California Environmental Protection Agency

Air Resources Board

Vapor Recovery Certification Procedure

CP-204

Certification Procedure for Vapor Recovery Systems of Cargo Tanks

Adopted: April 12, 1996
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[Note: This Certification Procedure is being amended and the entire March 17, 1999 version is being repealed. For ease of viewing, the document is shown in plain text.]

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A set of definitions common to all Certification and Test Procedures are in:

D-200 Definitions for Vapor Recovery Procedures

For the purposes of this procedure, the term “ARB” or “CARB” refers to the California Air Resources Board and the term “Executive Officer” refers to the ARB Executive Officer or his or her authorized representative or designee.

1. GENERAL INFORMATION AND APPLICABILITY

This procedure describes the process for certifying cargo tanks with a system that recovers vapors during the loading and unloading of gasoline. The cargo tank vapor recovery system prevents gasoline vapors from being emitted into the air.

Other vapor recovery certification procedures provide instructions for determining performance standards, performance specifications, and test procedures for equipment which recovers vapors emitted in association with gasoline marketing operations involving: dispensing facilities (CP-201 or CP-206); bulk plants and cargo tanks (CP-202); and supply lines, terminals, delivery lines, and cargo tanks (CP-203). This procedure establishes performance standards or specifications for cargo tanks, including trucks and trailers that transport gasoline. State law provides that no person shall operate, or allow the operation of, a cargo tank unless the cargo tank is certified and maintained in accordance with these procedures. Certifications shall be issued on an annual basis and shall expire on the last day of the month one year following the month of issuance of the certification.

1.1 Legislative and Regulatory Requirements of Other Agencies

In addition to ARB, other federal, state, or local government bodies may enforce laws and regulations applicable to vapor recovery systems. Cargo tank owners or operators are responsible for complying with all applicable laws and regulations including regulations of the California Highway Patrol, the Department of Forestry and Fire Protection, Office of the State Fire Marshal, and the Department of Industrial Relations, Division of Occupational Safety and Health.

2. SUMMARY OF CERTIFICATION PROCESS

The owner or operator of any cargo tank shall:

(1) annually test such cargo tank(s) in accordance with the provisions of section (§) 3.1 and
(2) annually apply for certification of such tank(s) in accordance with this certification procedure.

Tests shall be conducted by the owner or operator of the cargo tank, or a consultant or contractor, at the expense of the owner or operator. Prior to testing, the owner or operator shall notify the Executive Officer, no less than 48 hours prior to the start of test, of the date, time, and location of the test. The Executive Officer may observe or conduct tests referenced in § 3.1.

2.1 Application for Certification of an Individual Cargo Tank

The application for certification of individual cargo tanks shall be submitted to the Executive Officer through the ARB Online Cargo Tank Vapor Recovery Certification Program that can be accessed through the ARB webpage at www.arb.ca.gov/enf/cargotanks/cargotanks.htm, and shall contain the following information:

1. Name, address, email address, and telephone number of owner or operator, and company name (if applicable).
2. The sizes and number of compartments of the cargo tank.
3. The cargo tank number issued by CARB.
4. A statement that the tank has been tested according to the annual test procedures prescribed in § 3.1 of this certification procedure and complies with the corresponding performance standards.
5. All test data supporting the statement in item (4) above.
6. A declaration under penalty of perjury by the person conducting the test that the information contained in items (4) and (5) is true and correct.
7. A declaration under penalty of perjury by the applicant setting forth his or her property interest in the cargo tank and stating that all information is true and correct.

2.2 Compatibility

The cargo tank when connected to an ARB certified vapor recovery system at a bulk plant, terminal, gasoline dispensing facility (GDF) with an underground storage tank (UST), or GDF with an aboveground storage tank (AST) shall not prevent such systems from achieving the required vapor recovery efficiency and/or emission factor referenced in CP-202 for bulk plants, CP-203 for terminals, CP-201 for GDF with UST, and CP-206 for GDF with

AST. The connectors and fittings of the cargo tank shall be compatible with an ARB certified Phase I system installed at GDFs with USTs and ASTs. Such compatibility may be achieved by the use of adapters.

