



To: Natural Gas Vehicle Owners & Operators

From: NGV America Technology & Development Committee

Date: October 10, 2019

Subject: **Technology Bulletin – Cold Weather Notice for Natural Gas PRDs**

Natural gas vehicle (NGV) owners and operators should be aware that moisture trapped in pressure relief devices (PRDs) and in PRD vent lines can freeze and cause damage. This reminder becomes important during the winter months when freezing temperatures are common. Ice damage in PRDs and PRD vent lines can result in the following unintended consequences:

- unexpected activation of the PRD, resulting in the release of the fuel tank contents,
- PRD leaks, or
- PRDs not being able to activate.

PRDs are intended to be used as a safety device for NGVs by releasing the natural gas fuel tank contents in the case of a vehicle fire. The location of PRDs can vary, but they are typically located at one or both ends of the NGV fuel tanks. In cases where multiple NGV fuel tanks are used, the PRDs may be in a manifold configuration, typically connected to a vent port.

Incidents have shown that moisture from rainwater and vehicle washes may enter the PRD vent systems through accessible openings. Vent outlets that are open due to missing moisture caps are a very common point of entry for water; however, loose fitting caps can also allow moisture to enter the PRD vent system. Moisture collected in a PRD system can cause PRD internal components to become distorted, resulting in premature PRD activation. This potential failure mode exists on any CNG fuel systems with openings in the vent system but has been most prominent on vehicles with roof mounted PRD systems.

CSA NGV 6.1-2018 *Compressed natural gas (CNG) fuel storage and delivery systems for road vehicles* will address some of these concerns. NGV manufacturers typically recommend routine inspection of PRD vent systems to verify the integrity of the vent lines and assure that all vent caps are in place. The occurrence of this inspection varies between vehicles. NGV owners and operators are encouraged to consult their vehicle owner's guide and/or the manufacturer for appropriate inspection procedures. If vent caps are discovered to be missing, or there are other signs of moisture present in the PRD vent system, the owner/operator should contact their vehicle manufacturer immediately for recommended actions.

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