

**RULE 448 GASOLINE TRANSFER INTO STATIONARY STORAGE CONTAINERS**

Adopted 2-5-75

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**100 GENERAL**

- 101 **PURPOSE:** To limit emissions resulting from the transfer of gasoline into any stationary storage container or delivery vessel, or from the pump-out of gasoline from any stationary storage container, delivery vessel, or vehicle fuel tank.
- 102 **APPLICABILITY:** This rule applies to the transfer of gasoline or switch loading from any delivery vessel into any stationary storage container with a capacity of 250 gallons or more, or any mobile fueler with a capacity of 120 gallons or more. This rule also applies to the "pump-out" of gasoline from any stationary storage container with a capacity of 250 gallons or more, mobile fueler with a capacity of 120 gallons or more, or vehicle fuel tank with a capacity of 5 gallons or more.
- 110 **EXEMPTION, IMPLEMENTS OF HUSBANDRY:** The provisions of this rule shall not apply to the transfer of gasoline into any stationary container which is used primarily for the 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.

**200 DEFINITIONS**

- 201 **BACKGROUND:** A reading as methane on a portable hydrocarbon detection instrument which is determined at least three (3) meters upwind from the affected device to be inspected and uninfluenced by any specific emission point.
- 202 **CARB:** The California Air Resources Board.
- 203 **CARB CERTIFIED:** A Phase I or Phase II vapor recovery system, equipment, or any component thereof, for which CARB has evaluated its performance and issued a valid Executive Order pursuant to Health and Safety Code Section 41954. Each component of a system is a separate CARB certified item and 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.
- 204 **DELIVERY VESSEL:** Any motor vehicle, trailer, or rail car used for the transportation of gasoline.
- 205 **DRY BREAK:** A Phase I vapor recovery component that opens only by connection to a mating device to ensure that no gasoline vapors escape from the underground storage tank before the vapor return line is connected and sealed.
- 206 **EXECUTIVE ORDER:** A document issued by CARB pursuant to Health and Safety Code Section 41954 certifying that a specific vapor recovery system meets the applicable performance specifications and setting conditions for the certification.
- 207 **GASOLINE:** Any petroleum distillate or petroleum distillate/alcohol blend having a Reid vapor pressure of 4 pounds per square inch absolute or greater as determined by a method specified in Section 501.1.
- 208 **GASOLINE DISPENSING FACILITY:** A mobile fueler or a stationary source consisting of one or more storage tanks and associated equipment that receives, stores, and dispenses gasoline to motor vehicle fuel tanks.
- 209 **GASOLINE VAPORS:** Organic compounds in the displaced vapors including any entrained liquid gasoline.

- 210 **INSTALLER/CONTRACTOR:** A person(s) engaged in the installation, alteration, repair, or replacement of a vapor recovery system or its components at a gasoline dispensing facility.
- 211 **LEAK FREE:** A liquid leak of less than three drops per minute.
- 212 **MOBILE FUELER:** Any gasoline delivery vessel with an attached container that is used to transport and dispense gasoline from an onboard storage container into any motor vehicle fuel tank.
- 213 **PURGE:** To release gasoline vapors, gases, or hydrocarbon vapors to the atmosphere from a delivery vessel by introduction of air or an inert gas.
- 214 **REBUILD/REBUILT:** Repairs, replacements, or reconstructions to any part of a component of a vapor recovery system that forms the gasoline vapor passage of the component, or that comes in contact with the recovered gasoline vapors in the component. Rebuild does not include the replacement of a complete component with another CARB certified complete component; nor does it include the replacement of a spout, bellows, or vapor guard of a CARB certified nozzle. The new part shall be CARB certified and as supplied by the qualified manufacturer specifically for the CARB certified nozzle.
- 215 **SPILL CONTAINER:** An enclosed container around a Phase I fill pipe that is designed to collect gasoline spillage resulting from disconnection between the liquid gasoline delivery hose and the fill pipe.
- 216 **SUBMERGED FILL PIPE:**
- 216.1 Top Loading: Any fill pipe which has the discharge opening entirely submerged when the liquid level is 6 inches above the bottom of the tank.
- 216.2 Side Loading: Any fill pipe which has the discharge opening entirely submerged when the liquid level is 18 inches above the bottom of the tank.
- 217 **SWITCH LOADING:** The transfer of diesel fuel into a delivery vessel or storage container which previously contained gasoline.
- 218 **TESTER:** Any person(s) who conducts performance or reverification test as required by this Rule or by a CARB Executive Order.
- 219 **VAPOR RECOVERY EQUIPMENT DEFECTS (VRED) LIST:** A list of defects CARB has identified as substantially impairing the efficiency of the vapor recovery system, incorporated by reference in Title 17 CCR Section 94006, pursuant to California Health & Safety Code Section 41960.2(c).
- 220 **VAPOR TIGHT:**
- 220.1 For delivery vessels other than mobile fuelers, a reading 100% or less of the lower explosive limit (21,000 ppm measured as equivalent propane), as determined by the method specified in Section 501.2(a).
- 220.2 For all other operations, a condition under which the concentration of total organic compounds, measured 0.4 inch (1 centimeter) from any source, does not exceed 10,000 ppmv (expressed as methane) above background, as determined by the method specified in Section 501.2(b).

