Alberta Municipal Affairs

ABSA
the pressure equipment safety authority

Information Bulletin No. IB21-006 August 3, 2021

**Documents issued by Alberta Municipal Affairs**
**Governing Equipment Under Jurisdiction of**
**the Gas Safety discipline and the Pressure Equipment Safety disciplines**

This Information Bulletin supersedes IB16-011 Rev.1 issued on July 13, 2016 which is hereby rescinded.

The following documents have been updated by Alberta Municipal Affairs, Community & Technical Support. The subject matter includes pressure equipment having some overlap of responsibilities of the gas discipline and the pressure equipment discipline. These documents were developed collaboratively by the Safety Codes Council's gas and pressure equipment sub-councils, and the respective discipline Administrators.

1) Gas Safety Information Bulletin, STANDATA 20-GCB-08 [Rev2] (February 2021) Liquefied Petroleum Gas Storage Vessel Installations

   The purpose of this STANDATA is to inform the propane industry of the requirements associated with the installation of Liquefied Petroleum Gas (LPG) Storage Vessels in domestic and commercial applications.

2) Gas Safety Information Bulletin, STANDATA 20-GCB-10 [Rev3] (February 2021) Fuel Gas Pressure Piping in Plants

   The purpose of this STANDATA is to ensure that Designers and Installers are aware of the provisions for fuel gas service pressure piping above and below 15 psi (103 kPa) and the necessary engagement with the authorities having jurisdiction before designs are finalized and the work proceeds.

3) Gas Safety Information Bulletin, STANDATA 20-GCB-11 [Rev2] (February 2021) Propane Storage Tanks Designed for 200 PSIG

   The purpose of this STANDATA is to clarify the operation of the propane storage tanks designed for 200 psig in existing installations in the province. Import of such tanks from outside Alberta is not acceptable for use in Alberta.

4) Notice: Servicing Intervals for Pressure Relief Valves on Tanks 2500 USWG and Less STANDATA Gas Notice (February 1, 2021)

This document applies to the servicing of pressure relief valves (PRVs) installed on pressure vessels designed and fabricated in accordance with CSA B51 Boiler, pressure vessel, and pressure piping code, and installed and in service within the scope of the CSA B149.2, Propane storage and handling code.

Copies of the referenced documents are attached below for reader's convenience. These documents were current at the date this Information Bulletin was issued. Please refer to the documents published on the Alberta Government's website for the latest version of the documents.

If further clarification on these documents is required, you may contact the Alberta Municipal Affairs - Community & Technical Support, visit the Web site https://www.alberta.ca/gas-codes-and-standards.aspx , contact the local ABSA office, or visit ABSA Web site https://www.absa.ca/ for further information.

*<original signed by>*

Mike Poehlmann, P.L. (Eng.)
Administrator, Province of Alberta Pressure Equipment Safety
Chief Inspector, ABSA the pressure equipment safety authority

### Liquefied Petroleum Gas Storage Vessel Installations

**PURPOSE**

This bulletin has been jointly developed by Alberta Municipal Affairs, Safety Codes Council, and the Alberta Boilers Safety Association (ABSA) to inform the propane industry of the requirements associated with the installation of Liquefied Petroleum Gas (LPG) Storage Vessels in domestic and commercial applications.

**DISCUSSION**

**1.** ABSA shall be responsible for the design review and registration of all LPG vessels. New construction inspection of all LPG vessels built in Alberta shall be performed by ABSA Safety Codes Officers. ABSA Safety Codes Officers will also be involved when alterations or repairs to these pressure vessels are being considered.

**2.** For LPG storage vessels up to 10 cubic metre capacity in domestic and commercial use, the installation inspections will be carried out under the *Gas Code Regulation* by a Gas Group A Safety Codes Officers.

**CODE REFERENCES**

The installation inspections under the *Gas Code Regulation*, the CSA B149.1 *Natural gas and propane installation code,* and the CSA B149.2 *Propane storage and handling code* shall include but not be limited to the verification of:

- CSA B149.1 *Natural gas and propane installation code*
  - 4.3 Responsibilities of the installer
  - 5 Pressure controls

- CSA B149.2 *Propane storage and handling code*
  - 7 Tank systems, filling plants, and refill centres
    - Location[1], with respect to property lines, buildings, adjacent tanks, etc.;
    - Protection from physical damage;
    - Fencing;
    - Posting of warning signs; and
    - Dispensing points and other applicable requirements

**3.** For LPG storage vessels over 10 cubic metre capacity in domestic and commercial use[2], initial inspections to be carried out by ABSA Safety Codes Officers. Installation inspection to

[1] Location distances for LPG vessel installations must comply with Federal requirements, if specified, in areas under Federal Jurisdiction.

be carried out under the *Gas Code Regulation* by Group A Gas Safety Codes Officers as indicated above.

