

California Environmental Protection Agency



Vapor Recovery Certification Procedure

CP-205

Certification Procedure for
Vapor Recovery Systems of
Novel Facilities

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**CP-205
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California Environmental Protection Agency
Air Resources Board

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Certification Procedure for Vapor Recovery Systems of
Novel Facilities

Warning: This procedure shall only be applied with the approval of the ARB Executive Officer. Other certification procedures and specified test procedures shall not be superseded by this procedure for novel facilities, except when the ARB Executive Officer determines that other certification procedures and specified test procedures are inapplicable.

As a modifier, "novel" indicates a vapor recovery system (or system feature) or facility to which the written procedures (of general applicability) do not apply; for such a novel system or facility, new system-specific and/or facility-specific performance specifications and test procedures shall be developed and required as conditions of certification.

In no case shall an individual component be certified except as an integrated part of a complete system. Also, in no case shall an individual component be certified by this procedure unless such component was previously certified as an integrated part of a complete system per CP-201, CP-202, CP-203, or CP-204.

The process of application for and certification of novel developments of systems or facilities not covered by the other procedures can be accommodated by CP-205; unless, in the ARB Executive Officer's judgment, it is necessary to develop a new set of procedures of general applicability for adoption through the public hearing process.

1 GENERAL INFORMATION AND APPLICABILITY

This document describes a procedure for certifying equipment which recovers vapors emitted in association with gasoline marketing operations involving a novel facility.

For aspects of novel facilities or systems to which CP-201 through 204 do not apply, CP-205 provides instructions for determining performance standards, performance specifications, and test procedures for equipment which recovers vapors emitted in association with gasoline marketing operations; however, for aspects of novel facilities or systems to which CP-201 through 204 apply, the specifications of CP-201 through 204 shall not be superseded.

CP-205 meets the same need as CP-201, but provides for application to novel facilities to which CP-201 does not apply. The primary need served by CP-205 is for extension of the application of CP-201 to novel systems which may combine new types of equipment with existing systems (e.g. an aboveground storage tank at a dispensing facility) or which may combine existing types of systems (e.g. a cargo tank as a mobile dispensing facility).

A set of definitions common to all certification and test procedures is in:

**D-200 Definitions for
Certification Procedures and
Test Procedures for
Vapor Recovery Systems**

2 SUMMARY OF CERTIFICATION PROCESS

2.1 Summary of Requirements of Certification Procedure

This certification procedure has five interacting components which may be applied iteratively in complex cases. For example, review of evaluation and testing may yield additional specifications. The five components are:

2.1.1 Application for Certification (See § 3.)

The applicant must submit all required application information. The ARB Executive Officer shall consult with the applicant, shall review the information, may require revisions or more information, and shall approve the application after it is determined to be complete.

2.1.2 Standards, Specifications, and Test Procedures (See § 4.)

The ARB Executive Officer shall specify performance standards, performance specifications, and test procedures for vapor recovery equipment in response to a completed application for certification.

2.1.3 Evaluation and Testing of Vapor Recovery Equipment (See § 5.)

The vapor recovery equipment shall be subjected to evaluation and testing according to the performance standards, performance specifications, and test procedures at the applicant's expense. The ARB Executive Officer shall conduct all evaluation and testing unless the ARB Executive Officer determines that the equipment owner or operator shall contract for or conduct specified evaluation and testing on a case-by-case basis.

2.1.4 Documentation for Certification (See § 6.)

A Certification Report shall be prepared, at the applicant's expense, documenting the preceding components:

- (1) Application for Certification;
- (2) Standards, Specifications, and Procedures; and
- (3) Evaluation and Testing of Vapor Recovery Equipment.

The ARB Executive Officer shall consult with the applicant, shall review the report, may require additional work on the components, and shall approve and sign the Certification Report after it is determined that:

- (1) The Certification Report is complete; and
- (2) The Certification Report documents successful performance of the subject vapor recovery equipment according to the required performance standards, performance specifications, and test procedures.

2.1.5 Certification (See § 7.)

Evidence of certification shall be an ARB Executive Order (which shall reference the Certification Report) signed by the ARB Executive Officer.

2.2 Summary of Time Periods for Review and Processing

The following definitions of ARB Executive Officer Actions and Time Periods shall apply to all applications subject to this procedure per CCR, Title 17, § 60030:

"ARB Executive Officer Interim Action #1"

means that the ARB Executive Officer determines that application is deficient per § 3, § 4, § 5, or § 6 and communicates specific deficiencies to the Applicant in writing.

"ARB Executive Officer Interim Action #2"

means that the ARB Executive Officer determines that application is complete per § 3, § 4, § 5, and § 6 and accepted for filing and communicates such determination to Applicant in writing.

