

FIRE MARSHAL BULLETIN

Storage Tank System - Fuel Dispenser Replacements

EFRS FMB 25-001



PURPOSE

The purpose of this interpretation is to clarify the application of the Safety Codes Act - Permit Regulation - Alberta Regulation 204/2007 and the National Fire Code - 2023 Alberta Edition (NFC(AE)) for permit requirements pertaining to the replacement of storage tank system components including fuel dispensers at fuel stations.

DISCUSSION

Edmonton Fire Rescue Services (EFRS) Fire Prevention Tanks Group has observed that several petroleum industry companies and certified petroleum mechanics have been replacing components of storage tank systems, including the "one-for-one" replacement of fuel dispensers/pumps at fuel stations within the City of Edmonton, without obtaining the requisite permits.

EFRS Tanks Group has received inquiries regarding the necessity of permits for the replacement of these devices. Some members of the Petroleum Industry have indicated their belief that permits are not required, citing that all work is conducted above the shear valve and that power and communication wiring is reconnected without modification. Furthermore, the industry's position is that permits are only mandated when new products are introduced, piping is altered, or electrical upgrades are performed.

During inspections of fuel stations where "one-for-one" fuel dispenser replacements occurred and other components were "reconnected," EFRS Tanks Fire Prevention Officers identified several system deficiencies attributable to these replacements. These deficiencies include, but are not limited to, the removal of essential emergency stop buttons associated with the dispensers, the removal or damage of two-way communication systems, and the concurrent replacement of other fuel tank components.

The requirements for Storage Tank System Permits are delineated in the Safety Codes Act - Permit Regulation - Alberta Regulation 2-4/2007, Part 1, Section 10.

The obligation to obtain all necessary permits for work on storage tank systems PRIOR to the commencement of work is stipulated in Division C of the National Fire Code - 2023 Alberta Edition under Sentence 2.2.3.1.(5).

Specific requirements pertaining to storage tank system components are detailed in the National Fire Code - 2023 Alberta Edition, Part 4. The installation of these components must conform to specific CSA and CAN/ULC Standards, as outlined in the Fire Code. Compliance with these requirements is verified through inspections conducted by Fire Safety Codes Officers during the permitting process.

CODE REFERENCES

Safety Codes Act - Permit Regulation - Alberta Regulation 204/2007

Part 1, Section 10 states:

Fire Discipline

Storage Tank System Permit

10 A permit in the fire discipline is required to install, alter or remove a storage tank system to which the Alberta Fire Code applies.

National Fire Code - 2023 Alberta Edition, Division C

Sentence 2.2.3.1.(5) states

2.2.3. Approvals

2.2.3.1. Storage Tank Systems

5) Except as permitted by Sentence (4) for outside aboveground *storage tank systems*, no person shall install or alter any storage tank system referred to in Part 4, unless

- a) required permits or approvals have been obtained from the *authority having jurisdiction*,
- b) plans , drawings and specifications of the system or equipment have been examined and accepted by the *authority having jurisdiction*, and
- c) the plans, drawings and specifications referred to in Clause (b) be authenticated by a registered engineering professional as defined in the NBC(AE).

National Fire Code - 2023 Alberta Edition, Division B

Sentence 4.6.3.1.(1) states:

4.6.3. Dispensing Systems

4.6.3.1. Dispensers

1) Fixed dispensers for *flammable liquids* or *combustible liquids* shall conform to CSA B346-M, "Power-Operated Dispensing Devices for Flammable Liquids."

Subsection 4.6.5 states:

4.6.5. Delivery Hose and Nozzles

4.6.5.1. Delivery Hose

1) Delivery hose shall conform to CAN/ULC-S612, "Standard for Hose and Hose Assemblies for Flammable and Combustible Liquids."

4.6.5.2. Hose Nozzle Valves

1) Every hose nozzle valve through which a Class I or II liquid is dispensed by a motorized dispenser into a vehicle tank shall

- a) be automatic closing, as required in Sentence (2), and
- b) conform to CAN/ULC-S620, "Standard for Hose Nozzle Valves for Flammable and Combustible Liquids."

