

RULE 412.1 Transfer of Gasoline to Vehicle Fuel Tanks - Adopted 12/17/74, Amended 6/17/75, 12/30/75, 6/7/77, 6/20/78, 1/9/79, 6/26/79, 12/15/80, 1/9/89, 11/9/92, 1/13/22

I. Applicability

This Rule applies to the transfer of gasoline into vehicle fuel tanks from stationary storage containers subject to the requirements of Rule 412 (Gasoline Transfer into Stationary Storage Containers, Delivery Vessels and Bulk Plants).

II. Definitions

- A. APCO: Air Pollution Control Officer as defined in Rule 102 (Definitions)
- B. ASTM: American Society for Testing and Materials.
- C. 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.
- D. CARB: California Air Resources Board
- E. CARB-Certified Phase II Vapor Recovery System: 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.
- F. Component: Includes, but is not limited to, any valve, latch, fitting, pressure relief device, hose, nozzle, dispenser, or module in VOC service.
- G. E85 Fuel: A blend of 85 percent ethanol and 15 percent gasoline, having a Reid vapor pressure of four (4) pounds per square inch absolute or greater, which is used as a motor vehicle fuel.
- H. Emergency: A fire, flood, earthquake, or other similar catastrophe.
- I. EPA: United States Environmental Protection Agency.
- J. 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.

- K. Gasoline Storage and Dispensing Operation: An aggregate of one or more stationary storage containers, and associated dispensing equipment, any of which is subject to the provisions of Rule 412 (Gasoline Transfer into Stationary Storage Containers, Delivery Vessels and Bulk Plants).
- L. Gasoline Vapors: The organic compounds in displaced vapors, including any entrained liquid gasoline.
- M. Hold-Open Latch: The integral component of a gasoline dispensing nozzle permitting the nozzle to remain open without sustained effort by the user.
- N. ICC: The International Code Council.
- O. In-Station Diagnostics (ISD): Equipment that provides continuous real-time monitoring of critical emission-related vapor recovery system parameters and components, and alerts the station operator when a failure mode is detected so that corrective action is taken.
- P. IOM Manual: Installation, Operation, and Maintenance Manual.
- Q. Leak: The dripping of VOC-containing liquid at a rate of more than three (3) drops per minute, or the detection of any gaseous or vapor emissions with a concentration or total organic compound greater than 10,000 ppmv, as methane, above background when measured in accordance with the test method in Section 6.5.4. Any liquid or gas coming from a component undergoing repair or replacement, or during sampling of process fluid from a component or equipment into a container is not considered sampling of a leak provided such activities are accomplished as expeditiously as possible and with minimal spillage of material and VOC emissions to the atmosphere.
- R. Liquid Condensate Trap (knock-out pot, thief port): A device designed to collect liquid that condenses in the vapor return line in a manner that allows it to be evacuated and ensures that the vapor return line will not be blocked by the accumulation of liquid.
- S. Major Defect: Any defect that meets the criteria of California Code of Regulations, Title 17, Division III, Chapter 1, Subchapter 8, Article 1, Section 94006 and is listed on ARB's Vapor Recovery Equipment Defects (VRED) list or is specified within the ARB's Executive Order certifying the vapor recovery system, as applicable.
- T. Major Modification: Replacing, repairing, or upgrading 75%, or more of a CARB-Certified Phase II Vapor Recovery System.
- U. Motor Vehicle: Any self-propelled vehicle registered for use on public highways.
- V. Phase II Vapor Recovery System: A vapor recovery system that controls vapors during the transfer of gasoline from the gasoline dispensing operation to the vehicle and storage of gasoline vapors at the gasoline dispensing operation.

- W. Portable Hydrocarbon Detection Instrument: A hand-held hydrocarbon analyzer that meets the criteria specified in US EPA Method 21, 40 CFR Part 60. The instrument shall be calibrated with methane.
- X. Retail Service Station: Any new or existing gasoline storage and dispensing facility subject to payment of California Sales Tax on gasoline dispensed.
- Y. Topping Off: Attempting to dispense gasoline into a motor vehicle fuel tank after a vapor recovery dispensing nozzle has automatically shut off. The filling of a vehicle tank which can be filled only after the seal between the fill pipe and the nozzle is broken, due to the nature and configuration of the fill pipe which causes premature shut-off of the dispensing nozzle, shall not be considered topping off.
- Z. Vehicle: As described in Rule 102.
- AA. Vehicle Fleet: A group of vehicles operated under the control of a single owner/operator.