"ARB Executive Officer Final Action"

means that the ARB Executive Officer acts to disapprove or approve the application per § 3, § 4, § 5, § 6, and § 7 and communicates such determination to the Applicant in writing.

"Time Periods"

are defined in the table below:

| FROM: ACTION BELOW | TIME PERIOD | TO: ACTION BELOW |
|-----------------------------------------------------------|------------------------|-----------------------------------------------|
| Applicant files an initial application for certification. | within 30 days | ARB Executive Officer Interim Action #1 or #2 |
| Applicant files an amended application for certification. | within 15 days | ARB Executive Officer Interim Action #1 or #2 |
| ARB Executive Officer Interim Action #2 | within 90 days | ARB Executive Officer Final Action |

The time periods specified above may be extended by the ARB Executive Officer for good cause per CCR, Title 17, § 60030 (d).

3 APPLICATION FOR CERTIFICATION

3.1 General

Each application shall be evaluated by the ARB Executive Officer to determine which of the requirements of CP-201 §3, CP-202 §3, CP-203 §3, and CP-204 §3 shall apply. The certification process shall proceed according to such applicable requirements specified in the previous certifications for each component of a novel facility system.

The components used on the novel system must meet the same performance standards and specifications which were met during the previous certification under CP-201, CP-202, CP-203, or CP-204. Any exemptions to this requirement must be specifically requested by the applicant before testing begins and must be subject to an engineering evaluation and approval by the ARB Executive Officer before testing begins.

3.2 Application for a System Previously Tested, But Not Certified

If the application is for a system previously tested, but not certified, the application shall include identification of the system components which have been changed;

including all new physical and operational characteristics; together with any new test results obtained by the applicant.

If an unmodified system is retested, then the data from the new test and all valid data from previous tests shall be combined to determine compliance with the certification standards.

3.3 Modifications or Adjustments to a System with a Test in Progress

It is sometimes necessary to conduct more than one continuous performance test to determine that the system, with modifications to solve contingent problems, performs adequately in a continuous performance test. A new test shall be required for any modifications or adjustments to a system and shall be initiated only after investigation of the cause of such problems and the implementation of attempted solutions, all of which shall be considered as R&D, shakedown, or tuning activity and not part of a continuous performance test.

3.4 Limited Bases for Excluding a Fueling Episode from an Efficiency Calculation

The bases for excluding a fueling episode from an efficiency calculation are those bases listed in Section 3.1.2 of TP-201.2.

4 PERFORMANCE STANDARDS, PERFORMANCE SPECIFICATIONS, AND TEST PROCEDURES

Warning: The installation, operation, maintenance, and inspection of a vapor recovery system must be compatible with:

- (1) the application of specified performance standards, performance specifications, and test procedures and
- (2) the installation, operation, maintenance, and inspection of any other equipment associated with such system.

Each application shall be evaluated by the ARB Executive Officer to determine which of the requirements of CP-201 §4, CP-202 §4, CP-203 §4, and CP-204 §4 shall apply. The certification process shall proceed according to such applicable requirements and according to any applicable requirements specified in the previous certifications for each component of a novel facility system.

Additionally, the following specific requirements shall apply.

4.1 Performance Standard

A vapor recovery system shall achieve a minimum vapor recovery efficiency of ninety percent (90%) by weight to obtain certification by this procedure.

In the application, the applicant shall specify whether the system is to be certified at 90% or 95% efficiency.

Compliance with the performance standard specified in the application shall be determined separately for Phase I and Phase II operation of the system.

4.2 Performance Specifications

For novel systems, on a case-by-case basis, additional performance standard(s) shall be required based on evaluation by the ARB Executive Officer. For example, novel vapor recovery systems for above-ground tanks or mobile dispensing facilities shall be evaluated to determine additional performance standard(s), as necessary; and any vapor recovery system shall comply with vapor space volume limits established during the application of the required test procedures.

Venting shall only be allowed during testing if all emissions of hydrocarbons from absolutely every vent source can be reliably quantified and included in emissions calculations; otherwise the system shall not cause out-breathing to occur from system pressure-vacuum relief valves including valves on any fixed roof tanks, during normal operations of the vapor recovery system. This shall be determined as described in TP 205.1.

4.3 Test Procedures

4.3.1 Required Test Procedures

The Phase I and Phase II vapor recovery system efficiency shall be determined using:

- | | |
|-----------------|------------------------------------------------------------------------------------|
| TP-205.1 | Determination of Efficiency of Phase I Vapor Recovery Systems of Novel Facilities |
| TP-205.2 | Determination of Efficiency of Phase II Vapor Recovery Systems of Novel Facilities |

4.4 Performance Standards and Performance Specifications for Novel Systems

For novel systems, on a case-by-case basis, additional performance standards and performance specifications shall be required based on evaluation by the ARB Executive Officer and a determination of necessity.