4) When a hose nozzle valve with a hold-open device is used at an attended *self-service outlet*, a break-away coupling conforming to CAN/ULC-S644, "Standard for Emergency Breakaway Fittings for Flammable and Combustible Liquids," shall be provided.

Sentence 4.6.4.1.(1) states:

4.6.4. Shut-off Devices

4.6.4.1. Location and Identification

1) A device to shut off power to all dispensers and pumps shall be provided at a location not less than 6 m and not more than 30 m away from the dispensers and pumps. (See Note A-4.6.4.1.(1) and (2).)

Sentence 4.6.8.2.(4) states:

4.6.8. Supervision and Dispensing Procedures

4.6.8.2 Self-service Outlets

4) A 2-way communication system between the control console and each pump island shall be provided at self-service outlets.

National Fire Code - 2023 Alberta Edition, Division A

Sentence 1.4.1.2.(1) defines:

Authority having jurisdiction means a safety codes officer in the fire discipline exercising authority pursuant to designation of powers and terms of employment in accordance with the Safety Codes Act.

Combustible liquid means a liquid having a flash point at or above 37.8°C and below 93.3°C. (See Subsection 4.1.2. of Division B.)

Flammable liquid means a liquid having a flash point below 37.8°C and having a vapour pressure not more than 275.8 kPa (absolute) at 37.8°C as determined by ASTM D323, "Standard Test Method for Vapor Pressure of Petroleum Products (Reid Method)." (See Subsection 4.1.2. of Division B.)

Fuel-dispensing station means any premises or part thereof at which *flammable liquids* or *combustible liquids* are dispensed from fixed equipment into the fuel tanks of motor vehicles, watercraft or aircraft.

Self-service outlet means a *fuel-dispensing station* other than a marine fuel-dispensing station where the public handles the dispenser.

Storage tank means a vessel for *flammable liquids* or *combustible liquids* having a capacity of more than 230 L, and designed to be installed in a fixed location.

Storage tank system means a system for the storage and dispensing of *flammable liquids* and *combustible liquids* and is not limited to *storage tanks*, associated piping, vents, pumps and dispensing equipment.

APPLICATION

This interpretation applies to the replacement of components of dispensing systems for flammable and combustible liquid storage tank systems. This includes the “one-for-one” replacement of pumps/dispensers at fuel stations.

INTERPRETATION

The replacement of the components of a fuel station dispensing system including a “one-for-one” replacement of the pumps/dispensers is considered to be an alteration to the storage tank system and therefore requires a Permit issued by the Edmonton Fire Rescue Services Fire Prevention Tanks Group. This interpretation is in alignment with other Authorities Having Jurisdiction within the Province of Alberta who also require permits for the replacement of pumps/dispensers. Cosmetic changes where only column, canopy or dispenser coverings are replaced to reflect new or updated branding, do not require permits from EFRS Fire Prevention Tanks.

Fuel Tank Permits are applied for at the following link:

[City of Edmonton Flammable/Combustible Liquid Storage Tank Permits](#)

In accordance with the National Fire Code - 2023 Alberta Edition, Division C, Article 2.2.3.1:

- 1) Only individuals *approved* by the Provincial Fire Administrator are permitted to install, remove, repair or maintain aboveground or *underground storage tank systems*.
- 2) *Approved* persons are considered qualified to install, remove, repair and maintain aboveground and *underground storage tank systems* when they have received certification from
 - a) the Canadian Petroleum Contractors Association (CPCA),
 - b) the Technical Standards and Safety Authority (TSSA), or
 - c) the Petroleum Tank Management Association of Alberta (PTMAA).