III. Exemptions

- A. Except for the provisions of Section V.A, this Rule shall not apply to transfer of gasoline into motor vehicle fuel tanks from any gasoline storage and dispensing facility with a throughput of:
 1. Less than or equal to 24,000 gallons per calendar year, and
 2. Less than or equal to 10,000 gallons in any one month.
 3. A facility whose gasoline throughput exceed the level in Section A. or B. shall lose the exemption provided by this Section.
- B. The requirements of this rule shall not apply to gasoline storage containers that are exempt pursuant to Section III of Rule 412 (Gasoline Transfer into Stationary Storage Containers, Delivery Vessels, and Bulk Plants).
- C. Except for Section V.A.3 and V.C, the requirements of this rule shall not apply to vehicle fleets where 90 percent of the vehicles are equipped with onboard refueling vapor recovery (ORVR) systems. To qualify for this exemption, the operator must also own the gasoline dispensing operation that services the vehicle fleet.
- D. The requirements of this rule shall not apply to E85 fuel dispensing operations.

IV. Requirements

- A. A person shall not transfer or permit the transfer of gasoline from a stationary storage container into a motor vehicle fuel tank with a maximum capacity of more than five (5) gallons unless the gasoline-dispensing unit is equipped with, and has in operation a CARB-Certified Phase II Vapor Recovery System.

1. All CARB certified Phase II vapor recovery systems shall be maintained according to CARB certifications and the manufacturer specifications applicable to the system.
2. All CARB certified Phase II vapor recovery systems and gasoline dispensing equipment shall be maintained without leaks as determined in accordance with the test method in Section V.D.4.

B. Inspections

1. 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.
2. The owner or operator of an CARB certified Phase II vapor recovery system shall conduct periodic maintenance inspections to ensure that components of the vapor recovery system are in proper operating condition.
3. The frequency of inspections shall be based on the operation’s largest monthly gasoline throughput from the previous calendar year as indicated in Table 1.

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

4. The frequency of vapor path inspections shall be based on the amount of gasoline dispensed by the operation in a calendar month as indicated in Table 1.
5. The person conducting the inspections shall at a minimum, verify the following during inspections:
 - a. That the fueling instructions required by Section IV.G are clearly displayed with the appropriate toll-free complaint phone number and toxic warning signs.

- b. That the following nozzle components are in place and in good condition as specified in the applicable CARB Executive Orders: faceplate/facecone, bellows, latching device spring, vapor check valve, spout (proper diameter/vapor collection holes), insertion interlock mechanism, automatic shut-off mechanism, hold open latch.
- c. That the hoses are not torn or crimped.
- d. That the vapor path of coaxial hoses associated with bellows equipped nozzles does not contain more than 100 ml of liquid, or as required by the applicable CARB Executive Order.
 - i. The amount of liquid in the vapor path shall be determined by lowering the gasoline dispensing nozzle into a container, opening the vapor check valve, and allowing the hose to drain until such time that no more liquid drains from the nozzle.
 - ii. The amount of liquid drained into the container shall be measured using a graduated cylinder or graduated beaker.

C. Maintenance and repair

A person shall not operate any CARB-Certified Phase II Vapor Recovery System, or any portion thereof, containing a major defect until the defect has been repaired, replaced, or adjusted as necessary to correct the defect, and the District has been notified, and has reinspected the system or has authorized its use pending reinspection. Upon identification of any major defect, the owner or operator shall tag "out-of-service" all dispensing equipment for which vapor recovery has been impaired. Authorization to reuse equipment shall not include permission to operate prior to correction of defective components.

