



Fact Sheet

Stage I Gasoline Vapor Recovery Controls

What is Stage I Vapor Recovery?

Stage I vapor recovery refers to the capture of the gasoline vapors generated when a tank truck delivers gasoline to a storage tank at a gasoline dispensing facility (GDF) and the return of those vapors to the tank truck. The collected vapors are then transported to the gasoline terminal by the tank truck where they are controlled when the tank truck is refilled, usually by incineration.

Who is Required to Have Stage I Vapor Recovery?

By January 1, 1997 the Air Pollution Control Regulations (APCR) required Stage I vapor recovery at all GDFs in Vermont. The only exemption from this requirement was for facilities that receive all gasoline deliveries from trucks with a capacity of less than 4000 gallons (so called “account” or “peddle” trucks). Amendments to Vermont’s Stage I regulation were adopted in December 2014 and go into effect as of July 1, 2015. These amendments were intended to:

- Clearly identify equipment and operational requirements for Stage I vapor recovery.
- Incorporate many of the requirements of the federal Stage I regulation (40 CFR Part 63 Subpart CCCCCC) into §5-253.5 of the APCR to allow the Air Quality & Climate Division to implement these requirements.
- Incorporate relevant requirements from the repealed Stage II vapor recovery regulation into the Stage I regulation.

What is required of owners and operators of GDFs?

If Stage I is required at a GDF two methods for achieving Stage I are available: the coaxial (or single-point system) and the dual-point system. After July 1, 2015 any newly constructed or reconstructed GDF or a GDF where the gasoline storage tanks are replaced must install a dual-point Stage I system. If a ball-float valve is used for tank overfill protection, and the Stage I system is coaxial, the coaxial drop tube must be the type that includes a drop tube shutoff valve (“flapper valve”) to prevent tank overfill. If a standard coaxial drop tube is used in conjunction with a ball-float valve, the ball-float will **not** prevent an accidental overfill and possible spill. An overfill alarm **is** compatible with all types of coaxial drop tubes. If a facility receives all gasoline

(continued on back)

deliveries from “account” trucks, the only requirement is to install drop tubes in the tanks to achieve submerged fill.

A properly functioning, vapor tight Stage I system requires the following equipment:

- a standard drop tube (for two-point systems) or a coaxial drop tube that extends to within 6 inches of the bottom of each gasoline storage tank to ensure that the drop tube opening is submerged while the tank is being filled;
- a tightly fitting fill cap on each fill pipe;
- for two-point systems, a fill adaptor that cannot be loosened or overtightened during normal delivery operations (e.g. a swivel fill adaptor or fill adaptor with a locking clamp)
- for two-point vapor recovery systems, a properly functioning dry-break (poppet valve) that seals the vapor adaptor when not in use that cannot be loosened or overtightened during normal delivery operations (e.g. a swivel vapor adaptor or adaptor with a locking clamp); and
- pressure/vacuum (P/V) valves on the gasoline tank vent lines to restrict the emission of gasoline vapors from the tank (the required settings are 2.5 to 6.0 inches of water on the pressure side and 6.0 to 10.0 inches of water for vacuum and a total leak rate for all P/V valves at a facility not to exceed 0.17 ft³/hr at a pressure of 2.0 inches of water and 0.63 ft³/hr at a vacuum of 4 inches of water).

Maintenance of the system requires that you inspect the components on a monthly basis to ensure that they are functioning properly. A Stage I system is quite simple so your inspection checklist can be brief:

- ensure that fill cap gaskets are intact and the caps are in place and seal tightly;
- ensure that a drop tube is installed and intact in each gasoline storage tank fill riser pipe; and
- visual check that the P/V valve(s) are present and intact; and
- for two-point systems, check the vapor adaptor to verify that the dry-break makes a tight seal and that the vapor adaptor cap gasket is intact and the cap seals tightly.

Proper **use** of the Stage I Vapor Recovery Controls during a delivery is the responsibility of the truck driver. If a Stage I system is present at a GDF, the truck driver is **required** to use it.

QUESTIONS ???

Call the Air Quality & Climate Division at (802) 828-1288.