



Fuels Safety Program	Ref. No.: FS-209-14
Liquid Fuels Handling Code Adoption Document Amendment	Date: February 28, 2014

IN THE MATTER OF:

*Technical Standards and Safety Act 2000, S.O. 2000, c. 16, and
Ontario Regulation 223/01 (Codes and Standards Adopted by Reference), and
Ontario Regulation 217/01 (Liquid Fuels)*

The Director for the purposes of Ontario Regulation 217/01 (Liquid Fuels), pursuant to section 7 of Ontario Regulation 223/01 (Codes and Standards Adopted by Reference), hereby provides notice that the LIQUID FUELS HANDLING CODE ADOPTION DOCUMENT published by the Technical Standards and Safety Authority and dated June 1, 2007, as amended, is further amended as follows:

All sections of the Liquid Fuels Handling Code Adoption Document dated June 1, 2001 are revoked and replaced with the following:

The *Liquid Fuels Handling Code 2007* published by the Technical Standards and Safety Authority is hereby adopted, as are the following amendments and additions:

Δ **FS-209-14 (February 24, 2014) – Removal of Inspection Plug Requirement for Existing Single-Wall Suction Systems; Provision of Buried Mechanical Fittings to Accommodate Tank Isolation from Single-Wall Suction Lines; Extension of the Removal Deadline for Foot and Seney Valves from Existing Single-Wall Suction Systems;**

1. Clause 4.5.1.4 is revoked and the following substituted:

4.5.1.4

For existing single-wall suction systems, a vertical check valve shall be installed immediately below the suction pump. Check valves shall comply with Clause 7.5.10.

Background:

In consultation with industry, it was determined that there is no safety reason to require the inspection plug in the original clause 4.5.1.4. Therefore this requirement has been removed from clause 4.5.1.4.

2. Clause 4.5.2.3 is revoked and the following substituted:

4.5.2.3

Product piping shall not have buried mechanical fittings except where fittings are required to isolate an underground tank from a single-wall suction line.

Background:

Operators have found that the foot valve on top of the underground tank would have to be replaced with a seney body (without the plunger), an elbow or a tee fitting in order to allow the tank to be isolated for future testing. This means that a fitting would have to be buried. This contravenes clause 4.5.2.3 which states:

‘Product piping shall not have buried mechanical fittings.’

For suction lines only, FS is making an exception and allowing industry to replace the foot or seney valves with a direct-buried fitting (e.g. a seney body without the plunger, an elbow or a tee). The risk of product leaking to the environment would be minimal since any leaks in the line will drain back into the tank. The risk can be further reduced if the union/fitting is wrapped in petroleum-impregnated pipe wrap (e.g. Denso tape) to prevent corrosion. Operators should note that they may have problems with the suction pump losing prime and may want to consider installing double wall pipe.

3. Clause 7.5.10 is revoked and the following substituted:

7.5.10

- (a) The single vertical check valve specified in Clause 7 shall consist of one single vertical check valve, with shear capability, located immediately under the suction pump and above the highest liquid level of the storage tank. Check valves installed below the vertical check valve at the suction pump, where double-wall piping is not used, shall be removed by December 31, 2014.
- (b) The tank and product piping must have passed an initial precision leak test and thereafter the following shall be conducted until the check valves are removed:
 - (i) annual precision leak test on the product piping; or
 - (ii) monthly statistical inventory reconciliation (SIR).
- (c) Double wall suction systems that did not terminate in both a sump at the top of the tank, and underneath the suction pump or in a transition sump, shall be treated as single wall pipe and shall comply with clause 7.5.10(a).

Background:

Prior to the 1993 Gasoline Handling Code, many operators who had suction systems at their gas stations, would install a foot valve in the tank or a seney valve just above the tank so that the suction pump would not lose prime. The 1993 GHC mandated double wall piping for the first time. At that time an exception was provided to allow single wall piping on suction systems provided there was only one vertical check valve installed underneath the pump. Clause 4.5.1.3 of the 2001 LFHC also allowed this exception.

There are also numerous suction sites that are equipped with double wall piping and direct buried coaxial fittings that “seal off” one end of the piping secondary. The double wall piping does not terminate inside an approved sump. So in effect, single wall piping is connected to the seney or the suction pump.

Just after the Liquid Fuels Handling Code 2007 was published, Fuels Safety found that there were a number of small sites that still had suction systems with either a foot or a seney valve installed. These operators requested more time to remove these valves.

To accommodate those operators, Fuels Safety provided additional time to remove the foot or seney valves in CAD Amendment FS-124-08. The deadline was March 31, 2014. Fuels Safety has become aware that there are operators in the north who cannot do the removal in the winter due to freezing conditions; thus, the deadline has been extended to December 31, 2014. No further extensions will be granted.