2.3 Condition of Certification

When the Executive Officer determines the application complies with all applicable provisions of this certification procedure, the Executive Officer shall issue a non-transferable and non-removable decal to be affixed to the right side of the cargo tank on the vertical mid-line, near the front of the vessel. Furthermore, the owner/operator shall ensure that the ARB issued Cargo Tank Number for the vessel shall be on the cargo tank in a location that can be readily seen. As a condition of certification, the Executive Officer shall return a copy of the application to the applicant with stamped acknowledgement of receipt thereon, or other appropriate documentation of certification. The stamped copy of the application or other documentation of certification shall be kept with the cargo tank at all times.

2.4 Fee

The Executive Officer shall charge a fee not to exceed the actual cost of certification to cover the cost of certifying cargo tanks. Payment of the fee is a condition of certification.

3. PERFORMANCE STANDARDS AND TEST PROCEDURES

3.1 Five Minute Performance Standard - Annual

All cargo tanks owner or operators shall conduct testing annually in accordance with TP-204.1, Determination of Five Minute Static Pressure Performance of Vapor Recovery Systems of Cargo Tanks, to verify compliance with performance standards referenced in this section. The results shall be submitted annually to the Executive Officer as provided by section 2.

3.1.1 Cargo Tanks or Compartment

The Five Minute performance standard listed in Table 3-1 shall be determined by TP-204.1, Determination of Five Minute Static Pressure Performance of Vapor Recovery Systems of Cargo Tanks.

Table 3-1
Pressure or Vacuum Change per Cargo Tank
or Compartment Tested

Allowed Pressure Change (inches WC)	Cargo Tank or Compartment Capacity (gallons)
0.50	2500 or more
0.75	2499 to 1500
1.00	1499 to 1000
1.25	999 or less

Table 3-2
Internal Vapor Valve Pressure Change
Per Cargo Tank or Compartment Tested

Allowed Pressure Change In 5 Minutes (inches WC)	Cargo Tank Or Compartment Capacity (gallons)
5.0	All

3.1.2 Internal Vapor Valve

Every cargo tank shall have an internal vapor valve. A check valve or cap is not an acceptable alternative. The internal vapor valve shall comply with the performance standard listed in Table 3-2 when tested in accordance with TP-204.1.

3.2 Daily Static Pressure Performance Standard

The Executive Officer shall conduct testing of cargo tanks in accordance with TP-204.2, Determination of One Minute Static Pressure Performance of Vapor Recovery Systems of Cargo Tanks, to determine compliance with applicable performance standards referenced in section 3.2.

3.2.1 The Daily Static Pressure Performance Standard, or one minute standard, is dependent on the headspace volume after loading and can vary from one load to the next. The one minute standard shall be determined by TP-204.2. All cargo tanks and compartment, including the internal vapor valve(s), shall be capable of meeting the one minute standard of Equation 3.2.

Equation 3.2

$$P_F = 18\left(\frac{N}{18}\right)^{\left(\frac{V_s}{5\,V_h}\right)}$$

where:

P_F	minimum allowable one-minute final pressure, inches water column
V_s	total cargo tank shell capacity, gallons
V_h	cargo tank headspace volume after loading, gallons
18	initial pressures at start of test, inches water column
N	see Table 3.2.1

Table 3.2.1

If V_s is	Then N is equal to
greater than or equal to 2,500 gallons	15.5 inches WC
between 1,500 and 2499 gallons	15.0 inches WC
between 1,000 and 1,499 gallons	14.5 inches WC
between 0 and 999 gallons	14.0 inches WC

3.2.2 Internal Vapor Valve Performance Standard

All cargo tank internal vapor vent valve(s) shall comply with the performance standard listed in Table 3.2.2 as determined by TP-204.2.

