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Propane Regulator Vent Locations[1]

Code: 2018 NC Mechanical Code **Date:** May 2, 2019
Section: 401.4 and 501.3.1

Code: 2018 NC Residential Code
Section: M1506.3

Question:
Can the propane regulator vent[2] be located in accordance with the Container Pressure Relief Valve Table 6.3.9 of NFPA 58[3], even though certain situations may be closer than the 10 feet horizontal separation distance identified in NCMC 401.4 Item 2?

Answer:
Yes.

NCMC 401.4, Item 2, requires mechanical and gravity outdoor air intake openings to be located not less than 10 feet horizontally from various contaminant sources, except as specified in NCMC Section 501.3.1 Item 3.

NCMC Section 501.3.1 has a list of more-specific separation distances than the requirements of NCMC 401.4. Propane gas regulator vents are not included in this list. However, another nationally recognized standard, NFPA 58, has developed and used distances that are acceptable to use as separation distances. Please note, that the separation distance for *openings* (which includes operable windows) is different from separation distances from *mechanical air intakes and direct-vent appliance openings*. There is a difference between separation distances from Cylinders and ASME tanks. Annex I of NFPA 58-2008 has informative diagrams that can be used for reference.

Question:
Can the propane regulator vent *horizontal separation* per NFPA 58-2008 Table 6.3.9 be used for separation compliance if the building *opening* (such as operable window) is above the regulator vent opening?

Answer:
Yes.

The density of propane gas is greater than air, so the more restrictive case is when the building opening is below the vent; therefore, if the building opening has at least the horizontal separation as the requirements in NFPA 58-2008 Table 6.3.9, but located above the vent, the table

separation values can be used. Use the Table column "Distance Horizontally from Relief Valve Discharge to Opening Below Discharge" values for operable windows.

Footnotes:

[1]The Department of Agriculture regulates propane before the outlet of the first regulator which reduces pressure, refer to NC FGC Definitions, Point of Delivery, and NC General Statutes §143-138, paragraph (b8). Therefore, there may be installations where the regulatory authority is the department of Agriculture. The Code Official in this case will notify the installing contractor for resolution. This interpretation is no way intended to usurp or replace the authority of the Department of Agriculture or replace their requirements concerning undiluted liquefied propane.

[2]The vent discussed in this document is the vent for the medium-pressure regulator, not the relief valve discharge. The vent for the medium pressure regulator (also referred to as line-pressure regulator, or "pounds-to-inches" regulator). As with the container pressure relief valve, a rupture of the diaphragm in the regulator is an infrequent, but possible event. If the diaphragm ruptures, the fuel gas can flow for conceivably as long as there is fuel in the tank or the supply line; and this must be considered in placement.

[3]Table 6.3.9 NFPA 58-2008

Table 6.3.9 Separation Distance Between Container Pressure Relief Valve and Building Openings					
		Distance Horizontally from Relief Valve Discharge to Opening Below Discharge		Discharge from Relief valve, Vent Discharge, and filling connection to Exterior Source of Ignition, Openings into **Direct-Vent Appliances**, **Mechanical Ventilation Air Intakes**	
Container Type	Exchange or Filled on Site	(Ft)	(Meters)	(Ft)	(Meters)
Cylinder	Exchange	3	0.9	5	1.5
Cylinder	Filled on site	3	0.9	10	3.0
ASME	Filled on site	5	1.5	10	3.0

Keywords:
Ventilation openings