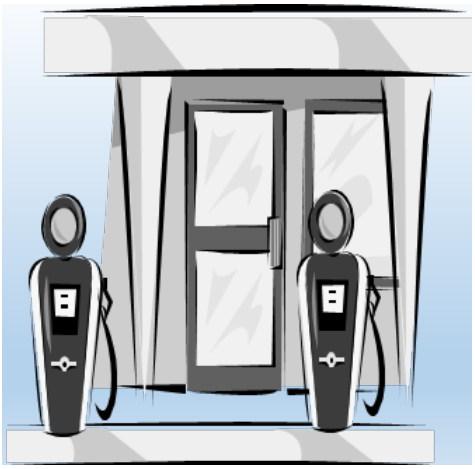
Stage I Vapor Recovery

Requirements for Gasoline Dispensing Facilities



Alabama Department of Environmental Management

October 2010
(Revised March 2025)

What is Stage I Vapor Recovery?

Stage I Vapor Recovery refers to the capture of vapors generated during the delivery of gasoline into underground and above-ground storage tanks by a tank truck. The vapors collected in the tank truck are then transported to gasoline terminals where they are either incinerated or condensed back into liquid gasoline. This prevents vapors from being emitted into the atmosphere, therefore reducing air pollution.

Is my gas station required to have vapor recovery equipment?

Your station is subject to this requirement if it meets <u>all three</u> of the following criteria:

1. One or more of the gasoline tanks at your facility is new or has been replaced, upgraded, modified, reconstructed, or altered since October 1, 1990.
2. Any gasoline tank that has a capacity of 3,000 gallons or more.
3. The total amount of gasoline dispensed from all of your gasoline tanks is an average of 4,000 gallons or greater for each of the months of June, July, and August.

What are my responsibilities for complying with Stage I Vapor Recovery requirements?

- The owner or operator must install and operate a vapor recovery system. There are two types of vapor recovery systems:

  - ♦ A dual point system has two separate tank openings. One opening is for the delivery of gasoline (fill port), and the other is for the return of vapors to the tank truck (vapor recovery port).
  - ♦ A coaxial system* has one tank opening. A coaxial boot is attached to the single port when delivering gasoline, with two hoses attached to the boot. One hose delivers gasoline through the inner drop tube, while the other hose returns vapors to the tank truck through the outer tube.
    - * All new installations beginning operation after January 10, 2008, must install a dual point vapor recovery system.

- <u>Equip all vent pipes associated with gasoline storage tanks with caps that contain pressure relief valves**. Be sure to follow the recognized standards and manufacturer's instructions for installation of vent pipes.</u>

- Ensure that the vapor recovery system is properly maintained and in working order.
  - ♦ Conduct inspections and replace any malfunctioning components associated with the Stage I equipment, such as caps, gaskets, poppet valves, and fill ports.
  - ♦ Pressure relief valves have a life of 12-18 months and should be replaced during routine maintenance.

- Possess and display a valid Air Permit issued by the Alabama Department of Environmental Management.

Common problems associated with Stage I equipment:

- Broken, cracked, or missing caps
- Caps may not fit properly
- Gaskets associated with caps may be missing, damaged, dry, or not properly fitted
- Caps and gaskets may not make a vapor tight seal
- Poppet valves on the vapor recovery ports may be rusted, chipped, off-centered, or not in working order
- Fill port drop tubes may be bent, gashed, detached from one side, or missing
- Vent caps with pressure relief valves may be bent, cracked, or missing
- Pressure relief valves may not function properly**

*** An example of a common pressure relief valve.*

- **<u>Do not paint pressure relief valve caps,</u>** since painting prevents the valves and screens from functioning properly.
- **<u>Always follow the manufacturer's guide for maintenance and replacement of parts</u>**

What do I look for when tank trucks unload gasoline into storage tanks?

- Two hoses should always be used when dropping gasoline in order to recover vapors.
- Coaxial systems should use a boot to attach the two hoses.
- Make sure hoses are securely hooked to the ports and tank truck, and free of any opening that would allow vapors to be emitted. Vapor recovery ports are not to be propped open to allow the free flow of vapors into the atmosphere.
- Submerged fill tubes must be used to load gasoline into storage tanks.

Things to Keep in Mind:

- Know the requirements for your gasoline dispensing facility
- Use proper equipment and maintain that equipment in working order
- Contact information:

ADEM – Air Division
Petroleum Unit
P.O. Box 301463
Montgomery, AL 36130-1463
Phone: 334-271-7861
Fax: 334-279-3044
Website: www.adem.alabama.gov

Further Information…

The deadline for all existing facilities to be in compliance with **Subpart CCCCCC – National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities** was January 10, 2011. All new facilities should be in compliance upon startup. To get more information on this federal regulation, please use the website below:

https://www.epa.gov/stationary-sources-air-pollution/gasoline-distribution-mact-and-gact-national-emission-standards

Gasoline Dispensing Area Sources: National Emission Standards for Hazardous Air Pollutants (NESHAP) - 40 CFR 63 Subparts CCCCCC | US EPA