



Fuels Safety Program	Ref. No.: FS -173-10	Rev. No.:
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Subject: Interpretations, Propane Storage and Handling Regulation and Code
Sent to: Propane Fuels Advisory Council, Propane Risk Reduction Group, Interprovincial Gas Advisory Council (IGAC), Posted on Web-Site

During the propane audit inspections, questions arose from the field on certain interpretations. This Advisory addresses the questions that came forward from field staff.

1. Interpretation of the Code requirement on **Emergency Shut-off Valves, clause 7.3.1** of CSA B149.2-05.

Issue: Installation of tanks over 5,000 USWG having vapour phase connection between tanks. This addresses an inquiry on installation of the referenced valve on vapour phase lines. The line installed for the purpose of equalization of vapour pressure does not require an **emergency shut-off valve** installed on this line.

Discussion: Emergency Shut-off valve is defined in the Code as "a valve that is part of a system that is designed to limit and shut down the flow of propane in the event that a vehicle moves away from a transfer point with the transfer hose or swivel-type piping connected to it".

Clause 7.3.1 states that a "An emergency shut-off valve shall be installed at all tank truck or cargo liner transfer locations when

- a) a tank has a capacity in excess of 5,000 USWG (18,900 l); or
- b) tanks are manifolded together, utilizing a common or manifolded **liquid line**, and the tanks have an aggregate volume in excess of 5,000 USWG (18,900 l).

Interpretation: The intention of the code requirements is to mandate the installation of **emergency shut-off valve** only in the system that is designed to limit and shut down the flow of propane in the event that a vehicle moves away from a transfer point (i.e. breaking the hoses or swivel-type connections)

In addition, clause 7.3.1 (b) requires the installation of an **emergency shut-off valve** on a liquid line.

2. This addresses an inquiry on the need for a logo or decal on a consumer tank, stating the propane supplier telephone number to call for emergencies.

There are no requirements in the code or regulation 211/01 for a logo or decal on a consumer tank.

3. Interpretation on clause 7.15 Fencing of filling plants.

A filling plant shall be enclosed with a fence constructed in accordance with Clauses 6.5.2.2 and 6.5.2.3 and at least two gates through the fencing shall be provided, and the fence shall enclose and be located not less than 10 ft (3 m) from

- (a) a container filling room or container filling location;
- (b) any loading and unloading outlet for a cargo liner or tank truck;
- (c) any pump or compressor; and
- (d) any filling plant storage tank.

Although not stated in the Code, **the gates shall be spaced to provide two separate locations for emergency egress during operations. Gates include man-gates, truck-gates, and any type of gate that can provide emergency egress for persons.**

4. Shall any propane facility with a tank in excess of 5000 USWG be considered as filling plant and those 5000 USWG or less as a refill centre?

Filling Plant and **Container Refill** are terms defined in the Code:

Filling Plant (bulk plant) a facility, the primary purpose of which is the distribution of propane. Such plants have bulk storage and usually have container filling and vehicle transfer facilities on the premises. Bulk plants are considered part of this category.

Container Refill Centre (propane service station) an area, including the building, wherein propane is dispensed into containers, and wherein propane storage containers, piping, and pertinent equipment, including dispensing devices, can be located.

It should be noted:

- a) Clause 7.19.1.3 of CSA B149.2-05 limit Container Refill Centres to an aggregate capacity of tanks to 5,000 USWG, and
- b) When an application is submitted to TSSA and the tank capacity for a Filling Plant is less than 5,000 USWG, TSSA will be asking questions to the applicant because the plant's capacity is much smaller than a typical filling plant.

One requirement that is particularly different between these two types of facilities is that, according to the Code, a Filling Plant need to be fenced, while a Container Refill Centre may not require fence.

5. The Regulation states that any site licensed as a refill centre or filling plant does not require a cylinder handling licence as well if used for that purpose, does this also apply to a filling plant that has a separate refill centre on site? There are a lot of facilities that have 2 separate licences, is this necessary?

The O. Reg. 211/01 states in Section 26.(3) that for a **Cylinder Handling Facility** a separate licence is not required if the Cylinder Handling Facility is located at an already licensed **Filling Plant** or a **Container Refill Centre**. Regarding the separate licensing for **Filling Plant** and a **Container Refill Centre**, Section 27 of the O. Reg. 211/01 makes no distinction for licensing these types of plants. Thus, separate licenses are not required. The **Application for an Ontario Licence to Operate a Propane Handling Facility, Container Refill Centre or a Filing Plant** form is common and the applicant should mark the applicable box(es) in the form.