- D. No person shall tamper with, or permit tampering with a CARB-Certified Phase II Vapor Recovery system in any way which could impair collection and/or disposal of gasoline vapors.
- E. Gasoline storage and dispensing equipment used to comply with provisions of this Rule shall comply with all applicable codes and regulations, including safety, fire, weights and measures, etc..
- F. An owner or operator of a retail service station subject to this Rule shall conspicuously post operating instructions for the system in the gasoline dispensing area. These instructions shall: 1) clearly describe how to correctly fuel vehicles using Phase II dispensing nozzles, 2) include a warning that topping off may result in spillage or recirculation of gasoline and is prohibited, and 3) prominently display the District's or CARB's toll-free telephone numbers, or both, and the information that such numbers can be used to register complaints regarding the operation of the vapor recovery system.

- G. No person shall top off a motor vehicle fuel tank.
- H. All retail service stations shall utilize hold-open latches on all gasoline dispensing nozzles. All hold-open latches shall be installed on the gasoline dispensing nozzle by the original manufacturer of the nozzle, or if retrofitted, shall be installed using components and procedures approved by the nozzle manufacturer.

Requirements of this Subsection shall not apply to facilities if use of hold-open latches is prohibited by law or a fire control authority.

- I. All liquid removal devices required by CARB Executive Order shall be maintained to achieve a minimum liquid removal rate of five milliliters per gallon. This standard shall apply at dispensing rates exceeding five gallons per minute, unless a higher removal rate is specified in the applicable Executive Order.
- J. Liquid Condensate Traps

Liquid condensate traps shall be used, if necessary, to keep the vapor return piping clear of any liquid blockage from the remote dispenser to the aboveground storage tank or when it is not possible to achieve the necessary slope from the dispenser to the underground storage tank.

- 1. Liquid condensate traps shall be used only when the minimum slope requirements of 1/8 inches per foot of run cannot be met due to the topography.
- 2. When liquid condensate traps are installed on gasoline dispensing systems equipped with an ARB certified Phase II enhanced vapor recovery system, they shall meet the following requirements:
 - a. Maintained vapor tight;
 - b. Accessible for inspection upon request;
 - c. Capable of automatic evacuation of liquid; and
 - d. Equipped with an alarm system in case of failure of the evacuation system

- K. In-Station Diagnostics (ISD) System

- 1. The owner or operator shall not clear, or allow any other individual to clear, any ISD warning or failure alarms prior to taking appropriate action. The appropriate action shall be in accordance with the IOM manual for the Phase II vapor recovery system or a CARB Advisory, which shall be effective until rescinded by CARB.
- 2. In the event of an ISD failure alarm and subsequent automatic shutdown of gasoline dispensing, the owner or operator shall not re-enable or allow the re-enabling of the affected fueling point(s) unless all troubleshooting, repairs and tests specified in the applicable CARB Executive Order and IOM for the Phase II vapor recovery system, have been successfully completed or are in the process of being completed and documented.

3. The owner or operator shall keep records of all alarms detected by the ISD system. The records shall include the following:
 - a. The alarm date;
 - b. The nature of the alarm;
 - c. Type of test and test date to verify the validity of ISD alarm;
 - d. Maintenance or repair date to correct the cause of the alarm;
 - e. Maintenance or repair performed to correct the cause of the alarm; and
 - f. Affiliation, telephone number, name and Certified Technician Identification Number of individual conducting maintenance or test.

V. Administrative Requirements

A. Recordkeeping and Reporting for Exempt Operations:

1. Each gasoline dispensing facility exempt pursuant to Section III.A shall maintain gasoline throughput records allowing gasoline throughput for any 30-day period to be continuously determined. These records shall be available upon request to the APCO and maintained on the premises for 3 years.
2. Any gasoline dispensing operation previously exempt under Section III.A whose gasoline throughput exceeds the exemption levels in Sections III.A.1 and III.A.2 shall notify the District within 30 days of the date of exceeding the exemption levels.
3. An operator claiming exemption under Section III.C shall keep a record of the make, model, model year, and vehicle identification number of all vehicles refueled at the gasoline dispensing operation. These records shall be maintained on the premises for at least 3 calendar years.

