

Bulletin 2-10-11
Electrical equipment near combustible gas equipment
Rule 2-324 and 6-408

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Rule 2-324 states that the clearance between arc-producing electrical equipment and a combustible gas relief device or vent shall be in accordance with the requirements of CSA B149.1.

Questions have been asked regarding the specific types of electrical equipment covered by the rule.

The electrical equipment includes, but is not limited to, receptacles, switches, wall mounted and/or meter base plug in transfer devices, air conditioning units and related disconnecting means (which must be located within 3 m of the A/C unit as per Rule 28-604(5)). This interpretation is consistent with the rules concerning the use of electrical equipment in Class 1 Zone 2 locations.

Permanently installed electric metering equipment including standard “Smart Meters” are typically not arc producing, and are permitted to be located within 1 metre of the natural gas combustible gas relief vent.

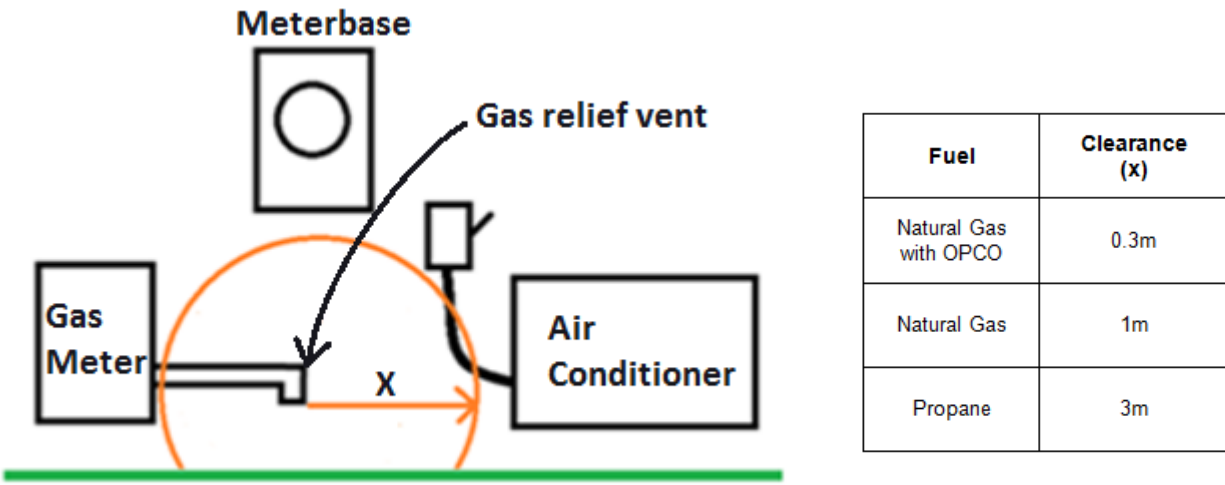
External load limiters (see Photo B1) or meters containing integral contacts for remote disconnection and reconnection of service and/or load limiting capability are considered arc producing and shall be kept outside of the radius shown in Figure B1. Many utilities reserve the right to install other types of meters or devices, which may contain arcing components, without notice. When questions arise if a utility’s meter or load limiting device can be located within radius of the discharge vent as determined by Figure B1, the utility shall be consulted. Meter mounting device (meterbase) locations, as per Rule 6-408(f), shall be in compliance with the requirements of the supply authority.

Photo B1 - External Load Limiter



Figure B1 illustrates an example of an installation that complies with the minimum requirements.

Figure B1 - Minimum clearance required between electrical equipment and gas relief source according to CSA B149.1



Question

Is it permitted to install arc producing electrical equipment (e.g. A/C unit) at a distance of less than 1 m from the discharge of a natural gas relief device or vent?

Answer

No, unless an approved Limited Relief OPCO (Overpressure Cut-Off) device is installed. In this case, arcing electrical devices may be installed no closer than 0.3 m (12 in.) from the point of release. The over pressure relief device must be marked "LR-OPCO" (see the example in Photo B2).

Photo B2 – OPCO Device



Background

CSA-B149.1-10 “Natural Gas and Propane Installation Code” has been adopted with the following amendment outlined in the TSSA Code Adoption Document Amendment FS-212-14 effective October 1, 2014.

Section 5.5.9 of CSA-B149.1-10:

- Table 5.2 lists the “Clearance from discharge openings of relief devices located in supply lines”. For natural gas certified OPCO (overpressure protection device) conforming to ANSI Z21.80/CSA 6.22, the clearance from a source of ignition is 0.3 m.
- Table 5.3 lists the “Clearance from discharge openings of service relief devices”. For natural gas service regulators certified to CSA 6.18 incorporating OPCO (over-pressure cut-off) system and with limited relief of 1.5 m³/h, the clearance from a source of ignition is 0.3 m.

On residential sites where there is very little space to locate the A/C unit and natural gas vent at 1 m separation, the use of a natural gas certified OPCO regulator is an acceptable solution to the problem of separation. This may also be applied where there is an outdoor receptacle located at a distance of less than 1 m from the vent.