ABSA initial inspections shall include verification of:

- Vessel nameplate information (CRN, design pressure, design temperature, etc.) against the Manufacturer's Data Report;
- Safety valve (size, capacity and code stamping);
- Manway requirements;
- Assignment and application of the Alberta Identification Number [(A) number];
- Entry to ABSA's boiler and pressure vessel registration database.

**APPLICATION**

All in-service tanks should be inspected by competent persons with training in tank inspection and typical tank defects and in the action to take when defects are found. The Canadian Propane Association offers this type of training.

**INTERPRETATION**

If propane suppliers are concerned about the status of a particular tank or tanks registration, they could contact the Alberta Municipal Affairs office, visit the Web site: www.municipalaffairs.alberta.ca/cp_index.cfm, and/or contact the local Alberta Boilers Safety Association (ABSA) office or visit the ABSA Web site: http://www.absa.ca/ for further information.

[2] Commercial use shall include facilities where the storage vessels are used for vehicular fuel filling, fuel dispensing, commercial construction site usage, and all other fuel uses, but does not include propane when used as a feedstock in a petroleum refinery or chemical plant.

**Fuel Gas Pressure Piping in Plants**

## PURPOSE

This bulletin has been jointly developed by Alberta Municipal Affairs, the Pressure Equipment Sub-Council, the Alberta Boilers Safety Association (ABSA) and the Safety Codes Council to inform industry of the requirements associated with the installation of fuel gas pressure piping in Alberta. This bulletin identifies the division between the *Gas Code Regulation* (AR 111/2010) and the *Pressure Equipment Safety Regulation* (AR 49/2006) for fuel gas piping at Plants with and without **Owner-user** programs

## DISCUSSION

**Designers** and **Installers** must adhere to the provisions for fuel gas service pressure piping above and below **15 psi (103 kPa)**, and engage the authorities having jurisdiction before designs are finalized and the work proceeds.

## CODE REFERENCES

The CSA B149.1 - *Natural gas and propane installation code* addresses all piping systems that convey fuel gas to fuel burning appliances, at all pressure levels.

*The Pressure Equipment Safety Regulation* under the *Safety Codes Act* adopts certain *ASME B31 Piping Codes and the CSA B51* Boiler*,* pressure vessel, and pressure piping code*.* The *Pressure Equipment Safety Regulation* addresses “pressure piping” (as defined below).

Gas piping used exclusively for fuel purposes regulated under the *Gas Code Regulation* is specifically exempt from the *Pressure Equipment Safety Regulation.*

## APPLICATION

This STANDATA establishes the specification break points between the *Gas Code Regulation (AR 111/2010)* and the *Pressure Equipment Safety Regulation* (*AR 49/2006)* for piping in fuel gas service installed at Plants with and without **Owner-user** programs.

- Fuel gas piping for pressure not exceeding 15 psi (103 kPa) are exempt from ABSA registration requirements. Fuel Gas piping at all pressures located in between the appliance shut-off valve and the burner shall be designed and constructed in accordance with the *Gas Code Regulation.*
- Process gas piping for pressure exceeding 15 psi (103 kPa) shall be designed and constructed as “pressure piping” in accordance with the *Pressure Equipment Safety Regulation.*


Issue of this STANDATA is authorized by the Gas Administrator and the Pressure Equipment Administrator

*[Original Signed]*
Sidney Manning Mike Poehlmann

Fuel gas piping for pressure exceeding 15 psi (103 kPa) located upstream of the appliance shut-off valve must be designed and constructed in accordance with the gas code regulation unless it is located at **Owner-user** facilities where this Standata identifies an option for the piping system to be designed and constructed as "pressure piping" in accordance with the *Pressure Equipment Safety Regulation.* Drawings and design information must clearly indicate the code of design and construction, and indicate where any code changeover occurs.

The *Pressure Equipment Safety Regulation* does not apply to:

(a) a pressure piping system operating at and with relief valves set at 103 kPa (15 psig) or less;
(b) piping systems used to convey gas exclusively for fuel purposes and that is subject to the Gas Code Regulation.