### 300 STANDARDS

- 301 **EQUIPMENT AND OPERATION REQUIREMENTS:** A person shall not transfer or permit the transfer of gasoline, or perform or permit switch loading, from any delivery vessel into any stationary storage container with a capacity of 250 gallons or more or mobile fueler with a capacity of 120 gallons or more, unless such container is provided with a permanent submerged fill pipe and unless such transfer is made under the following conditions, as applicable:

- 301.1 Underground storage tanks are equipped with a CARB certified vapor recovery system that shall prevent emission to the atmosphere of at least 98%, by volume, of the gasoline vapors displaced from the storage container during the transfer of gasoline into the container. The vapor recovery system shall be maintained and operated according to the manufacturer's specifications and the applicable CARB Executive Orders, and shall meet all of the following:
- The vapor recovery system is maintained to be leak free, vapor tight, and in good working order;
  - All fill tubes are equipped with vapor tight caps;
  - All dry breaks are equipped with vapor tight seals and vapor tight caps;
  - Each vapor tight cap is in a closed position except when the fill tube or dry break it serves is actively in use.
  - A CARB certified spill container shall be installed and maintained free of standing liquid, debris and other foreign matter. The spill container shall be equipped with an integral drain valve or other devices that are certified by CARB to return spilled gasoline to the underground stationary storage tank. The drain valve shall be maintained closed and vapor tight at all times except when the valve is actively in use.
- 301.2 Aboveground storage tanks are equipped with a CARB certified vapor recovery system that shall prevent emission to the atmosphere of at least 95%, by volume, of the gasoline vapors displaced from the storage container during the transfer of gasoline into the container, or the tank shall be equipped as described in Rule 446 – STORAGE OF PETROLEUM PRODUCTS, and shall meet all of the following:
- The vapor recovery system shall be maintained and operated according to the manufacturer's specifications and the applicable CARB Executive Orders;
  - The vapor recovery system is maintained to be leak free, vapor tight, and in good working order;
  - All fill tubes are equipped with vapor tight caps;
  - All dry breaks are equipped with vapor tight seals and vapor tight caps;
  - All vapor return lines without dry breaks are equipped with vapor tight caps;
  - Each vapor tight cap is in a closed position except when the fill tube or dry break it serves is actively in use.
  - All CARB certified coaxial fill tubes are spring-loaded and operated so that the vapor passage from the stationary storage tank or the mobile fueler back to the tank truck trailer is not obstructed.
- 301.3 Mobile fuelers are equipped with a CARB certified vapor recovery system that shall prevent emission to the atmosphere of at least 95%, by volume, of the gasoline vapors displaced from the mobile fueler container during the transfer of gasoline into the container. The vapor recovery system shall be maintained and operated according to the manufacturer's specifications and the applicable CARB Executive Orders, and meet all of the following:
- The vapor recovery system is maintained to be leak free, vapor tight, and in good working order;
  - The container dome hatch must remain closed and latched at all times. It must not be opened for the purpose of routine tank gauging operations. It may only be opened to accomplish inspections which are necessary due to equipment failures, scheduled maintenance and repairs.
- 302 **DELIVERY VESSELS:** A person shall not operate, or allow the operation of a gasoline delivery vessel other than a mobile fueler, unless it is certified according to CARB Certification Procedure CP-204 and maintained in compliance with the certification requirements, and meets all of the following:
- 302.1 Each gasoline delivery elbow is equipped with sight windows.
- 302.2 The fuel delivery lines shall be maintained leak free, vapor tight, and free of air ingestion. A fuel delivery that is free of air ingestion is determined by observing the fuel stream as clear and free of air bubbles through the sight windows on the delivery system, except during the initial and final 60 seconds of fuel transferring.