4. This amendment is effective February 24, 2014.

FS-206-13 (October 21, 2013) – Precision Leak Test Reporting

1. The following clauses are added to subsection 7.5:

7.5.12

Where a precision leak test performed by a precision leak testing company cannot be confirmed as a pass, the company performing the test shall immediately

- (a) complete a Precision Leak Test Failure Report in the form prescribed by TSSA;
- (b) lock out and tag the affected equipment, in accordance with 7.5.13; and
- (c) provide a copy of the Precision Leak Test Failure Report to
 - (i) the operator of the equipment or facility; and
 - (ii) TSSA.

7.5.13

(a) Where the fail point is determined to be the fuel line, the affected dispenser(s) must be locked out and tagged so that the fueling system is removed from service until it has been retested and passed.

(b) Where the fail point is determined to be the tank, the fill pipe/fill box to that tank must be locked out and tagged to prevent refilling of the tank until it has been retested and passed (the dispensing of fuel in the tank is allowed since it will reduce the amount of fuel available to potentially leak).

- (c) If the fail point cannot be determined, then both the dispenser and the fill pipe/fill box of the tank system involved shall be locked out and tagged and the system shut down immediately until it has been retested and passed.

7.5.14

The operator of the equipment that is the subject of a Precision Leak Test Failure Report shall not use the equipment (except for retesting purposes) until the condition has been corrected and confirmation of the correction has been forwarded to TSSA.

- 2. This amendment is effective immediately.

FS-204-13 (April 10, 2013) – Update to Appendix A of the LFHC to Adopt New ULC Standards

- 1. The following ULC standards in Appendix A, Reference Publications, are revoked:
 - (a) ULC/ORD-C58.9-97, *Secondary Containment Liners for Underground and Aboveground Flammable and Combustible Liquid Storage Tanks*
 - (b) Tank-Refurbishing – *Technical Supplements for the Refurbishing of Underground and Aboveground Tanks* [includes ULC 601(A), ULC 603(A), ULC 615(A) and ULC 630(A)]
- 2. The following ULC standards in Appendix A, Reference Publications, are revoked on October 18, 2015:
 - (a) ULC/ORD-C58.15-92, *Overfill Protection Devices for Flammable Liquid Storage Tanks*
 - (b) ULC/ORD-C142. 19-94, *Spill Containment Devices for Aboveground Flammable and Combustible Liquid Storage Tanks*
- 3. The following ULC standards are added to Appendix A, Reference Publications:
 - (a) CAN/ULC-S661-10, *Standard for Overfill Protection Devices for Flammable and Combustible Liquid Storage Tanks*
 - (b) CAN/ULC-S663-11, *Standard for Spill Containment Devices for Flammable and Combustible Liquid Aboveground Storage Tanks*

Note: the standards added by section 3 are alternate standards to standards that have an end date October 18, 2015 listed in section 2. The overlap period will allow the existing listees time to comply with the new requirements in order to continue their listing.
- 4. The following ULC standards are added to Appendix A, Reference Publications:
 - (a) CAN/ULC-S667-12, *Metallic Underground Piping for Flammable and Combustible Liquids*
 - (b) CAN/ULC-S668-12, *Standard for Secondary Containment of Aboveground Flammable and Combustible Liquid Tanks*
- 5. This amendment is effective April 10, 2013

FS-199-12 (October 1, 2012) – Adoption of 2012 TSSA Environmental Management Protocol

1. The TSSA *Environmental Management Protocol for Fuel Handling Sites in Ontario* (August, 2012) is adopted.
 2. This amendment is effective on December 1, 2012.
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FS-172-10 (July 30, 2010) – ULC-ORD C142.13 1997 Mobile Refuelling Tanks (expired)

1. Clause 5.8.2 is revoked and the following substituted:
 - (a) Only approved highway tanks and approved mobile refueling tanks shall be used; and
 - (b) Tanks manufactured to comply with ULC/ORD 142.13 may continue to be used until January 1, 2013 provided that they have been issued an Equivalency Certificate by Transport Canada and are marked with the Equivalency Certificate number.
2. This amendment is effective immediately.

Background:

The Transportation of Dangerous Goods (TDG) Regulations require that all petroleum products (diesel, gasoline, aviation fuel, naphtha, kerosene), be transported in United Nations mobile Intermediate Bulk Containers (IBC's) built in compliance with CAN/CGSB 43.146 "Intermediate Bulk Containers for the Transportation of Dangerous Goods" or in a tank vehicle built in compliance with CSA-B620.

The TDG Regulations also allowed a mobile refueling tank, built before 2003 and certified to ULC ORD-C142.13-1997, to be substituted for a UN standard mobile IBC until 2010.