Administration of the *Pressure Equipment Safety Regulation* has been delegated to ABSA.
In the *Pressure Equipment Safety Regulation*, the following definitions apply to the design and construction of a pressure piping system:

**"Pressure Piping System"** means pipe, tubes, conduits, fittings, gaskets, bolting and other components that make up a system for the conveyance of an expansible fluid under pressure and may also control the flow of that fluid.

**"Expansible Fluid"** means

(i) a vapour or gaseous fluid, or
(ii) a liquid under pressure and at a temperature at which the liquid changes to a gas or vapour when the pressure is reduced to atmospheric pressure or when the temperature is increased to ambient temperature.

In this document the term

***"Owner-user"*** means an owner of pressure equipment that has provided an Integrity Management System in accordance with the *Pressure Equipment Safety Regulation* and has been issued a quality management system Certificate of Authorization Permit under PESR section 11(3).

"***Fuel Gas"*** means any of the following gases or mixtures of gases utilized within the scope of the CSA B149.1 - *Natural gas and propane installation code* and may include natural gas, manufactured gas, or mixtures of propane gas and air, propane, propylene, butanes (normal butane or isobutane), and butylene. And includes manufactured gas such as hydrogen, raw gas, well head gas, process generated gas and may include sweet, sour or wet applications.

***"Gas Piping"*** means pipe, tubes, conduits, fittings, gaskets, bolting and other components that make up a system for the conveyance of fuel gas under any pressure, may also control the flow of the fuel gas and shall be designed and constructed in compliance with the *Gas Code Regulation*.

The *Gas Code Regulation* adopted the CSA B149.1 - *Natural gas and propane installation code*. This code applies to the installation of piping and tubing systems, appliances, equipment, components, venting and accessories where **gas** is to be used for **fuel purposes**, but does not cover piping or tubing where the gas is used as feedstock or process gas.

Installations of fuel gas using manufactured gas (as defined above) shall meet the intent of the *Gas Code Regulation* by utilizing appliances that are certified or approved as indicated under

the options within the *Gas Code Regulation*. Hydrogen gas as a fuel is currently addressed as manufactured gas and within the scope of the CSA B149.1 - *Natural gas and propane installation code,* and a permitted installation would address the installation of the piping. Such installations may be considered for compliance under complex project provisions requiring the engineer of record to integrate the CAN/BNQ 1784-000 *Canadian hydrogen installation code* into the design package.

**Permitting requirements under both Gas & Pressure Equipment Disciplines**

The *Permit Regulation AR 204/2007*, under the *Safety Codes Act*, indicates that a permit, for a gas installation that is under the gas discipline, is required:

> "12(1) A permit in the gas discipline is required to install, alter or add to a gas system."

Work performed on piping under the jurisdiction of the *Gas Code Regulation (AR 111/2010)* must be done by certified gas fitters.

All fuel gas piping must be permitted and meet the requirements of the *Gas Code Regulation*, **except** for the portion of the piping that is approved as part of the "pressure piping" at an Owner-user facility.
Work performed under the jurisdiction of the *Pressure Equipment Safety Regulation* shall follow the requirements outlined therein and in accordance with ABSA document AB-518.

**Gas piping systems at owner-user plant sites.**

1. Fuel gas piping systems installed at owner-user facilities having a design pressure in excess of 15 psi (103 kPa) designed as pressure piping is subject to the *Pressure Equipment Safety Regulation* and shall be included in the design registration of the pressure piping system for the facility. Gas piping used exclusively for fuel purposes regulated under the *Gas Code Regulation* is specifically exempt from the *Pressure Equipment Safety Regulation*, shall **not** be included in the design registration of the pressure piping system for the facility.
2. Fuel gas piping for pressure of 15 psi (103 kPa) or less, and fuel gas piping at all pressures located in between the appliance shut-off valve and the burner must be designed and constructed in accordance with the *Gas Code Regulation*.
3. The construction, modification, repair or alteration of a fuel gas piping system designated as pressure piping referenced in point 1 above shall be performed by the holder of a quality management system certificate of authorization permit and in full compliance with the *Pressure Equipment Safety Regulation*.
4. The construction inspection of the fuel gas piping (pressure piping) upstream of the appliance isolation valve and/or the pressure regulator (where the pressure is reduced to 103 kPa or less) or other designated design code changeover shall be carried out by an owner's inspector in accordance with the code of construction and documented on an ABSA form AB-83 *Piping Construction and Test Data Report.*
5. Fuel gas piping systems installed at owner-user facilities having a design pressure of 15 psi (103 kPa) or less and fuel gas piping exceeding 15psi (103kPa) designated by the designer as "gas piping" shall be designed as "gas piping" and is subject to the *Gas Code Regulation*.
6. The installation inspection of the gas piping system, appliance isolation valve and/or pressure regulator will be carried out by a gas safety codes officer under the *Gas Code Regulation*. The required gas permit will also cover the installation of the gas-fired appliance and the final piping where gas is used for fuel purposes.

