



CODE APPLICATIONS AND INTERPRETATIONS

<u>DATE:</u>	February 26, 2024
<u>SUBJECT:</u>	Installation of LP-Gas detectors/alarms and propane riser assembly protection
<u>CODE CYCLE:</u>	2022 California Building Codes Standards
<u>APPLICABLE CODES:</u>	2022 California Building Code; NFPA 58 (2020); TOML Municipal Code

Chapter 35 of the 2022 California Building Code (CBC) identifies all the referenced standards that must typically be enforced by local building departments. NFPA 58 (2020) is the current referenced standard for the storage, handling, transportation, and use of liquefied petroleum gas (LP-Gas, or LPG) and the installation of LPG facilities and equipment.

NFPA 58 (2020) Section 6.18 (Installation in Areas of Heavy Snowfall) requires the physical protection of LPG piping, regulators, meters, and other equipment installed in the piping system in areas where the ground snow load is equal to or exceeds 100 psf.

Town of Mammoth Lakes Municipal Code section 15.24.086 specifies minimum requirements in the Town of Mammoth Lakes (Town) for the installation of LPG sensors and alarms. Section 15.40.030 of the Town's municipal building code specifies requirements for the structural protection of LPG regulators, meters, and gas piping (LPG riser assembly).

DISCUSSION

The winter of 2022-2023 is considered one of the most extreme winters to date in the Town in terms of total snowfall. In addition to widespread structural damage, that extreme winter also had several LPG accidents, including two structures that exploded and were completely destroyed; one of those explosions caused five human injuries.

As a result of the disaster, it was discovered that the existing structural protective enclosures protecting LPG riser assemblies failed on numerous occasions, and that the origin of gas intrusion into structures was at the LPG riser assembly due to the failed protective enclosures. It was also discovered that LPG sensors likely may have functioned correctly when gas intrusion occurred into a building, but since most of the single-family residences are second homes, no one was able to hear the LPG sensor's interior alarm.

Section 15.24.086 specifically states, in part, that *“All R (residential) occupancies containing liquefied petroleum gas (LPG) appliances and/or LPG facilities shall be equipped with a listed sensing device (sensor) attached to an audible alarm.”* This section also states that LPG sensors and alarms in new construction shall be hardwired and interconnected and must be hardwired and interconnected in alterations that involve the removal of interior wall or ceiling finishes that expose the structure. Section 15.24.086 [B] requires the installation of LPG sensors and alarms when the valuation of new construction, additions, alterations, and repairs in a group R occupancy exceeds one thousand dollars (\$1,000) and a permit is required.

Section 15.40.030 [D] (Protection of LPG Facilities) states *“The LPG regulator, meter, and gas piping installed at or attached to any structure shall be protected from physical damage by an enclosure or other structure approved by the Mammoth Lakes Building Division.”*

POLICY AND PROCEDURE FOR LPG SENSORS/ALARMS AND PROTECTIVE ENCLOSURES

The installation of LPG sensors and alarms shall include the installation of visual/audible alarms at the exterior of newly constructed group R occupancies and existing group R occupancies undergoing an addition, alteration, or a repair that is valued at \$1,000 or more with a permit required for such work. The exterior alarm shall be placed on the front of the structure facing the street. LPG detectors and alarms shall also be installed as per the Town's municipal code pursuant to section 15.24.86, inclusive of the hardwire and interconnection requirement per 15.24.086 [A].

LPG protective enclosures shall be installed at LPG riser assemblies in new construction and to structures with new or relocated gas service and for repairs to existing protective enclosures. The previous wood enclosure approved by the Town shall not be permitted to be installed in the above conditions. Pre-engineered wood frame and steel frame enclosures available on the Town's website may be used, or site-specific engineered designs may also be used pursuant to approval by the Town's Building Division.

Building Division staff may be contacted at (760) 965-3635 or at tperry@townofmammothlakes.ca.gov should there be any questions.