Transport Canada allows a person who wishes to carry on an activity related to transporting dangerous goods in a way that is not in compliance with the Transportation of Dangerous Goods (TDG) Regulations to apply for an Equivalency Certificate. The applicant must show that the way in which the activity will be carried on will provide a level of safety of equivalent to complying with the regulations.

FS-138-08 (June 29, 2008) – Vents for ULC S643 Aboveground Tanks made by DTE Industries Limited (expired)

- 1.(1) Aboveground tanks made by DTE Industries Limited, certified to ULC S643 but not complying with Clauses 4.3.2.5(d) & 4.3.2.6 of the Liquid Fuels Handling Code 2007, which require the vents to terminate 150 mm above the spill containment device may be used.
 - 1.(2) This Order is effective immediately and expires on December 31, 2008.
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FS-131-08 (June 16, 2008) – Written Notification Requirement for Permanent Closure

1. Clause 2.4.2.2 is revoked and the following substituted:

2.4.2.2 - Where an underground storage tank is removed permanently and the site no longer possesses petroleum storage tanks, the owner or authorization holder of a facility, the owner or authorization holder of the storage tank system, or the owner of the property on which the equipment is installed, as the case may be, shall

- (a) remove or make product-free the remainder of the system;
 - (b) provide written notification to the Director, the Ministry of Environment and the local municipality within 90 days of the removal of the equipment; and
 - (c) comply with Clause 8.3.
2. Clause 3.4.2.2 is revoked and the following substituted:

3.4.2.2 - Where an aboveground storage tank is removed permanently and the site no longer possesses petroleum storage tanks, the owner or authorization holder of a facility, the owner or the authorization holder of the storage tank system, or the owner of the property on which the equipment is installed, as the case may be, shall

- (a) remove or make product-free the remainder of the system;
 - (b) provide written notification to the Director, the Ministry of the Environment and the local municipality within 90 days of the removal of the equipment; and
 - (c) comply with Clause 8.3.
3. This amendment is effective June 30, 2008.

Background:

Clauses 2.4.2.2 (b) and 3.4.2.2 (b) were added as they were allowances included in the previous Liquid Fuels Handling Code and were simply omitted in the current code.

FS-129-08 (June 16, 2008) – Signage at Marinas

1. Clause 5.5.9 is revoked and the following substituted:

5.5.9 - At each marina there shall be three legible signs, visible to all persons using the dispenser, with minimum dimensions of 18.5 cm x 8.25 cm. The signs shall read:

- (a) WARNING – NO ONE OTHER THAN THE FUEL ATTENDANT SHALL BE ON BOARD A WATERCRAFT DURING REFUELLING;
- (b) WARNING – ALL ENGINES SHALL BE OFF DURING REFUELLING, AND THERE SHALL BE NO SOURCES OF IGNITION ON BOARD OR WITHIN 3 METRES OF THE FUEL TRANSFER POINT; and
- (c) WARNING – NO PERSON SHALL START UP A GASOLINE-POWERED WATERCRAFT UNLESS THE ENGINE SPACE BLOWER HAS BEEN OPERATED FOR A PERIOD OF NOT LESS THAN FOUR MINUTES IMMEDIATELY BEFORE START-UP.

2. This amendment is effective July 31, 2008.

Background:

Clause 5.5.9 is amended to harmonize with clause 39 of the Canada Shipping Act – Small Vessel Regulation, which requires that:

No person shall start up a gasoline-powered small vessel unless the engine space blower has been operated for a period of not less than four minutes immediately before start up.

FS-128-08 (June 16, 2008) – Full-Serve Marinas

1. Clause 5.5.10 is added:

5.5.10 - All marinas shall be full-serve facilities.
2. This amendment is effective June 30, 2008.

Background:

Clause 5.5.9 provides that:

At each marina there shall be three legible signs, visible to all persons using the dispensers...one sign shall read "WARNING – NO ONE OTHER THAN THE FUEL ATTENDANT SHALL BE ON BOARD A WATERCRAFT DURING REFUELING."

As a result, clause 5.5.10 is added to clarify the requirement that all marinas shall be full-serve facilities.

FS-127-08 (June 16, 2008) – Distance for Gasoline to Diesel Dispenser

1. Clause 6.3.5 is added:

6.3.5 - Section 6.3.3 does not apply to the dispensing of diesel fuel where a diesel fuel dispenser is more than 6 metres from a gasoline dispenser or where the gasoline dispensers are shut off.
2. This amendment is effective June 30, 2008.

Background:

Clause 6.3.5 is added, as it was an allowance included in the previous Liquid Fuels Handling Code and was simply omitted in the current code.

FS-126-08 (June 16, 2008) – Deletion of Requirement for High Outline Vehicles to Refuel Outside Islands

1. Clause 5.2.11 is revoked.
2. The signs that were required by clause 5.2.11 may be removed.
3. This amendment is effective June 30, 2008.