Installation inspection carried out under *Gas Code Regulation (AR 111/2010)* shall include:

- Verification from the owner or contractor that the upstream pressure piping system has been registered with ABSA;
- Verification the AB-83 form has been completed and signed off by the owner's inspector.
- Installer qualifications (gasfitter) respecting the type of installation permitted;
- Piping and tubing systems (verifying size, schedule, capacity, supports, etc.);
- Pressure regulators and line relief devices (verifying working pressures, capacities, venting to a safe location outdoors);
- Appliances (verifying certification, approvals for Alberta, clearances, protection, venting systems and air supply);
- For underground piping and tubing (verifying burial depth, routings away from buildings, sleeves on riser passing through concrete/pavement, use of swing joint on entry to buildings, etc.)
- Odorization as required in CSA Z662 *Oil and gas pipeline systems* (when gas is utilized for fuel purposes); and
- Other inspection items associated with CSA B149 Codes and referenced standards.

**Fuel gas piping systems at all other plant sites not managed by an Owner-user.**

1. Fuel gas piping systems installed at all design pressures shall be deemed "gas piping" and subject to the *Gas Code Regulation*.
2. The construction, modification, repair or alteration of a fuel gas piping system reference in point 1 above shall be performed by a holder of an appropriate trade certificate of competency and in full compliance with the trade regulations under *Alberta Advanced Education / Apprenticeship and Industry Training (AIT).*
3. The installation inspection of the piping system including appliances, isolation valve and/or pressure regulator, and piping from the isolation valve and/or regulator to the burner will be carried out by a gas safety codes officer under the *Gas Code Regulation*. The required gas permit will cover the installation of the gas-fired appliance and the final piping where gas is used for fuel purposes.

   Installation inspection carried out under *Gas Code Regulation (AR 111/2010)* and shall include:

   - Verification from the owner or contractor that the pressure piping system (if applicable) has been registered with ABSA;
   - Installer qualifications (gasfitter) respecting the type of installation permitted;
   - Piping and tubing systems (size, schedule, capacity, supports, etc.);
   - Pressure regulators and line relief devices (working pressures, capacities, venting to a safe location outdoors);
   - Appliances (certification, approvals for Alberta, clearances, protection, venting systems and air supply);
   - For underground piping and tubing (burial depth, not permitted under building, sleeves on riser passing through concrete/pavement, swing joint on entry to buildings, etc.)
   - Odorization or equivalent (when process gas is utilized for fuel purposes); and
   - Other inspection items associated with CSA B149 Codes and referenced standards

A natural gas service and meter upstream of a gas distribution system on a plant site shall be in accordance with the *Pipeline Act,* or the *Oil and Gas Conservation Act* as appropriate including regulations and referenced codes/standards.

