

RULE 412 Gasoline Transfer into Stationary Storage Containers, Delivery Vessels, and Bulk Plants - Adopted 4/18/72, Amended 12/17/74, 6/17/75, 6/20/78, 6/29/81, 1/9/89, 5/6/91, 1/13/22

I. Applicability

This rule applies to stationary storage containers including storage containers located at bulk plants with capacities greater than 250 gallons. This Rule also applies to gasoline delivery vessels.

II. Definitions

- A. APCO: Air Pollution Control Officer as defined in Rule 102 (Definitions)
- B. CARB: California Air Resources Board
- C. CARB Certified: A vapor recovery system, equipment, or any component thereof, for which the CARB has evaluated its performance and issued a valid Executive Order pursuant to California Health and Safety Code Section 41954. Each component of a system that is a separate CARB certified item cannot be replaced with a non-certified item or other items that are not certified for use with the particular system. Except for qualified repairs, a CARB certified component shall be as supplied by the qualified manufacturer. A rebuilt component shall not be deemed as CARB certified unless the person who rebuilds the component is authorized by CARB to rebuild the designated CARB certified component.
- D. CARB Certified Phase I Vapor Recovery System: A vapor recovery system which has been certified by CARB pursuant to Section 41954 of the California Health and Safety Code.
- E. Aviation Gasoline: Gasoline used as fuel for aircraft that cannot be legally used as fuel for motor vehicles.
- F. Background: The ambient concentration of organic compounds determined at least two (2) meters upwind from any component to be inspected and which is uninfluenced by any specific emission permit unit.
- G. Component: Includes, but is not limited to, any valve, fitting, threaded connection, pump, pressure relief device, pipe, flange, hatch, sight-glass, meter, or seal of a fluid system in VOC service.
- H. Delivery Vessel: Any cargo container having a volumetric capacity in excess of 120 gallons that is used for the transportation of gasoline or aviation gasoline. This term includes pumps, meters, valves, fittings, piping, and other appurtenances attached to a gasoline storage container on a vehicle and used in connection with the gasoline/aviation gasoline being transported. Containers used exclusively for aviation gasoline in agricultural operations, with an annual throughput of 1,000 gallons or less, will not be considered delivery vessels for the purpose of this rule.

- I. Emergency: A fire, flood, earthquake, or other similar catastrophe.
- J. EPA: United States Environmental Protection Agency.
- K. Excess Organic Liquid Drainage: More than 10 milliliters liquid drainage which is not contained by a CARB certified spill container. Such liquid drainage for disconnect operations shall be determined by computing the average drainage from three consecutive disconnects at any one loading arm.
- L. Gasoline: Any organic liquid, including petroleum distillates and alcohols having a Reid vapor pressure of four (4) pounds per square inch absolute or greater, which is used as a motor vehicle fuel or any fuel which is commonly or commercially known or sold as gasoline, including aviation gasoline.
- M. Gasoline Bulk Plant: Any loading facility and associated unloading racks, storage tanks and vapor recovery systems (s) used to load less than 20,000 gallons in any one day of gasoline to delivery vessels (i.e., tank trucks or trailers).
- N. Gasoline Vapors: Volatile Organic Compounds in the displaced vapors including any entrained liquids.
- O. Loading Operation: Any aggregate or combination of organic liquid loading and vapor control equipment from the connection at the inlet of the organic liquid pump to and including the hose end connector at the portable delivery tanks and the discharge of the vapor control device(s).
- P. Loading Rack: As defined in Rule 102 (Definitions).
- Q. Major Modification: One of the following:
 - 1. The addition, replacement, or removal of an underground storage container, or a modification that causes the container top to be unburied, is considered a major modification, or
 - 2. The replacement of an aboveground storage container. The installation of an aboveground storage container after retrofitting with standing loss controls or the exchange of an aboveground storage container for a standing loss control retrofitted aboveground storage container of equal capacity to comply with the requirements of CP-206 is not a major modification.
- R. Submerged Fill Pipe: Any fill pipe, the discharge opening of which is entirely submerged when the liquid level is 6 inches above the bottom of the container. "Submerged fill pipe" when applied to a container which is loaded from the side is defined as any fill pipe the discharge opening of which is entirely submerged when the liquid level is 18 inches above the bottom of the container.
- S. Switch Loading: The transfer of diesel fuel into a delivery vessel or storage container with a capacity over 250 gallons which previously contained gasoline.
- T. Vehicle: As described in Rule 102.

