

Stage I Vapor Recovery in Iowa?

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Have you ever been at a convenience store when they are receiving a load of fuel and wonder why you smell gasoline vapors? You are inhaling (smelling) vapors being released during the transfer of fuel from the delivery truck to the storage tank. Obviously, air is displaced from the storage tank to make room for the fuel. The displaced air is released through the vent pipe by design....until now.

The United States Environmental Protection Agency (EPA) recently issued a final rule (73 FR 1916) that established national emission standards for hazardous air pollutants (NESHAP) for facilities in the gasoline distribution (i.e. Stage I vapor recovery) area source category. This rule applies to all existing and new gasoline dispensing facilities, and is being enforced by the Iowa DNR Air Quality Bureau.

Vapor recovery is a valuable commodity for multiple reasons. The air pollution caused by gasoline vapors (ground level ozone) is believed to trigger a variety of health problems. Recovering these vapors also reduces serious fire hazards during fuel delivery. It has been reported by Petroleum Equipment Institute (PEI) that vapor recovery captures an amount of vapors equivalent to 10-15 gallons of gasoline each time a fuel delivery truck unloads.

Stage I vapor recovery is defined by PEI as being a system for exchanging gasoline vapors in a storage tank and product in a fuel delivery truck so that no vapors are released to the environment. In other words, the fuel vapors that you used to smell at the convenience store are now supposed to be captured by the fuel delivery truck.

There are three common methods of Stage I vapor recovery: Coaxial, Two-Point and Manifolded. Coaxial connections allow for fuel delivery and vapor recovery through a single fill pipe. Fuel flows down the 3" drop tube and vapors return through the 1" space around the drop tube in the 4" fill pipe. This is a simple and relatively inexpensive retrofit to existing storage tanks. However, this is not allowed in some applications and you must make sure that your fuel supplier is equipped to make this type of fuel transfer.

Two-Point vapor recovery requires two separate tank connections. One connection is to the fill pipe, just like you see in Iowa right now. The other connection is a "return" hose from the second tank connection to the fuel delivery truck. This second tank connection, or vapor recovery adaptor is usually painted orange to make it easier to differentiate from the tank fill pipe.

Manifolded vapor recovery is really nothing more than a two-point connection with multiple tanks using one vapor recovery adaptor that is manifolded between tank vents. It is very important with this method that only tanks with like fuels are connected (i.e. gasoline not connected with diesel). This method also limits the fuel delivery to only one tank at a time.

With all three of these methods of stage I vapor recovery, the appropriate pressure/vacuum vent cap must be installed on the vent pipes otherwise vapors will be

lost to the environment, rather than captured by the delivery truck. It is also important for the same reason that all tank risers are sealed tight (i.e. ATG probe caps).

Who does this rule apply to?

As indicated earlier, this rule applies to all existing and new gasoline dispensing facilities. However, not all facilities are required to install stage I vapor recovery systems. EPA has structured three categories of facilities (small, medium and large) based on the actual monthly throughput of gasoline on a 30-day rolling average. This means that you must combine all gasoline throughput for a facility over a 30 day period. If you have three tanks of gasoline (NL, Super NL and Premium NL), you must combine all of them to determine what category you fall in.

- **“Small”** facility has less than 10,000 gallons of gasoline throughput on a 30-day rolling average over a year span. This category is only required to conduct good management practices (i.e. minimize and clean up spills expeditiously, use properly sealed fill pipe caps, and minimize gasoline sent to open collection systems).
- **“Medium”** facility has between 10,000 and 100,000 gallons of gasoline throughput on a 30-day rolling average over a year span. This category is required to conduct all good management practices as well as use submerged fill (i.e. drop tubes) for all tanks 250 gallons and larger. The drop tube must extend to within 12” of the bottom in tanks installed before 11/9/2006 and within 6” of the bottom in tanks installed after 11/9/2006.
- **“Large”** facility has 100,000 gallons or more of gasoline throughput on a 30-day rolling average over a year span. This category is required to comply with all good management practices, submerged fills, and stage I vapor recovery. Please note: coaxial systems will only be allowed as a retrofit to tanks installed prior to 11/9/06, and all tanks installed after this date must use two-point or manifolded systems.

When must you be in compliance?

All existing facilities (installed prior to 11/9/06) must be in compliance with the appropriate category by **January 11, 2011**. All tanks installed after 11/9/06 **must be compliant upon start-up**.

For more information on this requirement, go to www.epa.gov/ttn/atw/area/arearules.html#current or contact the Iowa DNR Air Quality Bureau. You can also obtain forms at www.pmcofiowa.com/forms/08_Stage1_VaporRecoveryNotification_GasDispensingFacility.pdf.