When applying for permits within the City of Edmonton for the replacement or repair of components located aboveground but for an underground storage tank system, please select the following from the permit application page:

Description of Work

Scope of work will be:

- ☐ Installing new tanks and optionally removing old ones.
- ☒ Replacing Underground Lines
- ☐ Removing all tanks and decommissioning a site
- ☐ Removing one or more tanks on an existing site
- ☐ (None)

PERMIT APPLICATION REQUIREMENTS

The following outlines the submission requirements for permit application submissions related to the replacement of pumps/dispensers in fuel stations, including what is being considered as “one-for-one” dispenser replacements.

In accordance with the National Fire Code - 2023 Alberta Edition, Division C, Clause 2.2.3.1.(5)(c), the plans, drawings and specifications for the alteration of an underground storage tank system must be authenticated by a registered engineering professional as defined in the NBC(AE).

The site plan and scope of work required for this permit requires authentication by an Engineer as required by the Fire Code.

1. SITE PLAN - A site plan must indicate the following, at a minimum:
 - a. Location of key infrastructure including the store, point of sale and dispensers
 - b. Location of existing emergency stop buttons
 - c. Location of existing 2-way communication devices
 - d. Distance from the dispensers to the point-of-sale
 - e. Distance from the dispensers to manholes and sewer openings
 - f. Details on the dispenser island and dispenser collision protection
2. SCOPE OF WORK - A scope of work must be included that clearly defines, at a minimum
 - a. Which components of the system are being replaced (dispensers, hoses, nozzles, etc..)
 - b. Which components of the system are to remain and function as intended prior to replacement
3. SPECIFICATION SHEETS - Specification Sheets must be provided for the following, at a minimum
 - a. Dispenser specification sheet that clearly indicates that the dispenser meets CSA B346-M
 - b. Hose specification sheet that clearly indicates that the hoses meet CAN/ULC-S612
 - c. Nozzle specification sheet that clearly indicates that the nozzles meet CAN/ULC-S620
 - d. Break-away Coupling specification sheet that clearly indicates it meets CAN/ULC-S644

Note: In the event that the dispenser/pump unit as an entire unit has been certified as compliant by CAN/ULC or equivalent, the certification document for the unit can be submitted in lieu of specification sheets for each individual component.

4. PETROLEUM MECHANIC CERTIFICATION - The name, contact information and Certification number of the Certified Petroleum Mechanic responsible for the work.

PERMIT PROCESS

The permit process for the replacement of dispensers/pumps at fuel stations will follow the same requirements as all other permits for the installation, removal or alteration of flammable/combustible liquid tanks.

A permit application is required to be submitted **PRIOR** to any work commencing on site. After a permit has been **ISSUED** by EFRS Fire Prevention Tanks Group, work can begin on site.

****The installation or alteration of storage tank system components prior to the issuance of a permit is a violation of the Safety Codes Act and the National Fire Code and could result in penalties and or fines****

Once the work has been completed on site, a final inspection by EFRS Fire Prevention Tanks Group is required **PRIOR** to the dispensers/pumps being placed in service. This inspection will include testing of emergency stop buttons which will require the station to be shutdown. Upon the completion of a final inspection with no deficiencies, a Permit Services Report will be issued which confirms compliance of the installation with the National Fire Code and grants permission for the dispensers/pumps to be put into service.

****The use of new components of a system installed under permit prior to the issuance of a permit services report is a violation of the Safety Codes Act and the National Fire Code and could result in penalties and or fines****

ADDITIONAL INFORMATION

It is the expectation of Edmonton Fire Rescue Services Fire Prevention that if at any time, during a replacement of components of a storage tank system, additional deficiencies are discovered by Certified Petroleum Mechanics, these deficiencies are brought to our attention and rectified with the owner of the site. It is not permitted to replace components of a system while leaving other components or aspects of the system deficient.

Although this Fire Code Interpretation has been directed at the replacement of fuel dispensers/pumps specifically, it is expected that the replacement of any component of a storage tank system is done so under a Permit issued by EFRS Fire Prevention as this is considered to be an alteration of the system as noted above.

Failure to comply with the National Fire Code (Alberta Edition) can result in fines and imprisonment as outlined in the Safety Codes Act.

Fire Marshal's Office
Edmonton Fire Rescue Services
Fire Prevention

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