- 302.3 All vapor return lines are connected between the delivery vessel and the stationary storage tank or other delivery vessel. In addition, all associated hoses, fittings, and couplings are maintained in a leak free and vapor-tight condition.
- 302.4 The hatch on any delivery vessel shall be equipped with a vapor tight cover during gasoline transfer and pumping. The hatch shall not be opened except for visual inspection, which may be performed after at least three minutes following the completion of the gasoline transfer or pumping. Except otherwise specified by CARB, visual inspection shall be completed in three minutes or less.
- 302.5 A person shall not purge gasoline vapors, gases, or hydrocarbon vapors from a delivery vessel to the atmosphere.
- 303 **PRESSURE VACUUM VALVE REQUIREMENT:** Unless otherwise specified in the applicable CARB Executive Order, the operator of any vapor recovery system shall have a pressure vacuum valve installed on all vent pipes open to the atmosphere with a minimum pressure setting at 2.5 to 6.0 inches of H<sub>2</sub>O. The pressure vacuum valve shall have a minimum vacuum setting at 6.0 to 10.0 inches of H<sub>2</sub>O.
- 304 **PROHIBITION OF SALE:** A person shall not supply, offer for sale, sell, install or allow the installation of any new or rebuilt vapor recovery system or any of its components, unless the system and components are CARB certified. Each vapor recovery system and its components shall be clearly and permanently marked with the qualified manufacturer's name and model number as certified by CARB. In addition, any qualified manufacturer who rebuilds a component shall also clearly and permanently mark the corresponding information on the component.
- 305 **PUMP-OUT:**
- 305.1 No person shall allow the transfer ("pump-out") of gasoline from a stationary storage container with a capacity of 250 gallons or more or a mobile fueler with a capacity of 120 gallons or more into a stationary storage container or delivery vessel unless the transfer is made using a vapor collection and transfer system capable of returning the displaced vapors to the storage container being pumped out.
- 305.2 No person shall allow the transfer ("pump-out") of gasoline from a vehicle fuel tank with a capacity of 5 gallons or more into a stationary storage container or delivery vessel unless the amount of gasoline allowed to drip outside an area that drains back into the vehicle fuel tank is less than 3 drops per minute.
- 306 **MAINTENANCE INSPECTION:**
- 306.1 The owner/operator of a gasoline dispensing facility shall, at a minimum, verify the following on each day that fuel is delivered:
- The spill container is clean and does not contain gasoline. The spill containment drain valve is seating properly.
  - The fill caps and gaskets are not missing, damaged or loose.
  - The spring-loaded submerged fill pipe seals properly against the coaxial fitting.
  - The dry break (poppet valve) is not missing or damaged.
  - The submerged fill pipe is not missing or damaged.
- 306.2 Any equipment with a major defect listed in the VRED List shall be removed from service and tagged to ensure that is not used until it is repaired and brought into compliance before being returned to service.
- 306.3 The owner or operator of a vapor recovery system shall insure that the removal from service of one component of a vapor recovery system with multiple components will not result in gasoline liquid or vapors entering the atmosphere.
- 306.4 Defects discovered during the maintenance inspection and repaired in accordance with Title 17, Division 3, Subchapter 7.5, Chapter 1, Section 93101 of California Code of Regulations such that after repair gasoline liquid or vapors do not enter the atmosphere shall not constitute a violation of Rule 448.
- 307 **PROHIBITION OF USE:** Whenever a Phase I vapor recovery system, or any component thereof, contains a defect listed in the VRED List, the operator shall mark such system or component "Out of Order". No person shall use or permit the use of such marked component

or system until it has been repaired, replaced, or adjusted, as required to permit proper operation, and the Air Pollution Control Officer has reinspected it or has authorized its use pending reinspection.

#### 400 ADMINISTRATIVE REQUIREMENTS

##### 401 CERTIFICATION:

- 401.1 Effective May 26, 2009, installers/contractors shall not install, alter, repair or replace a vapor recovery system unless they meet all of the following requirements:
- a. Are certified by the International Code Council (ICC) for Vapor Recovery System Installation and Repair, and, if required by the Executive Order, certified by the system manufacturer.
  - b. Maintain valid certifications as required in paragraph (a).
  - c. Have and make available on site proof of any and all certifications required by this Rule, the Executive Order and the Installation, Operation and Maintenance Manual in order to install or maintain specific systems.
- 401.2 Testers shall not test a vapor recovery system unless they meet all of the following requirements:
- a. Effective 3 months after a certification test is available, be certified by the International Code Council (ICC) for Vapor Recovery System Testing and Repair.
  - b. If required by the Executive Order, be certified by the system manufacturer.
  - c. Maintain valid certifications as required in paragraph (a) and (b).
  - d. Have and make available on site proof of any and all certifications required by this Rule, the Executive Order and the Installation, Operation and Maintenance Manual in order to test specific systems.

