

**Vapor Balance System Testing Protocol for
Gasoline Dispensing Facilities with a Monthly
Throughput of More Than 100,000 gallons per
month
40 CFR Part 63, Subpart CCCCCC**



On January 10, 2008, the U.S. Environmental Protection Agency (EPA) published air toxics standards for loading of storage tanks at gasoline dispensing facilities (GDF). This regulation is called “National Emission Standards for Hazardous Air Pollutants for Area Source Category: Gasoline Dispensing Facilities” and is found at 40 Code of Federal Regulations (CFR) Part 63, Subpart CCCCCC. A copy of this regulation and the referenced requirements are available on the internet at: <http://www.scdhec.gov/environment/baq/AreaSource.aspx?Page=6C>. South Carolina has taken delegation of this federal regulation and will be implementing and enforcing the requirements.

Owners/operators of Gasoline Dispensing Facilities (GDF) must comply with requirements based on the monthly throughput (gallons pumped) of gasoline at each GDF. GDF with a monthly throughput of 100,000 gallons or more must install and operate a vapor balance system, which must be periodically tested. Listed below is guidance on the testing requirements for vapor balance systems to assist GDF in complying with the testing requirements.

1. Gasoline dispensing facilities that have a monthly throughput of gasoline of 100,000 gallons or more must meet the requirements in §63.11118, including the installation of a vapor balance system.
2. The requirements for the vapor balance system are listed in Table 1 to Subpart CCCCCC of Part 63. Affected GDF must install and operate vapor balance systems on storage tanks in accordance with item 1(a)-(h) of Table 1. In addition, new or reconstructed GDF, or new tanks at existing affected GDF must install a dual-point vapor balance system as required in item 2 of Table 1. Table 1 is included at the end of this protocol.
3. Each affected GDF must demonstrate compliance with the leak rate and cracking pressure requirements and the static pressure requirements as written in §63.11120. The initial test must be performed at the time of installation; existing vapor balance systems must be tested within 180 days of the compliance date. Affected GDF must demonstrate ongoing compliance with the requirements by performing periodic testing every three years. Each subsequent test must be completed within three years of the last test date.
4. The leak rate and cracking pressure requirements for pressure-vacuum vent valves are listed in item 1(g) of Table 1. The approved test method for demonstrating compliance is California Air Resources Board (CARB) Vapor Recovery Test Procedure TP-201.1E – Leak Rate and Cracking Pressure of Pressure/Vacuum Vent Valves. If you choose to use a different test method, you must have written approval from the EPA prior to performing the test. A copy of this test method is

available on the internet at:

<http://www.scdhec.gov/environment/baq/AreaSource.aspx?Page=6C>.

5. The static pressure performance requirement is listed in item 1(h) of Table 1. The approved test method for demonstration of compliance is CARB Vapor Recovery Test Procedure TP-201.3 – Determination of 2-Inch WC Static Pressure Performance of Vapor Recovery Systems of Dispensing Facilities. If you choose to use a different test method, you must have written approval from the EPA prior to performing the test. A copy of this test method is available on the internet at: <http://www.scdhec.gov/environment/baq/AreaSource.aspx?Page=6C>.
6. The owner or operator must submit a written notice to the Bureau of Air Quality at least 60 days before the test is performed. The written notice must contain the name and location of the affected GDF and the UST 5-digit permit number. The written notice should be mailed to:
 - Air Toxics Section Manager
 - SCDHEC Bureau of Air Quality
 - 2600 Bull Street
 - Columbia, SC 29201
 The written notice may also be faxed to the attention of the Air Toxics Section Manager at 803-898-4117.
7. The results of each performance test shall be submitted within 180 days of completion to the above mentioned address. The results shall contain at least the same required information as Form 1 in test method CARB TP-201.1E and Form 1 in test method CARB TP-201.3.
8. GDF must comply with the work practice standards listed in §63.11116 and must utilize submerged filling (drop tubes) when loading gasoline. The work practice standards are available on the internet at:

<http://www.scdhec.gov/environment/baq/AreaSource.aspx?Page=6C>.

Table 1 to Subpart CCCCCC of Part 63—Applicability Criteria and Management Practices for Gasoline Dispensing Facilities With Monthly Throughput of 100,000 Gallons of Gasoline or More*

If you own or operate	Then you must
1. A new, reconstructed, or existing GDF subject to §63.11118	Install and operate a vapor balance system on your gasoline storage tanks that meets the design criteria in paragraphs (a) through (h).
	(a) All vapor connections and lines on the storage tank shall be equipped with closures that seal upon disconnect.
	(b) The vapor line from the gasoline storage tank to the gasoline cargo tank shall be vapor-tight, as defined in §63.11132.
	(c) The vapor balance system shall be designed such that the pressure in the tank truck does not exceed 18 inches water

If you own or operate	Then you must
	pressure or 5.9 inches water vacuum during product transfer.
	(d) The vapor recovery and product adaptors, and the method of connection with the delivery elbow, shall be designed so as to prevent the over-tightening or loosening of fittings during normal delivery operations.
	(e) If a gauge well separate from the fill tube is used, it shall be provided with a submerged drop tube that extends the same distance from the bottom of the storage tank as specified in §63.11117(b).
	(f) Liquid fill connections for all systems shall be equipped with vapor-tight caps.
	(g) Pressure/vacuum (PV) vent valves shall be installed on the storage tank vent pipes. The pressure specifications for PV vent valves shall be: a positive pressure setting of 2.5 to 6.0 inches of water and a negative pressure setting of 6.0 to 10.0 inches of water. The total leak rate of all PV vent valves at an affected facility, including connections, shall not exceed 0.17 cubic foot per hour at a pressure of 2.0 inches of water and 0.63 cubic foot per hour at a vacuum of 4 inches of water.
	(h) The vapor balance system shall be capable of meeting the static pressure performance requirement of the following equation:
	$P_f = 2e^{-500.887/v}$
	Where:
	P_f = Minimum allowable final pressure, inches of water.
	v = Total ullage affected by the test, gallons.
	e = Dimensionless constant equal to approximately 2.718.
	2 = The initial pressure, inches water.
2. For new or reconstructed GDF, or new storage tank(s) at an existing affected facility subject to §63.11118	Equip your gasoline storage tanks with a dual-point vapor balance system, as defined in §63.11132, and comply with the requirements of item 1 in this Table.

*40 CFR Part 63, Subpart CCCCCC – Table 1

For more information please visit the Bureau of Air Quality Area Source website <http://www.scdhec.gov/environment/baq/AreaSource.aspx> or call 803-898-4064.