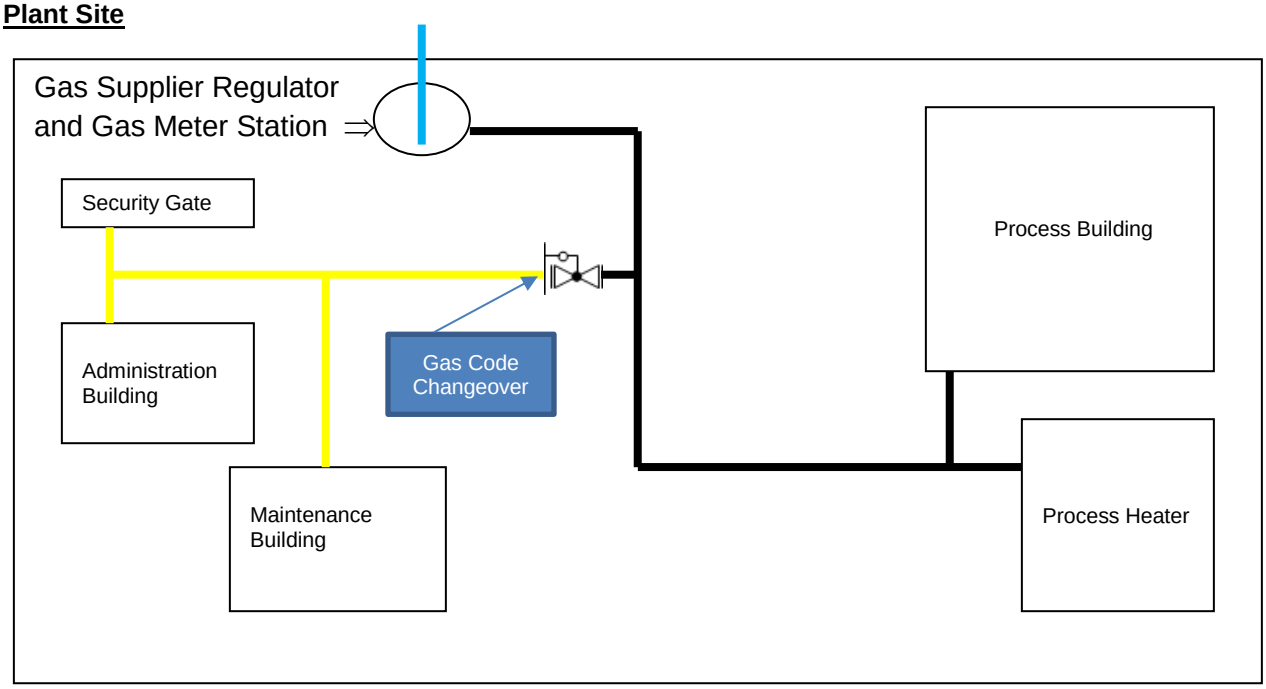
Anyone concerned about the status of a fuel gas piping system or a pressure piping system could contact Alberta Municipal Affairs - Community & Technical Support, visit the Web site https://www.alberta.ca/gas-codes-and-standards.aspx , contact the local ABSA office, or visit ABSA Web site http://www.absa.ca for further information.

## INTERPRETATION

All fuel gas piping systems shall be permitted and shall meet the requirements of the *Gas Code Regulation*, except for the portion of the piping that is approved as part of the pressure piping at an Owner-user facility.

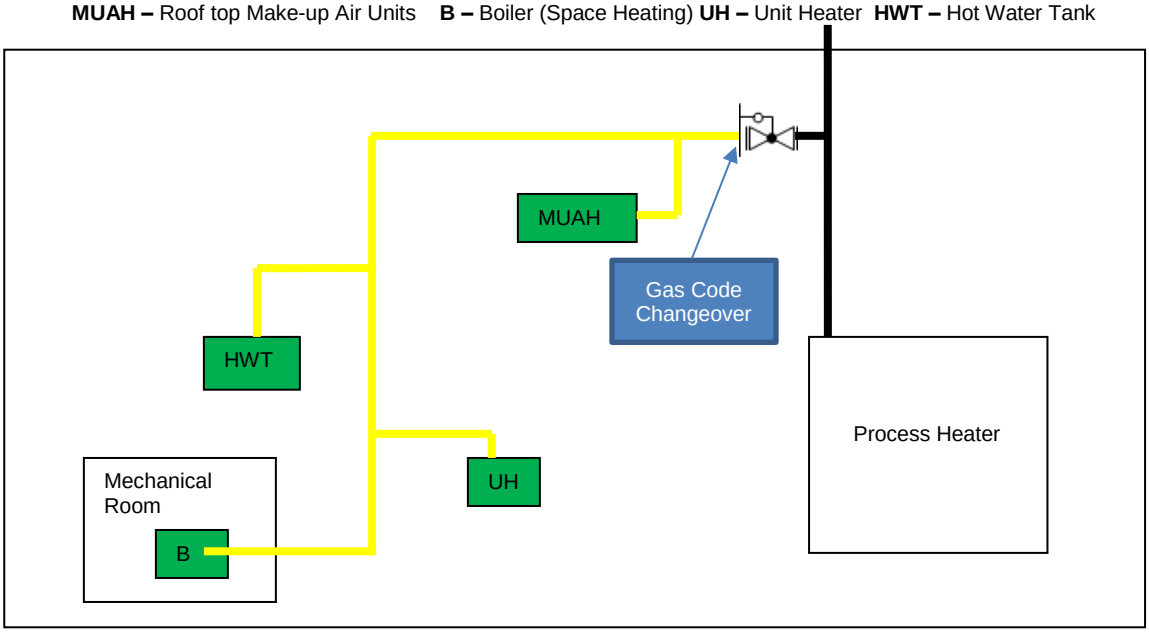
| | | |
|---|---|---|
| Gas Supplier Distribution line | | (Alberta Agriculture and Forestry, Rural Utilities Section) |
| Process Distribution | | ABSA – Registered Pressure piping system |
| Fuel Distribution | | *Gas Code Regulation* or as ABSA Registered as process gas pressure piping for Owner-User if pressure >15psi |
| Appliance (Certified / Uncertified) | | *Gas Code Regulation* |