- 402 **NOTIFICATION OF TESTING:** At least 7 days prior to performance or reverification testing, the owner or operator shall notify the Air Pollution Control Officer of the exact date and time of the test. If the vapor recovery system fails any of the applicable tests and the necessary repairs are performed that same day, the owner or operator may retest the vapor recovery system on the same day without re-notification, provided that the reasons for the test failure and any repairs performed are properly documented in the test reports and repair records.

- 403 **TEST REQUIREMENTS FOR VAPOR RECOVERY SYSTEM:** The following requirements are to verify the proper operation of a vapor recovery system.

- 403.1 **Required Tests:** Unless otherwise specified in the applicable CARB Executive Orders, performance and reverification tests shall include the following, as applicable, according to the test methods specified in Section 501 of this rule:
- a. Static Torque of Rotatable Adaptors Test
  - b. Leak Rate of Drop Tube Test
  - c. Leak Rate of Drop Tube Overfill Protection Devices and Spill Container Drain Valves
  - d. Leak Rate and Cracking Pressure of P/V Valves Test, and
  - e. Static Leak Tests
- 403.2 **Initial Tests:** Within 30 calendar days of completion of construction or modification of any vapor recovery system, the owner or operator shall conduct and pass all applicable performance tests.
- 403.3 **Testing Frequency:** The owner/operator of a gasoline dispensing facility shall perform and pass all applicable reverification tests annually within 30 days of the end of each annual period following the most recent successful tests, or more frequently as required by the applicable CARB Executive Order. For facilities that were not required to perform periodic testing prior to February 26, 2009, the first annual test shall be performed by February 26, 2010.

#### 500 MONITORING AND RECORDS

- 501 **TESTING PROCEDURE:** The performance and reverification tests shall be conducted in accordance with the following test methods. All test methods referenced in this section shall

be the most recent version approved by the U.S. Environmental Protection Agency, CARB, and the Air Pollution Control Officer or as stated in the applicable Executive Orders.

- 501.1 Vapor Pressures: Vapor pressures shall be determined by ASTM D2879-97 (2007), ASTM D323-06 or ASTM D5191-07.
- 501.2 Vapor Tight:
  - a. For delivery vessels other than mobile fuelers, CARB Vapor Recovery Test Procedure TP-204.3 shall be used to determine vapor tight condition.
  - b. For all other operations, EPA Reference Method 21 shall be used to determine vapor tight condition.
- 501.3 Static Torque of Rotatable Phase I Adaptors: CARB Test Procedure TP-201.1B.
- 501.4 Leak Rate of Drop Tube/Drain Valve Assembly Test: CARB Test Procedure TP-201.1C.
- 501.5 Leak Rate of Drop Tube Overfill Protection Devices and Spill Container Drain Valves: CARB Test Procedure TP-201.1D
- 501.6 Leak Rate and Cracking Pressure of P/V Valves Test: CARB Test Procedure TP-201.1E
- 501.7 Static Leak Tests: CARB Test Procedure TP-201.3 or TP-201.3B as applicable.
- 501.8 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.
- 501.9 Multiple Test Methods: When more than one test method or set of test methods is specified for any testing, a violation of any requirement of this rule established by any one of the specified test methods or set of test methods shall constitute a violation of this rule.

502 **RECORDKEEPING:** A person subject to this rule shall maintain the following records on-site and make them available for review by the Air Pollution Control Officer immediately upon request.

- 502.1 Results of the tests specified in Section 402 shall be delivered to the Air Pollution Control Officer within thirty (30) days of the completion of the test. The test results shall contain the following information:
  - a. Name, location, address, and telephone number of the facility tested, and Sacramento Metropolitan Air Quality Management District permit number
  - b. Name, address and phone number of the person or company performing the test
  - c. Date of the test
  - d. Test data
  - e. Statement of pass or fail
- 502.2 Maintenance inspection reports shall include at least the following:
  - a. Date and time of inspection
  - b. List of defects from the VRED List that are applicable to the vapor recovery equipment and have a verification procedure of "direct observation" or "direct measurement"
  - c. Notation by person performing inspection whether each defect is present
  - d. Description of any defects discovered
  - e. Action taken upon discovery of a defect
  - f. Name and signature of person performing inspection
- 502.3 The following records must be retained by the owner or operator for a period not less than 3 years (5 years for sources subject to the requirements of Rule 207, Title V - Federal Operating Permit Program):
  - a. Maintenance records for the vapor recovery system
  - b. Repair records for the vapor recovery system
  - c. Maintenance inspection reports
  - d. Records of repairs performed as a result of defects discovered during maintenance inspections
  - e. Performance test results
  - f. Reverification of performance test results