B. Recordkeeping and Reporting for Non-Exempt Operations:

1. Verification that each CARB-Certified Phase II Vapor Recovery System meets or exceeds the requirements of tests specified in Subsection V.C shall be maintained. These test results shall be dated and shall contain the names, addresses, and telephone numbers of person(s) responsible for system installation and testing.
2. A person who performs repairs on any CARB certified Phase I or Phase II vapor recovery system shall provide to the owner or operator a repair log, which the owner or operator shall maintain on the premises for at least 3 years and which shall include all of the following:
 - a. Date and time of each repair;
 - b. The name and applicable certification numbers of the person(s) who performed the repair, and, if applicable, the name, address and phone number of the person's employer;
 - c. Description of service performed;

- d. Each component that was repaired, serviced, or removed;
 - e. Each component that was installed as replacement, if applicable;
 - f. Receipts or other documents for parts used in the repair and, if applicable, work orders which shall include the name and signature of the person responsible for performing the repairs.
3. Each operator who is required to perform periodic maintenance inspections under Section IV.B shall maintain monthly gasoline throughput records on the premises for a minimum of 3 years, make them available on site during normal business hours to the APCO, CARB, or EPA upon request.

C. Testing

1. Operators shall comply with the CARB certified Phase II vapor recovery system performance tests specified in Sections V.C.1.a through V.C.1.D and shall conduct all applicable performance tests at start up and thereafter (no more than 30 days before or after the required compliance testing date) as required by the applicable CARB Executive Order and installation and operation dys.
 - a. Conduct and pass a Static Leak Test of the CARB certified Phase II vapor recovery system at least once every twelve months.
 - b. Conduct and pass a Dynamic Back-Pressure Test of the CARB certified Phase II vapor recovery system at least once every twelve months. Aboveground storage tanks that have integral dispensers (non-remote) are exempt from this requirement unless otherwise required under the applicable CARB Executive Order.
 - c. For CARB certified Phase II vapor recovery systems with bellowsless nozzles, conduct and pass, as applicable, an Air-to-Liquid Volume Ratio Test or a Vapor-to-Liquid Ratio Test at least once every twelve months.
 - d. For CARB certified Phase II vapor recovery systems with a liquid removal device required by CARB Executive Orders, conduct and pass a Liquid Removal Test whenever the liquid in the vapor path exceeds 100 ml of liquid, or as required by the applicable CARB Executive Order. The amount of liquid in the vapor path shall be determined in accordance with the procedure specified in Section IV.B.4.d.i
2. The person responsible for conducting the tests specified in Section V.C shall use calibrated equipment meeting the calibration range and calibration intervals specified by the manufacturer, CARB Executive Order, or CARB test procedure.
3. Each gasoline dispensing operation shall notify the District at least seven days prior to any performance testing.

4. Each CARB certified Phase II vapor recovery system shall be tested within 60 days of completion of installation or modification.

D. Test Methods

1. Tests shall be conducted in accordance with the latest version of the following CARB and EPA approved test methods, or their equivalents as approved by the EPA, and the APCO.
 - a. Static Leak Test for Underground Tanks, CARB TP-201.3
 - b. Dynamic Back-Pressure Test, CARB TP-201.4
 - c. Air-to-Liquid Volume Ratio Test, CARB TP-201.5
 - d. Liquid Removal Test, CARB TP-201.6C
 - e. Static Leak Test for Aboveground Tanks, CARB TP-206.3 or TP201.3B as applicable.
2. Those vapor recovery systems whose CARB Executive Orders specify different tests to be performed instead of, or in addition to, the referenced test methods, or which, by their design, preclude the use of the referenced test methods, shall be tested in accordance with the test procedures specified in the applicable CARB Executive Orders or their equivalents as approved by the APCO and EPA.
3. The Reid Vapor Pressure of gasoline shall be determined in accordance with ASTM D5191-01.
4. Detection of leaks shall be in accordance with EPA Test Method 21.

VI. Compliance Schedule

- A. Any person becoming subject to the requirements of this Rule through loss of exemption shall comply with the following increments of progress:
 1. Within thirty (30) days of loss of exemption from this Rule, submit an application for Authority to Construct necessary vapor control equipment.
 2. Testing for compliance with this rule shall be completed within 60 days of system start-up.
- B. Prior to operating under the exemption in Section III.C, operators shall modify their Permits to Operate conditions, to allow such operations, pursuant to District Rule 210.1 (New & Modified Stationary Source Review Rule).
- C. Any person who becomes subject to the requirement of the installation and operation of an ISD system shall within 30 days of loss of exemption from ISD requirements, submit a complete application for an Authority to Construct.