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Commissioner

North Carolina Department of Agriculture  
and Consumer Services  
*Standards Division*

Stephen Benjamin  
Director

April 10, 2017

**MEMORANDUM**

TO: Propane Dealers and Inspection Officials

FROM: Richard Fredenburg, LP-Gas Engineer

SUBJECT: PROTECTION OF LP-GAS CONTAINERS FROM VEHICLE IMPACT

Because of Fire Prevention Code concerns and discussions with fire inspectors and representatives of the propane industry, we are better defining the requirements for protection of LP-Gas containers from impact by vehicles. This applies to all LP-Gas containers except those that are part of a stationary bulk plant as defined in NFPA 58 Sections 4.3.1 and 3.3.9, 2017 edition. All references are to the 2017 edition, unless otherwise stated.

NFPA 58 Section 6.8.1.2 requires LP-Gas containers within 10 feet of a vehicular thoroughfare to be provided with a means of vehicular barrier protection (VBP). (See the definition of VBP in section 3.3.88, with supplemental (non-mandatory) information in A.3.3.88.) Section 6.27.3.13 requires VBP for dispensers within 10 feet of a vehicle thoroughfare or parking location and specifies substantial guard posts or equivalent according to engineering specifications. (See the following paragraph regarding these new requirements.) Section 8.4.2.2 requires VBP for LP-Gas cylinder exchange cabinets not meeting the requirements of 8.4.2.1, with guidelines in the Annex material (non-mandatory).

The 2014 edition of the *LP-Gas Code* added some very specific requirements for protection from vehicles for dispensers and the containers serving dispensers. This continues in section 6.27.3.13 for these requirements. Dispensers installed after January 1, 2014, must have protection that meets these requirements. If protection is to be upgraded for an existing dispenser, it must meet these requirements. If an existing dispenser with existing protection from vehicles needs some repair to the existing protection, then like protection may be provided in the repair or replacement. The alternate forms of VBP described in this memo do not meet the requirements of this new-in-2014 section.

New in 2017 is the removal of VBP requirements for cylinder exchange cabinets that are “lockable ventilated enclosures of metal exterior construction.” Nearly all cabinets in the state meet this definition. Thus, newly-installed such cabinets do not need posts, curbs, or other protection. Posts, curbs, or other protection may stay at existing cabinets or they may be removed. We are interested to see if removal of this protection requirement results in incidents where cylinders are damaged so that they leak. Reports of such incidents are encouraged.

The following forms of protection are considered as meeting VBP requirements.

Protection will generally be curbing or steel posts, except where steel posts are specified. Where they are specified (6.27.3.13), they shall meet the stated requirements. These requirements are not retroactive to sites installed prior

to January 1, 2014.

Where steel posts are not specified, protection by steel posts will meet the intent for VBP when they are set three feet deep in concrete, at least schedule 40, filled with concrete, spaced not more than four feet on center, and not less than four inches outside diameter. If the posts are protecting cylinder exchange cabinets, they shall not interfere with operation of the cabinet doors and in no case, be closer than two feet from the cabinet. Posts protecting other containers shall be at least one foot from the container(s).

Substantial wooden timbers (minimum of 6 inches by 8 inches), such as railroad ties, treated to prevent decay, may also be used for protection. They shall be set in a manner similar to steel posts.

Curbing shall be a minimum of six inches high and fixed in place. Use of pre-cast curbs or substantial wood timbers (as above) is acceptable. The curbing shall be at least as wide as the cabinet(s) being protected, where required. Curbs shall be at least three feet from any part of the container or exchange cabinet they are protecting and shall be placed to protect from each direction vehicles may be expected to approach. Curbs that are not part of a sidewalk shall be fastened in place by rebar or other steel rods that match the diameter of the holes provided for fixing the curbs in place and prevent displacement of the curb when bumped by wheels. If traffic movement is only parallel to the curb, spacing less than three feet from curb to container or cabinet may be acceptable, depending on traffic patterns. Increased spacing may be required if vehicles with more overhang regularly approach the curbing. Curbs shall be replaced if they deteriorate from the specified dimensions.

Alternate means of protecting containers or exchange cabinets may be submitted for approval by this department. Technical documentation (including calculations) demonstrating equivalency or superiority shall be submitted along with the request. Alternate means may not be installed until reviewed and approved.

Originally issued in the late 1990s and updated as appropriate for code revisions and as needed for content.