

MEMORANDUM

To: All Fire Inspectors
From: Christian Noles, P.E., Chief Fire Protection Engineer
NC Department of Insurance/OSFM
Date: Wednesday, May 12, 2004
Re: LP Gas Tanks

The purpose of this memo is to advise all North Carolina Fire Marshals of the procedures involving inspections that involve Liquefied Petroleum Gas Tanks.

Chapter 38 of the 2002 North Carolina Fire Prevention Code [NCFPC] reflects the mandate of the North Carolina General Statutes and Administrative Code, to make LP tanks and associated piping upstream of the outlet of the first stage regulator the duty of the North Carolina Department of Agriculture and Consumer Services [NCDA&CS]. Effectively, all LP piping and tanks upstream of the outlet of the first stage regulator are outside the enforceable regulations of the NCFPC.

Due to the relatively smaller inspection staff of the NCDA&CS, they have asked that North Carolina Fire Inspectors be observant of faulty installation and design of the tanks and associated piping that pose a safety hazard. The fire inspector is encouraged to resolve the issue locally as a courtesy. If the inspection involves an enforcement action, such as a questionable design or a non-responsive owner, the NCDA&CS needs to be contacted to request an inspection.

The NCDA&CS is currently enforcing the 2001 edition of NFPA 58, *Standard for the Storage and Handling of Liquefied Petroleum Gases*. On July 1, 2004, the 2004 edition of NFPA 58 will be enforced. All questions regarding NFPA 58, inspections, vehicle impact, tank placement and enforcement need to be addressed to the following contact:

Mr. Richard Fredenburg (Richard.Fredenburg@ncmail.net)
LP-Gas Inspection Manager
Phone: 919-733-3313
Fax: 919-715-0524

Issues that the inspector should be aware of in NFPA 58, 2001 Edition, include:

- A single stationary LP tank over 2000 gallons water capacity, an aggregate series of LP tanks that have a capacity greater than 4,000 gallons or any LP tank for rooftop installation is required to be submitted to NCDA&CS for approval before installation (Section 1.4.1)
- Containers that show serious denting, bulging, gouging or excessive corrosion are required to be removed from service (Section 2.2.1.8).
- Empty LP gas cylinders that have been previously used, are treated as full cylinders if they are stored indoors (Section 5.2.1.4).
- No more than 200 - 1 pound cylinders (2.7 lb water capacity) can be stored within buildings frequented by the public for retail purposes (Sections 5.3.1.1 & 5.3.1.2).
- No more than 300 pounds of LP gas (735-lb water capacity) can be stored one area in non-public buildings (Section 5.3.2.1).
- An outdoor cylinder exchange cabinet cannot be within 5-feet of a doorway of a building that is designed with two means of egress and 10-feet from a doorway of a building designed with a single means of egress (Section 5.4).
- The cylinder exchange cabinet cannot be located within 20-feet of an automotive station fuel dispenser (Section 5.4.1.2).

- Storage outside of buildings for cylinders awaiting use, resale, or part of a cylinder exchange point shall be located as follows:

Aggregate Quantity of LP Gas	Horizontal distance to Nearest building or property line (not used for a school, church, hospital, athletic field or other public gathering point).	Horizontal distance to Nearest sidewalk, street or property line of a school, church, hospital, athletic field or other public gathering points.	Horizontal distance to Dispensing Station
≤720 lbs	0 ft.	0 ft.	5 ft.
721 to 2,500 lbs	0 ft.	10 ft.	10 ft.
2,501 to 6,000 lbs	10 ft.	10 ft.	10 ft.
6,001 to 10,000 lbs	20 ft.	20 ft.	20 ft.
> 10,000 lbs	25 ft.	25 ft.	25 ft.

- The cylinders at a location open to the public are required to be located within a lockable, ventilated metal locker or rack that prevents tampering with valves (Section 5.4.2).
- Aggregate cylinder storage that exceeds 720 lb propane capacity is required to have a 18-lb dry chemical fire extinguisher with a B-C rating within 50-feet of travel (Section 5.5).
- Protection against vehicle impact is required to be provided in accordance with good engineering practice (Section 5.4.2.2).

Guidance for the proper design for vehicle impact barriers has been established by the NCDA&CS. Their guidelines may be viewed at:

<http://www.ncagr.com/standard/sections/lpgasconcerns/ProtectionFromVehicles.pdf>

NCFPC Section 312 cannot be enforced for vehicle impact since it is not referenced in Chapter 38 of the NCFPC or NFPA 58.

Please note that the above requirements are excerpts and paraphrases of NFPA 58. Please consult the document for complete requirements.

If you have any questions regarding this memo, please contact Chris Noles at (919) 661-5880 (x223).