**Plant Site**

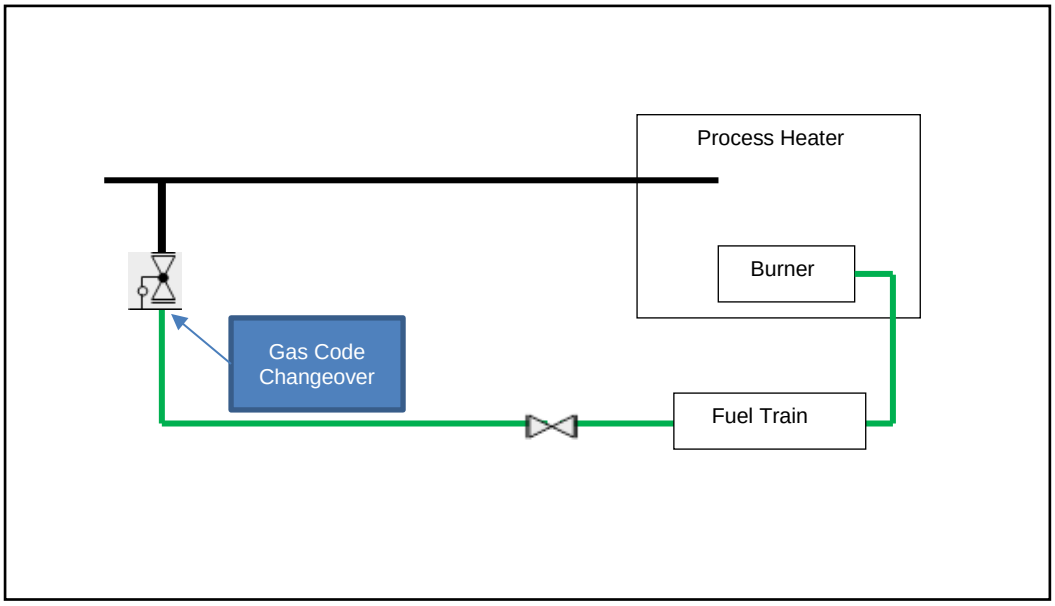



**Process Building**

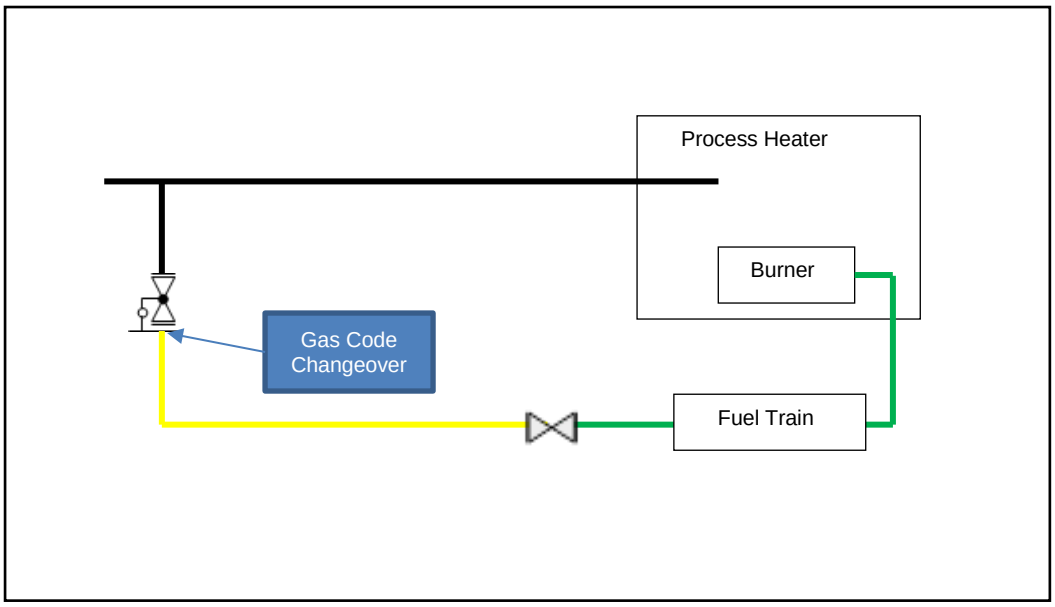
**MUAH –** Roof top Make-up Air Units **B –** Boiler (Space Heating) **UH –** Unit Heater **HWT –** Hot Water Tank