III. Exemptions

Except for the provisions of Section V.A.1, the requirements of this rule shall not apply to the following operations:

1. The transfer of gasoline into any stationary storage container with a capacity of 550 gallons or less used exclusively for fueling of implements of husbandry as such vehicles are defined in Division 16 (Section 36000 et seq.) of the California Vehicle Code, if such container is equipped with a permanent submerged fill pipe.
2. The transfer of gasoline into any stationary storage container having a capacity of 2,000 gallons or less which was installed prior to July 1, 1975, if such container is equipped with a permanent submerged fill pipe, and provided no major modification is made on the container.
3. The transfer of gasoline into any stationary storage container in existence prior to July 1, 1975 which is equipped with an offset fill pipe if such container is equipped with a permanent submerged fill pipe,

IV. Requirements

A. Gasoline Storage and Loading

1. No person shall transfer or permit the transfer of gasoline from any delivery vessel into any stationary storage container subject to requirements of this rule unless:
 - a. Such container, except those used for aviation gasoline, is equipped with an CARB certified permanent submerged fill pipe and utilizes an CARB certified Phase I vapor recovery system that is maintained and operated according to manufacturer specifications and the applicable CARB Executive Order; or
 - b. Containers used for aviation gasoline are equipped with a permanent submerged fill pipe and a Phase I vapor recovery system that is certified (or was previously certified) to meet a minimum volumetric control of 95%.
2. Any vent pipe on a stationary gasoline storage container shall be equipped with a pressure-vacuum relief valve in accordance with the requirements set forth in Sections IV.C and IV.D, as applicable.
3. Vent pipes may be manifolded, as per the applicable CARB Executive Order, to a single pressure-vacuum relief valve. The pressure-vacuum relief valve shall be properly installed and maintained according to manufacturer specifications and the applicable CARB Executive Order.
4. Operators shall have all underground storage container installations and all underground piping configurations inspected by District staff prior to backfilling unless requirement is waived in writing by APCO. The operator shall notify the District by telephone or other District-approved method at least three business days prior to the backfilling.

B. Underground Storage Containers

1. Unless otherwise specified in the applicable CARB Executive Order, for an underground storage container that contains gasoline and is located at a bulk plant, the container shall be equipped with an CARB certified pressure-vacuum relief valve set at 3.0 ± 0.5 inches water column pressure relief and 8.0 ± 2.0 inches water column vacuum relief.
2. Unless otherwise specified in the applicable CARB Executive Order, for an underground storage container that contains aviation gasoline and is located at a bulk plant, the container shall be equipped with a pressure vacuum relief valve set at 3.0 ± 0.5 inches water column pressure relief and 8.0 ± 2.0 inches water column vacuum relief.
3. For an underground storage container that contains gasoline and is not located at a bulk plant, the container shall be equipped with a CARB certified Phase I vapor recovery system that is certified to have a minimum volumetric control efficiency of 98%.
4. For an underground storage container that contains aviation gasoline and is not located at a bulk plant, the container shall be equipped with a permanent submerged fill pipe and a Phase I vapor recovery system that is certified (or was previously certified) to meet a minimum volumetric control of 95%.
5. Operators of underground storage containers not located at bulk plants shall conduct and pass the applicable performance tests specified in Sections V.C.4 through V.C.7 to determine compliance at least once every 36 months, (no more than 30 days before or after the required performance test date) unless otherwise required under CARB Executive Order or Rule 412.1(Transfer of Gasoline into Motor Vehicle Fuel Tanks).

C. Aboveground Storage Containers

1. All aboveground storage containers shall be constructed and maintained in a leak-free condition.
2. All aboveground storage containers that contain gasoline shall be equipped with an CARB certified pressure vacuum relief valve set 3.0 ± 0.5 inches water column pressure relief and 8.0 ± 2.0 inches water column vacuum relief, unless:
 - a. Otherwise specified in the applicable CARB Executive Order, or
 - b. Such setting will exceed the vessel's maximum pressure rating.
3. All aboveground storage containers that contain aviation gasoline shall be equipped with pressure relief valves set at eight (8) ounces per square inch, unless:
 - a. Otherwise specified in the applicable CARB Executive Order or
 - b. Such setting will exceed the vessel's maximum pressure rating.