Table 3.2.2
Internal Vapor Valve Performance Standard

Test Time (minutes)	Maximum Allowable One-Minute Pressure Increase (inches WC)
1.0	1.1
2.0	2.2
3.0	3.3
4.0	4.4
5.0	5.5

The values in the right hand column are adjusted upward to account for a systematic bias caused by expansion in the headspace of the cargo tank subsequent to thermal conduction from the shell. The value of 5.5 at the bottom of the column corresponds equivalently to the 5.0 inches WC pressure increase allowed by the five minute performance standard.

Important: If individual compartments are to be tested, both V_s and V_h must be the volumes relating to that compartment alone, not all compartments.

3.3 Vapor and Liquid Leaks

The Executive Officer shall conduct testing of cargo tanks during the loading or after loading of gasoline to determine compliance with the vapor and liquid leak standards of this section in accordance with TP-204.3, Determination of Leak(s).

3.3.1 Vapor Leaks

A vapor leak is defined to be any source of gasoline vapors which causes a combustible gas detector meter reading exceeding 100 percent of the LEL as determined by TP-204.3, Determination of Leak(s).

3.3.2 Liquid Leaks

A liquid leak is defined to be liquid gasoline dripping at a rate in excess of three (3) drops per minute as determined by TP-204.3.

4. REQUIREMENTS FOR DETERMINATIONS OF COMPLIANCE AND VIOLATION

The specifications of this section are primarily adopted pursuant to Health and Safety Code sections (H&SC §§ 41962 and 41974). In particular, H&SC § 41974 provides that the penalty provisions of Article 3 (commencing with Section 42400) of Chapter 4, Division 26 of the H&SC shall apply to gasoline cargo tank vapor recovery system violations.

4.1 General Requirements

It is a general requirement that any certified vapor recovery system shall comply with the specifications of certification which result from the application of this procedure to such vapor recovery system. Failure of such vapor

recovery system to comply is a violation of such vapor recovery system's specifications of certification.

4.2 Specific Requirements

It shall be a specification of certification that each cargo tank shall comply with the compliance requirements listed below; failure of a cargo tank to comply with these requirements shall be a violation of that cargo tank's specification of certification.

4.2.1 Yearly Requirements

a. On an annual basis, each cargo tank shall prepare for pressure testing to determine if that cargo tank complies with the five minute performance standard as determined by TP-204.1.
b. Any such cargo tank which fails to demonstrate such compliance with five minute performance standard, daily static pressure performance standard, or vapor leak standard or liquid leak standard shall be subject to a penalty set by the Executive Officer. (See H&SC § 41974)
c. Any such cargo tank which fails to demonstrate compliance shall be taken out of service until such cargo tank is repaired, tested, and determined to comply.

4.2.2 Daily Requirements

a. On a permanent basis, any cargo tank shall be subject to daily static pressure performance standard testing.

Any such cargo tank which fails to demonstrate such compliance shall prepare for pressure testing pending one of the following outcomes:

(1) If no maintenance has been performed on such cargo tank while preparing for testing, such cargo tank may be tested to determine if such cargo tank complies with a static pressure performance standard according to the appropriate test procedure.

i. If such cargo tank complies, such cargo tank may be placed back in service with no penalty.

ii. If such cargo tank does not comply, such cargo tank shall be subject to a penalty set by the Executive Officer (see H&SC § 41974) and shall remain out of

service until such cargo tank is repaired, tested, and determined to comply with the annual Five Minute Performance Standard as determined by TP-204.1.

(2) If maintenance has been performed on such cargo tank while preparing for testing, such cargo tank shall be permanently removed from service (salvaged) or shall be tested to determine if such cargo tank complies with the yearly standard according to the appropriate test procedure.

i. If such cargo tank complies, such cargo tank may be placed back in service and shall be subject to a penalty set by the Executive Officer. (See H&SC § 41974)

ii. If such cargo tank does not comply, the owner or operator of the cargo tank shall be subject to a penalty set by the Executive Officer (see H&SC § 41974) and shall remain out of service until such cargo tank is repaired, tested, and determined to comply with the yearly standard according to the appropriate test procedure.