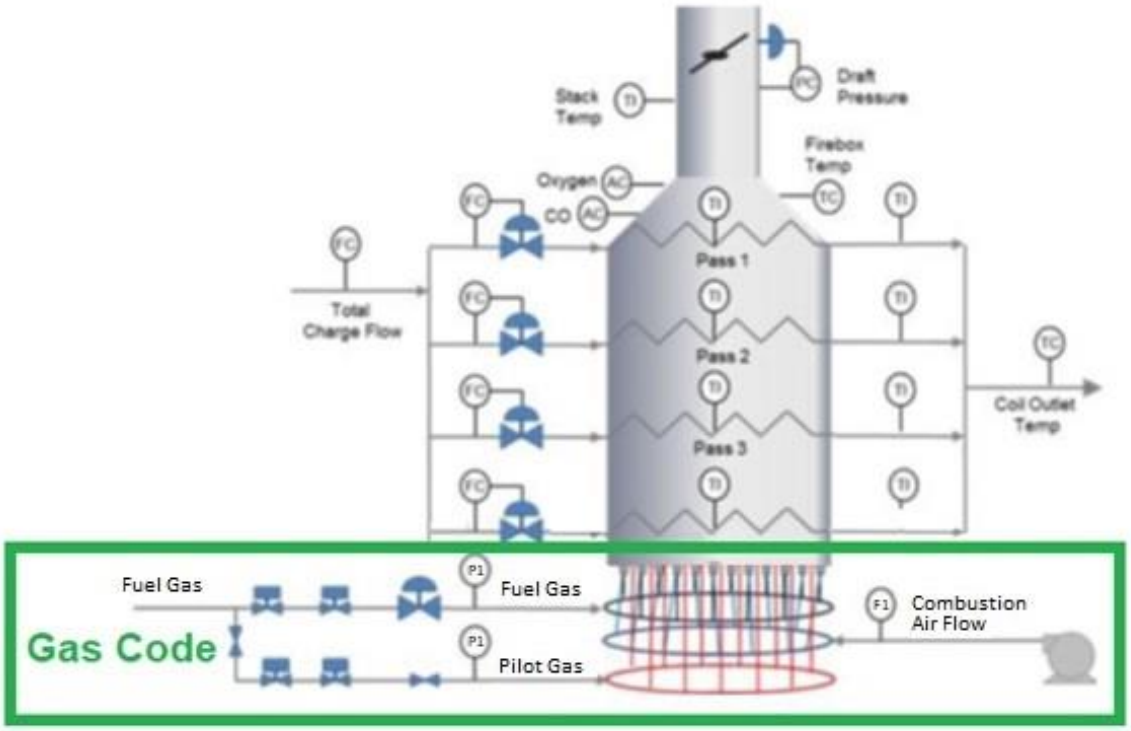
**Process Equipment**




**Process Equipment Owner-User Over 15 PSI**



**Process Heater**



# GAS SAFETY
## Information Bulletin

STANDATA

February 2021



### Propane Storage Tanks Designed for 200 PSIG

**PURPOSE**
This bulletin has been jointly developed by Alberta Municipal Affairs, the Pressure Equipment Sub-Council, the Alberta Boilers Safety Association (ABSA) and the Safety Codes Council to inform industry of the requirements associated with the use of Propane Storage Tanks Designed for 200 PSIG.

**DISCUSSION**
The continued operation of Propane Storage Tanks Designed for 200 PSIG is permissible provided that they are maintained properly, have the required fittings and are not relocated.

**CODE REFERENCES**
The ***Safety Codes Act***, through the ***Pressure Equipment Safety Regulation*** adopts **NFPA 58 *Liquefied Petroleum Gas Code.***

> NFPA 58 allows propane storage tanks that were designed for 200 psig in accordance with paragraphs U68 or U69 of the 1949 (or earlier) edition of the ASME Code to be operated with a pressure relief valve set at 250 psig.

