenance to avoid exposure if an incident or release occurs

NH3 EQUIPMENT COMPLIANCE ISSUES

Hosing

DO NOT Use Hoses That Are:

- ❑ Too long:
 - Overly secured (tied down) to tanks or application unit
 - Impedes operation of break-away coupling device
 - Can become caught, pinched, or rubbed
 - Causes excessive wear and failure of fittings

 - ❑ Too short:
 - Impedes operation of break-away coupling device
 - Hose can be pulled apart or torn
 - Causes excess wear and failure of fittings

 - ❑ Correct Hose Length:
 - Distance between nurse tank withdrawal valve and break-away coupling device, PLUS about one (1) foot.
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NH3 EQUIPMENT COMPLIANCE ISSUES

Hitches & Anchoring

■ Hitch Connection Failures

- ❑ Hitch pin fall out because it was not secured with a retainer
- ❑ Weld joint failures from excessive towing speed combined with rough field conditions
- ❑ Metal fatigue and lack of maintenance.

■ Tank/Running Gear Anchoring

- ❑ Bolted connections must be tight with **NO** play.
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Service Status Policy

- **What is the Service Status Policy?**

It is a policy that **identifies** a

Specific Use/Service Status

of

NH3 Equipment & Storage Systems

to the

Level of MDA Inspection

Service Status Policy

Service Status Categories

- **“In Service” Status**
 - **FULL** Use/Service - MDA will perform a **FULL** inspection

 - **“Out of Service” Status (only applies to NH3 Equipment)**
 - **LIMITED** Use/Service - MDA will perform a **LIMITED** inspection

 - **“Zero Product/Pressure” Status**
 - **ZERO** Use/Service - **NOT normally** subject to MDA Inspection
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Service Status Policy

■ Benefits of using the Service Status Policy?

- Maximizes safety by minimizing hazard
- Minimizes potential violations

■ Simply Perform

- ***YOUR - (1) self-inspection*** and ***(2)removal from service**** tanks that are found out of compliance

* follow conditions of specific service status category

■ How does MDA enforce Service Status Policy?

- MDA issues ORDERS to Comply or Cease & Desist for equipment and storage systems not in compliance.
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Service Status Policy

■ More Information

- NH3 Equipment Inspection Specification Manual
 - Pages 4 – 6

- March 2009 MDA Update - Page 11



Traffic Protection Barriers

Review and Follow Specifics in the MDA Fact Sheet

Go to MDA Anhydrous Ammonia (NH₃) Program web page:

Go to ↓ ↓

<http://www.mda.state.mn.us/chemicals/fertilizers/nh3.htm>

Go to ↓ ↓

Reports, publications & fact sheets:

Storage Facility Physical/Traffic & Tampering Protection Requirements

(PDF: 805 KB / 3 pages)

Traffic Protection Barriers

- ❑ Minimum Required Size of Curb & Post Barriers

 - ❑ Standard Installation Specifications
 - Examples of installation specifications:
 - ❑ Setback and Spacing Distances
 - ❑ Barrier Anchoring & Post Foundation

 - ❑ Risers Protection:
 - *Liquid & vapor riser piping* must be protected by preventing...
 - ❑ Direct impact
 - ❑ Indirect/side impact - movement of riser platform into riser piping
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Traffic Protection Barriers

You must determine the PREDOMINATE traffic patterns at the facility now and for the future.

Examples:

- **Pick-up towing single nurse tank assembly**
- **Pick-up towing dual nurse tank assembly**
- **Tenders**
- **Semi's**

This determines the size of protection needed.

Traffic Protection Barriers

Variations

- MDA Variations are required for installation specifications **less** than required [See Fact Sheet]
 - Email Ed Kaiser, ed.kaiser@state.mn.us – include description, diagrams, photos, etc.
 - Variations NOT required for barriers **larger** than the required minimum size
 - NO variations granted for barriers **less** than the required minimum size
 - NO variations granted for extension of installation deadline
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Traffic Protection Barriers

Installation Deadline

September 1, 2009

“CHECKLIST” – Nurse Tank Compliance

- Inspection checklist is your **TOOL** for Nurse Tank & NH₃ Equipment Compliance
 - Inspection Specification Manual provides details for compliance items in checklist
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“CHECKLIST” – Nurse Tank Compliance

- Checklists
 - Three (3) DOT/State Patrol – Interstate, Intrastate, Farmer
 - MDA

 - Common Compliance Items
 - Markings
 - Placarding
 - Reflective Tape
 - SMV Emblem
 - Hitch Connection & Safety Chains
 - Tank Anchoring, Running gear & Tire Condition
 - Brakes – specific to **INTRA**state Commerce
 - Tank Rating, Nameplate, Repairs
 - Filling Density
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CHECKLIST – Nurse Tank Compliance

Discussion of “Checklists” Will Occur at the -
11:15 to 12-noon Nurse Tank Inspection Segment

“CHECKLIST” – Nurse Tank Compliance

Checklists and Inspection Specifications

Go to ↓ ↓

MDA Anhydrous Ammonia (NH₃) Program web page

↓ ↓ ↓

<http://www.mda.state.mn.us/chemicals/fertilizers/nh3.htm>

Go to ↓ ↓

■ **Forms:**

- ❑ Equipment Inspection Checklist ([PDF: 34 KB / 2 pages](#))
 - ❑ Equipment Inspection Specifications ([PDF: 1.49 MB / 20 pages](#))
 - ❑ Storage Facility Inspection Checklist ([PDF: 56 KB / 2 pages](#))
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“CHECKLIST” – Nurse Tank Compliance

Reminder!

**Inspection Checklists are an
ESSENTIAL TOOL for YOUR Nurse Tank
& NH₃ Equipment Compliance Program**

Pesticide & Fertilizer Management Division

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ENFORCEMENT

VIOLATIONS DOCUMENTED DURING
MDA NH₃ INSPECTIONS
ARE SUBJECT TO POSSIBLE

ENFORCEMENT ACTION INCLUDING *MONETARY PENALTIES*

Pesticide & Fertilizer Management Division

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ENFORCEMENT

- ❑ Compliance with MDA Orders **does not** mean that enforcement penalties will not be issued.
 - ❑ MDA inspection, investigation, and enforcement activities may take up to eight months or more to complete.
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QUESTIONS?