4. Operators of an aboveground storage container not located at a bulk plant shall conduct and pass the performance test specified in Section 6.4.8 to determine compliance at least once every 36 months, (no more than 30 days before or after the required performance test date) unless otherwise required under CARB Executive Order.
- D. All Phase I vapor recovery systems shall be inspected according to the frequency specified in Table 1. The person conducting the inspections shall, at a minimum, verify the following:
1. That the fill caps and vapor caps are not missing, damaged, or loose;
 2. That the fill cap gasket and vapor cap gaskets are not missing or damaged;
 3. That the fill adapter and vapor adapter are securely attached to the risers;
 4. That, where applicable, the spring-loaded submerged fill tube seals properly against the coaxial tubing, and the dry break (poppet-valve) is not missing or damaged; and
 5. That the submerged fill tube is not missing or damaged.

Table 1 – Schedule of Maintenance Inspection

Gasoline dispensed by the operation during largest monthly throughput of previous year	Frequency of Inspections
A. Retail Gasoline Outlets	
1. Less than 25,000 gallons	One day per week
2. 25,000 gallons or greater	Five days per week
B. Non-Retail Gasoline Outlets and other gasoline dispensing operations	
1. Less than 2,500 gallons	One day per month
2. 2,500 to less than 25,000 gallons	One day per week
3. 25,000 gallons or greater	Five days per week

- E. Bulk Plants and Loading Racks at Bulk Plants
1. Bulk plants not involved with aviation gasoline loading shall be equipped with a CARB Certified Stage I vapor recovery system for loading operations (loading rack).
 2. Bulk plants involved with aviation gasoline loading shall be equipped with a vapor recovery system that meets a minimum volumetric control of 90% when measured in accordance with the test method specified in Section V.C.9.
 3. The vapor recovery system shall not cause the pressure in the delivery vessel to exceed 18 inches H₂O or 6 inches H₂O vacuum.

4. Operators shall store or dispose of gasoline in closed, non-leaking containers. The containers shall remain closed at all times except when depositing or removing the contents of the containers or when the container is empty.
5. Bulk Plant Leak Inspections:
 - a. All bulk plants shall be constructed and maintained in a leak-free condition.
 - b. All bulk plants shall be inspected for leaks at least once in every six-month period (from four to eight months apart) in accordance with the test procedure specified in Section V.C.2.
 - c. All loading racks located at bulk plants shall be inspected for leaks during product transfer at the frequency required in Section IV.E.5.b above.
 - d. If any storage container, storage container component, or loading rack component is found to leak during an inspection, the inspection frequency shall be changed to quarterly until the unit has successfully passed five consecutive quarterly inspections. Thereafter, the quarterly inspection may revert to the applicable inspection frequency specified in Section IV.E.5.b.
6. Bulk Plant Leak Repair:
 - a. Upon detection of a leaking component, the operator shall affix to that component a weatherproof readily visible tag with the date and time of leak detection, the date and time of leak measurement, and for gas leaks, the leak concentration in ppmv.
 - b. The tag shall remain affixed to the component until all the conditions specified in Sections IV.E.6.c and IV.E.6.d below have been met.
 - c. All leaking components shall be repaired or replaced within seven (7) business days after the leak is detected. If the component cannot be repaired within seven (7) business days, the operator must remove the leaking component(s) from VOC service.
 - d. Upon returning a leaking component to service, the following conditions must be met:
 - i. The component must be re-inspected using the test method specified in Section V.C.2; and
 - ii. The component must be found to be in compliance with the requirements of this rule.