Background:

Clause 5.2.11 provides that:

Self-serve facilities shall have signs posted directing all high outline vehicles that could interrupt the line of vision of the self-serve attendant to refuel only on the outside of the islands.

The above requirement is redundant, as clause 5.2.5 requires that all facilities “shall be equipped with a video monitoring system that allows the self-serve attendant a constant view of all dispensing positions.” As a result, clause 5.2.11 is deleted.

FS-125-08 (June 16, 2008) – Allowance for Usage of Approved Spill Containment Device Equipped with Emergency Vent

1. Clause 4.3.2.5 is revoked and the following is substituted:
 - 4.3.2.5 - Emergency vents on aboveground tanks shall
 - (a) be equipped with a cover that prevents the escape of vapour from the tank during normal operating conditions;
 - (b) terminate outdoors;
 - (c) where vapour recovery is required, be equipped to seal to a maximum pressure of 3.5 kPa (0.5 psi) gauge; and
 - (d) terminate at a minimum of 150 mm above the spill containment device unless the emergency vent is integral to the spill containment device, and is approved to ULC/ORD-C142.19-94, *Spill Containment Devices for Aboveground Flammable and Combustible Liquid Storage Tanks.*
2. Clause 4.3.2.6 is revoked and the following is substituted for it:
 - 4.3.2.6 - The vents for tanks built to ULC S643 shall terminate a minimum of 150 mm above the spill containment device unless the vent is integral to the spill containment device, is approved to ULC/ORD-C142.19-94, *Spill Containment Devices for Aboveground Flammable and Combustible Liquid Storage Tanks.*
3. This amendment is effective June 30, 2008.

Background:

ULC has approved a spill containment device that includes an integral vent. As a result, TSSA will allow the use of this approved equipment.

FS-124-08 (June 16, 2008) – Removal of Foot and Seney Valves from Existing Single Wall Suction Systems

1. Clause 7.5.10 is revoked and the following substituted:

7.5.10

The single vertical check valve specified in Clause 7 shall consist of one single vertical check valve located immediately under the dispenser pump and above the highest liquid level of the storage tank, except where double-wall piping is used. Check valves installed between the vertical check valve at the suction pump and/or below the highest liquid level of the storage tank, where double-wall piping is not used, shall be removed by ~~March 31, 2014~~ December 31, 2014,¹ provided that the tank and product piping has passed an initial precision leak test and thereafter the following is conducted:

- (a) annual precision leak test; or
- (b) monthly statistical inventory reconciliation (SIR).

2. This amendment is effective June 30, 2008.

Background:

Clause 4.5.1.4 provides that:

For existing single-wall suction systems, a vertical check valve shall be installed immediately below the suction pump, and an inspection plug shall be installed immediately below the check valve between the check valve and the tank. Check valves shall comply with clause 7.5.10.

The above amendment provides a timeframe of removal for the existing installations that still have check valves installed between the vertical check valve at the dispenser pump and/or below the highest liquid level of the storage tank. An initial precision leak test will confirm the integrity of the line and the storage tank. Subsequent annual precision leak tests or monthly statistical inventory reconciliation (SIR) will determine the ongoing integrity.

FS-109-07 (September 18, 2007) – Corrections to the Liquid Fuels Handling Code (re Under-Dispenser Sump Leak Detection and Maintenance and Testing of Storage Systems where Piping Experiences a Positive Pressure)

¹ Deadline changed from March 31, 2014 to December 31, 2014 by CAD Amendment FS-209-14

1. Clause 4.5.2.8 is revoked and the following substituted:

For existing sites, under-dispenser sump leak detection may be performed manually until May 31, 2013, provided that

- (a) a visual inspection is performed on a daily basis on all sumps and liquid is removed in accordance with Clause 4.5.2.7;
- (b) a written record is kept of the condition inside the sump; and
- (c) the record is retained for a minimum of 3 years.

2. Clause 4.6.9 is revoked and the following substituted:

The equipment required by Clause 4.6.5 shall be maintained and tested at least once per year or in accordance with the manufacturer's instructions, and a written record of the maintenance and testing shall be retained.

3. These amendments will be effective on the 1st day of September 2007.

Any person involved in an activity, process or procedure to which this document applies shall comply with this document.

This amendment is effective immediately.

DATED this 28th day of February 2014.

ORIGINAL SIGNED BY

John Marshall
Director, O. Reg. 217/01 (Liquid Fuels)

Sent to: TSSA Liquid Fuels Council, TSSA Liquid Fuels Risk Reduction Group, CFA, CIPMA, OFM, COHA, ULC, CSAO, OPCA, MPHCA and posted to the TSSA website