(3) If the cargo tank is taken out of service permanently, such cargo tank shall be subject to a penalty set by the Executive Officer. (See H&SC § 41974)

4.3 Other Requirements

On a permanent basis, any cargo tank shall be subject to annual and daily static pressure performance testing to determine if any such cargo tank complies with the applicable annual and daily static pressure performance standards.

4.3.1 Any such cargo tank which fails to demonstrate such compliance shall be subject to a penalty set by the Executive Officer (see H&SC 41974) and shall be taken out of service.

4.3.2 Such cargo tank may be repaired and re-tested to determine if such cargo tank complies with the annual certification standard according to the appropriate test procedure.

a. If such cargo tank complies, the cargo tank may be placed back in service.
b. If such cargo tank does not comply, the cargo tank shall remain out of service until the cargo tank is repaired, tested, and

determined to comply with the annual performance standard listed in section 3.1 of this procedure.

5. ALTERNATE TEST PROCEDURES

Test procedures other than those specified in this certification procedure shall be used only if prior written approval is obtained from the Executive Officer. A test procedure is a methodology used to determine, with a high degree of accuracy, precision, and reproducibility, the value of a specified parameter. Once the test procedure is conducted, the results are compared to the applicable performance standard to determine the compliance status of the facility.

5.1 Alternate Test Procedures for Certification Testing

The Executive Officer shall approve, as required, those procedures necessary to verify the proper performance of the system.

5.2 Request for Approval of Alternate Test Procedure

Any person may request approval of an alternative test procedure. The request shall include the proposed test procedure, including equipment specifications and, if appropriate, all necessary equipment for conducting the test. If training is required to properly conduct the test, the proposed training program shall be included.

5.3 Response to Request

The Executive Officer shall respond within fifteen (15) days of receipt of a request for approval and indicating that a formal response will be sent within sixty (60) days. If the Executive Officer determines that an adequate evaluation cannot be completed within the allotted time, the Executive Officer shall explain the reason for the delay, and will include the increments of progress such as test protocol review and comment, testing, data review, and final determination. If the request is determined to be incomplete or unacceptable, the Executive Officer shall respond with identification of any deficiencies. The Executive Officer shall issue a determination regarding the alternate procedure within sixty (60) days of receipt of an acceptable request.

5.4 Testing of Alternate Test Procedures

All testing to determine the acceptability of the alternate procedure shall be conducted by the Executive Officer or by a third party responsible to and under the direction and control of Executive Officer. Testing shall be conducted in accordance with the written procedures and instructions provided by the Executive Officer. The testing shall, at a minimum, consist of nine sets of data pairs, pursuant to U.S. Environmental Protection Agency (EPA) Reference Method 301, “Field Validation of Pollutant Measurement Methods from Various Waste Media”, 40 CFR Part 63, Appendix A, 57

Federal Register page 61992. Criteria established in U.S. EPA Reference Method 301 shall be used to determine whether equivalency between the two test methods exists. For situations where Method 301 is not directly applicable, the Executive Officer shall establish equivalence based on the concepts of comparison with the established method and statistical analysis of bias and variance. Method approval of the procedure shall be granted, on a case-by-case basis, only after all necessary testing has been conducted. Because of the evolving nature of technology and procedures for vapor recovery systems, such approval may or may not be granted in subsequent cases without a new request for approval and additional testing to determine equivalency. If, after approval is granted, subsequent information demonstrates that equivalency between the two methods no longer meets the U.S. EPA Reference Method 301 requirements or the equivalent method established by the Executive Officer, the alternate status of the procedure shall be revoked by the Executive Officer.

5.5 Documentation of Alternate Test Procedures

Any such approvals for alternate test procedures and the evaluation testing results shall be maintained in the Executive Officer's files and shall be made available upon request. Any time an alternate procedure and the reference procedure are both conducted and yield different results, the results determined by the reference procedure shall be considered the true and correct results.