F. Delivery Vessels

1. All delivery vessels shall have a CARB certified vapor recovery system for cargo containers. Cargo container vapor recovery systems shall be maintained and tested in accordance with manufacturer specifications and any applicable CARB Executive Orders.
2. No person shall operate, or allow the operation of a delivery vessel unless valid State of California decals which attest to the vapor integrity of the container are displayed.
3. No person shall store gasoline in, otherwise use, or operate any gasoline delivery vessel unless such vessel is designed and maintained to be leak-free. Any delivery vessel into which gasoline vapors have been transferred shall be filled only from loading racks or other delivery vessels that are equipped with a CARB certified vapor recovery system.
4. The hatch on a delivery vessel shall be equipped with a leak-free cover and the hatch shall not be opened for visual inspection unless at least three minutes have elapsed since loading or unloading has stopped. The dome hatch, once opened, shall not be held open longer than three minutes, except as directed by local, state, or federal agencies having jurisdiction.
5. Gasoline vapors shall not be purged into the atmosphere. This includes relieving container pressure by manually “popping” the poppet valve on the truck-mounted vapor return line.
6. Switch loading shall not be conducted unless such transfer is made using a permanently installed CARB certified vapor recovery system.
7. During loading of the delivery vessel, the truck-mounted vapor return line shall be connected to a vapor recovery system that meets the requirements of this rule for the vapor recovery systems.

G. General

1. Vapor-return and/or vapor recovery systems used to comply with the requirements of this Rule shall comply with all safety, fire, weights and measures, and other applicable codes and/or regulations.
2. Loading equipment and vapor collection equipment shall be installed, maintained, and operated such that it is leak-free, with no excess organic liquid drainage at disconnect.

V. Administrative Requirements

A. Record Keeping

1. All data necessary to demonstrate qualifications for the exemptions allowed in this Rule shall be maintained on the premise at all times and shall be submitted for District review upon request. Such records shall include exemption status and volume delivered to each stationary storage container serviced.
2. Bulk Plants and Loading Racks: A record of all inspections and all actions conducted on any part of the storage container or loading racks shall be maintained in chronological order showing date of inspection, description and location of any equipment replaced, and a description of the problem which required repair.
3. All bulk plants shall maintain daily gasoline throughput records.
4. All records required to demonstrate compliance with the requirements of this rule shall be retained on the premises for a minimum of five (5) years and made available on site during normal business hours to the District upon request.

B. Testing Requirements

1. Operators shall conduct all performance tests required by CARB Executive Order and facility installation and operations manual as per the frequency outline therein.
2. Each CARB certified Phase I vapor recovery system shall be performance tested within 60 days of completion of installation or modification.
3. Bulk plants involved with aviation gasoline loading subject to Section IV.F.1.b shall be performance tested within 60 days of completion of installation or modification.
4. Operators shall notify the District at least seven (7) days prior to any performance testing.
5. Operators shall submit all performance test results to the District within 30 days of test completion.

C. Test Methods

1. The Reid Vapor Pressure of gasoline shall be determined in accordance with ASTM D 5191-01.
2. Measurements of leak concentrations, excepting delivery vessels, shall be conducted according to EPA Method 21 using an appropriate portable hydrocarbon detection instrument calibrated with methane.

- a. The instrument shall be calibrated in accordance with the procedures specified in EPA Method 21 or the manufacturer's instruction, as appropriate, not more than 30 days prior to its use.
 - b. The operator shall record the calibration date of the instrument.
3. Measurements of leak concentrations for delivery vessels shall be conducted according to the CARB Test Procedure for Determination of Leaks, TP-204.3.
 4. Static Leak Test for Underground Tanks: CARB Test Procedure TP-201.3.
 5. Static Torque of Rotatable Phase I Adaptors: CARB Test Procedure TP 201.1B.
 6. Leak Rate of Drop Tube/Drain Valve Assembly: CARB Test Procedure TP 201.1C.
 7. Leak Rate of Drop Tube Overfill Protection Devices and Spill Container Drain Valves: CARB Test Procedure TP 201.1D.
 8. Static Leak Test for Aboveground Tanks: CARB Test Procedure TP-206.3 or CARB Test Procedure TP-201.3B as applicable.
 9. Determination of Emission Factor of Vapor Recovery Systems of Bulk Plants: CARB Test Procedure TP-202.1.

D. Versions of Test Methods

All test procedures shall be conducted in accordance with the latest version of the test procedures, or their equivalents as approved in writing by the APCO and EPA.

VI. Compliance Schedule

The owner or operator of any stationary storage container or gasoline loading facility which is subject to this Rule and which is installed, constructed or modified before or after the effective date of this regulation shall comply with the provisions of this Rule at the time of adoption unless otherwise specified in the Rule.

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