6. Are Private Fuel Outlets (PFO) operators required to submit application with fee?

PFOs are within the scope of Section 27 of O. Reg. 211/01 as Container Refill Centre. Since 2001 the TSSA Propane Storage and Handling Regulation does not differentiate between public or private refill centre, the PFO shall be licensed as container refill and pay the associated fee.

7. Are loading docks considered part of the fixed facility? If they are, what are the requirements?

Loading docks are part of the fixed facilities in propane plants. The requirements in the national code are related to the **storage of cylinders** only, as shown below:

- The space beneath any dock used for the storage of cylinders shall be well ventilated and either enclosed to prevent access and accumulation of combustible material or filled in with well-tamped earth.
- The dock height plus any cylinder standing on it shall be below the top of the fence for the plant.
- The cylinder dock for cylinder storage shall be at least four feet from the fence.

8. If the cylinder has been deemed to have nominal liquid propane left in it, is it acceptable to store the cylinders on their sides?

The CSA B149.2-05 code states in clause 6.1.7 that "The relief valve shall have direct communication at all times with the vapour space of the cylinder". If the plant operator can ensure that this condition is satisfied, there is no violation of the code requirements.

It is suggested that random inspections (chargeable) be performed to ensure that the operator is having proper procedures to ensure that the cylinders piled horizontally have no liquid in contact with the relief valve, such that the condition in 6.1.7 is met and no deviations are experienced. TSSA will be asking for a procedure for this to be developed by the company.

9. Private fuel / industrial use - cylinders for fork lifts. There are situations where a company stores their full fork lift cylinders in a storage bin - something very similar to self storage - enclosed - no door - all metal - would this be acceptable ? purpose - keeps elements off such as snow, ice, rain, sun.

No, unless it meets 6.5.2.4:

6.5.2.4

If **cylinders** stored outdoors are enclosed in a storage cabinet, the storage cabinet shall fulfill the following requirements:

- It shall be at least 6 ft (2 m) high, measured from grade level, unless supplied with a top cover.
- The wall or top cover material shall be either metal wire of not less than No. 9 SWG (3.7 mm), having openings not greater than 2 x 2 in (50 x 50 mm), or sheet metal.
- It shall be ventilated to the outside air on both the top and the bottom of the cabinet, at minimum.
- It shall be securely anchored in an upright position.

10. What are the clearances for tanks with total storage capacity exceeding 10,000 USWG?

R: Clearances for total storage exceeding 10,000 USWG capacity are subject to the TSSA approval (see Table 7.5). Please apply for a variance approval.

11. Can a tank truck be used for storage at a filling facility?

No.

12. Many of the smaller sites such as small gas bar stations that dispense propane to customers have their cylinders stored in a cage sitting in the parking lot near the tank. In clause 6.5.1.9 of the B149.2-05 refers to public thoroughfares and the requirement to be several feet away when storing cylinders at sites other than filling plants. Is a parking lot on a site considered to be a public thoroughfare?

Thoroughfare is not defined in the Code but the Canadian Oxford Dictionary defines it as follows:

"Thoroughfare, 1 a) a road or path open at both ends through which traffic may pass. **b)** a main road or highway. **2** a navigable waterway, esp. a channel for shipping".

According to the above definition, a parking lot near the tank is not a thoroughfare.

13. As the clause below states underground piping must be installed per 6.15 of the B149.1. In the B149.1 it also states in 6.16 that underground piping must be protected per good engineering practice or Fig 1 of Annex C. What is good engineering practice?

The absence of test wires does not necessarily indicate that cathodic protection is not provided. For underground piping, good engineering practice means that the piping is coated (insulated from the ground) with a proper coating material, i.e, polyethylene, epoxy bond or other recognized coating and cathodically protected in accordance to 7.8.6 of CSA B149.2-05.

If there is no evidence that cathodic protection has been installed, it should be assumed that such protection is not provided unless testing demonstrates that it meets the requirements of 7.8.6 of CSA B149.2-05. Wrapping only is not a proper protection against corrosion for underground piping, unless the pipe is installed in accordance in a trough as shown in Figure C.1 of Annex C of CSA B149.2-05. Piping used in the concrete trough shall be protected from corrosion and comply with the requirements of Clause 6 of CAN/CSA-B149.1, with the exception of Clause 6.15.

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