



Coffee Break Training - Fire Protection Series

Inspection Techniques: Arrangement and Operation of LP-Gas Transfer Systems

No. FP-2012-45 November 6, 2012

Learning Objective: The student shall be able to describe the operational safety requirements for bulk liquefied petroleum gas (LP-Gas) transfer systems.

The model fire codes rely in detail on the provisions of National Fire Protection Association (NFPA) 58, *Liquefied Petroleum Gas Code*, to establish operational safety requirements for bulk LP-Gas transfer facilities. Today's illustration identifies just a few of the safety requirements, including a fenced enclosure to prohibit public access to areas where LP-Gas is stored and transferred. (An enclosure is not required when and where necessary for the conduct of normal business activities.)

In addition to the permanent security features, the following items are commonly employed to prevent fires, explosions, or leaks.

- Ignition sources should be turned off during transfer operations, while connections or disconnections are made, or while LP-Gas is being vented to the atmosphere.
- Smoking, open flame, portable electrical tools and extension lights capable of igniting LP-Gas should not be permitted within 25 feet (7.6 meters (m)) of a point of transfer while filling operations are in progress. This operator has elected to increase that separation distance to 50 feet (15 m).
- Internal combustion engines within 15 feet (4.6 m) of a point of transfer should be shut down while such transfer operations are in progress, with the exception of the following:
 - Engines of LP-Gas cargo tank vehicles, constructed and operated in compliance with NFPA 58 when those engines are driving transfer pumps or compressors on these vehicles to load containers in accordance with the code.
 - Engines installed in buildings as provided in NFPA 58.
- Metal cutting, grinding, oxygen-fuel gas cutting, brazing, soldering, or welding should not be permitted within 35 feet (10.7 m) of a point of transfer while filling operations are in progress.
- Materials that have been heated above the ignition temperature of LP-Gas (920–1,020 °F (493–549 °C) in air) should be cooled before LP-Gas transfer is started.
- Cargo tank vehicles unloading into storage containers should be at least 10 feet (3.0 m) from the container and so positioned that the shutoff valves on both the truck and the container are readily accessible. The cargo tank vehicle should not transfer LP-Gas into dispensing station storage while parked on a public way.
- Where the intake of a building's air-moving equipment is less than 50 feet (15 m) from a point of transfer, it should be shut down while containers are being refilled.

For additional information, refer to NFPA 58; *International Fire Code*[®], Chapter 38; or NFPA 1, *Fire Code*, Chapter 69.



This fenced enclosure provides an additional perimeter of safety and security for this LP-Gas transfer system. Photo courtesy of McLaughlin's, Waynesboro, Pennsylvania.



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