The ***Safety Codes Act***, through the ***Gas Code Regulation AR 111/2010***, adopts the **CSA B149.2-15 *Propane storage and handling code***, and clause 7.1.1 states the following:

> Subject to Clause 5.2.3b), a tank shall have a maximum allowable working pressure (MAWP) of not less than 250 psig (1.72 MPa) and the tank and its PRD shall be in compliance with CSA B51 and applicable provincial or territorial regulations covering unfired pressure vessels.
> **Note:** *For information regarding inspection and servicing of PRDs, see Annex R.*

**APPLICATION**
All other applications of LPG tanks rated for an MAWP of less than 250 psig (1750 kPa) are considered unacceptable.

If propane suppliers are concerned about the status of a particular tank or tanks registration, they could contact the Alberta Municipal Affairs office, visit the Web site, www.municipalaffairs.alberta.ca/cp_index.cfm, the local Alberta Boilers Safety Association (ABSA) office or visit ABSA Web site, http://www.absa.ca/ for further information.

Issue of this STANDATA is authorized by the Gas Administrator and the Pressure Equipment Administrator

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Phone: 1-866-421-6929 Email: safety.services@gov.ab.ca Website: www.alberta.ca

**INTERPRETATION**

While Alberta will not accept 200 psig tanks that are being rejected in other provinces, 200 psig tanks with a history of safe operation in Alberta would be allowed to remain in service. These tanks are stamped with an identification number, generally known as an “A-number”. The format of the “A-number” is a capital A within a circle followed by numerals. Some older vessels are stamped with an “AL-number” of similar format**.**

# Notice

## Servicing Intervals for Pressure Relief Valves on Tanks 2500 USWG and Less

This bulletin applies to the servicing of pressure relief valves (PRVs) installed on pressure vessels designed and fabricated in accordance with CSA B51 Boiler, pressure vessel, and pressure piping code, and installed and in service within the scope of the CSA B149.2, Propane storage and handling code.

These pressure vessels are subject to the *Safety Codes Act*, but do not require a certificate of inspection permit in accordance with Section 33(2)(e) of the Pressure Equipment Safety Regulation. All other requirements of the Pressure Equipment Safety Regulation (PESR) apply. Section 37(c) of the PESR establishes the requirement for the owner to maintain the PRVs in good working order.

Alberta Boiler Safety Association (ABSA) document AB-506, Inspection & Servicing Requirements for In-Service Pressure Equipment, requires that servicing of pressure relief valves for propane storage shall be in accordance with CSA B51. The current edition of the CSA B51 code has established the maximum servicing interval for PRVs installed on these pressure vessels at twenty-five (25) years (for details refer to CSA B51 Clause 12 and Table 5), with periodic visual inspection at a maximum interval of five (5) years.

The requirements of CSA B51 became mandatory in May 2014 when it was adopted under the Pressure Equipment Safety Regulation. It is the Owner's responsibility to ensure their pressure equipment is operated safely and is in compliance with the *Safety Codes Act*, the regulations, and the adopted codes and standards. It is understood that there are many existing propane storage vessels less than 2500 USWG that are not in compliance with the new requirement for PRV servicing, and that it is not practical to achieve full compliance on these existing installations within a short period of time. Owners of this type of pressure equipment have expressed, through the Canadian Propane Association, a desire to achieve compliance over a reasonable time period, and have asked for guidance in this regard.

Owners of vessels, not greater than 2500 USWG, are advised to develop and document an implementation compliance plan for the servicing of PRVs on these vessels. The compliance plan should be made on the basis of a risk assessment process to establish the priority for PRV servicing or replacement. PRVs should be serviced or replaced in accordance with the plan. They must be serviced or replaced sooner if there is evidence of malfunction or damage.

Compliance plans should be developed prior to December 31, 2015. It is expected that all PRVs on these vessels will be in compliance with the servicing requirements by May 31, 2024.

Compliance monitoring will be carried out by Gas Safety and ABSA. Safety codes officers in the gas discipline will monitor compliance at the time of installation inspections. ABSA safety codes officers in pressure equipment discipline will monitor compliance during audits of owner's integrity management systems.

For further information, contact Municipal Affairs, Technical and Corporate Services Division toll-free at 1-866-421-6929.


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