

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 station and the return of those vapors to the tank truck. The vapors are then returned to the gasoline terminal by the tank truck where they are either condensed back into liquid gasoline or incinerated.

Who is Required to Have Stage I Vapor Recovery?

By January 1, 1997 Stage I vapor recovery was required at all gasoline stations in Vermont. The only exemption from this requirement is for facilities that receive all gasoline deliveries from trucks with a capacity of less than 4000 gallons (so called "account" or "peddle" trucks).

What is required of owners and operators of gas stations?

If Stage I is required at a gasoline dispensing facility, two methods for achieving Stage I are available: the coaxial (or single-point system) and the dual-point system. An important point to keep in mind when doing any installation or retrofit work on a UST system is that all of the components need to be compatible. Most Stage II vapor recovery systems require 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 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 coaxial drop tube or a standard drop tube (for two-point systems) 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 vapor recovery systems, a properly functioning dry-break (poppet valve) that seals the vapor return line when not in use; and
- pressure/vacuum valves on the gasoline tank vent lines to restrict the emission of gasoline vapors from the tank (recommended settings are 3" of water or 1.7 oz./in² for pressure and 8" of water or 4.6 oz./in² for vacuum).

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

- make sure that fill caps are in place and seal tightly;

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- check the drop tube for damage; and
- for two-point systems, also check the vapor return fitting to verify that the dry-break makes a tight seal against the vapor recovery fitting.

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 gas station, the truck driver is **required** to use it.

Questions?

If you have questions on this regulation please contact the Air Pollution Control Division at the following address:

Vermont Department of Environmental Conservation
Air Pollution Control Division
103 South Main Street
Building 3 South
Waterbury, VT 05671-0402
(802) 241-3840
FAX (802) 241-2590
Internet Address: www.anr.state.vt.us/air