4.5 Test Procedures for Novel Systems

Novel test procedures shall be required for novel systems based on evaluation by the ARB Executive Officer and a determination of necessity.

4.5.1 Technical Identification of Need

The equipment related to any application for certification shall be subject to an engineering evaluation.

The engineering evaluation may result in a technical identification of need for development of special test procedures for novel systems, components, or applications.

4.5.2 Administrative Requirement for Development

Following any such technical identification of need, the applicant shall be responsible for developing test procedures for the applicant's equipment to demonstrate that such equipment can meet any applicable performance standards or specifications.

4.5.3 Evaluation and Approval

Any test procedures identified and developed by the applicant shall be subject to an engineering evaluation which must result in approval by the ARB Executive Officer to meet the requirements of this section.

5 EVALUATION AND TESTING OF VAPOR RECOVERY EQUIPMENT

Each application shall be evaluated by the ARB Executive Officer to determine which of the requirements of CP-201 §4, CP-202 §4, CP-203 §4, and CP-204 §4 shall apply. The certification process shall proceed according to such applicable requirements and according to any applicable requirements specified in the previous certifications for each component of a novel facility system.

5.1 General Evaluation and Testing

Vapor recovery systems shall be subjected to evaluation and testing according to the specified performance standards, performance specifications, and test procedures at the applicant's expense.

Note: To avoid the certification of a performance standard or performance specification which can not reasonably be met by all anticipated installations of a certified system, the applicant may specify (a) challenge mode(s) for system testing, subject to approval by the ARB Executive Officer. The ARB Executive Officer shall evaluate each system to determine the need for failure mode testing; and if such need is positively determined the ARB Executive Officer shall specify (a) failure mode(s) for system testing.

"Challenge mode testing" is testing conducted with a system installation intentionally modified so that the performance standard is more difficult to meet. The purpose of challenge mode testing is to provide a basis for determining performance specifications which reasonably can be met by all anticipated installations of a certified system.

"Failure mode testing" is testing conducted with a system installation intentionally modified so that it fails to meet its performance standard. The purpose of failure mode testing is to provide a basis for determining performance specifications which, when met, provide reasonable assurance that an installation of the system is not in the related failure mode.

- (1) The ARB Executive Officer shall conduct all evaluation and testing unless the ARB Executive Officer determines that the equipment owner or operator shall contract for or conduct specified evaluation and testing on a case-by-case basis.
- (2) All test personnel, regardless of their primary employer, shall be responsible solely to the ARB Executive Officer for the conduct of all testing activities required by this certification procedure. Such testing activities include, but are not limited to:
 - (a) collection of data
 - (b) calculation of results
 - (c) reporting of results
- (3) The ARB Executive Officer shall be present to monitor all testing and clarify the application of the procedures in novel circumstances; test data, calculations, and reported results shall be subsequently reviewed and evaluated by the ARB Executive Officer to determine their validity for inclusion in the Certification Report.

5.2 Alternative Evaluation and Testing

Certification procedures, other than specified above, shall only be used if prior written approval is obtained from the ARB Executive Officer. In order to secure the ARB Executive Officer's approval of an alternative certification procedure, the applicant is responsible for demonstrating to the ARB Executive Officer's satisfaction that the alternative certification procedure is equivalent to this certification procedure.

- (1) Such approval shall be granted on a case-by-case basis only. Because of the evolving nature of technology and procedures for vapor recovery systems, such approval shall not be granted in subsequent cases without a new request for approval and a new demonstration of equivalency.
- (2) Documentation of any such approvals, demonstrations, and approvals shall be maintained in the ARB Executive Officer's files and shall be made available upon request.

5.3 Preliminary Evaluation

A preliminary engineering evaluation shall be performed on each subject vapor recovery system to determine the conditions under which field testing, bench testing, and further engineering evaluation shall be performed.

Field testing, bench testing and engineering evaluation of subject vapor recovery systems and components shall be conducted in a manner, determined by the ARB Executive Officer, which shows consideration of the difficulties of actual in-use circumstances in which the systems and components are expected to be employed:

- (1) The ARB Executive Officer shall determine any challenge and failure modes necessary to reflect the matrix of actual in-use circumstances expected for all installations of such systems. If such modes are determined, they shall be specified in writing to the applicant.
- (2) Field testing, bench testing and engineering evaluation shall include any challenge and failure modes for such systems as determined in (1) to provide for performance standards and performance specifications which can be met by the actual use of all installations of such systems.

5.4 Field Testing

The ARB Executive Officer shall require field testing for any performance standard or performance specification if, after its evaluation, field testing is the only acceptable alternative.

5.5 Bench Testing

The ARB Executive Officer shall require bench testing for any performance standard or performance specification if, after its evaluation, bench testing is necessary and a non-testing evaluation alternative is inadequate.

5.6 Evaluation

The ARB Executive Officer shall evaluate the results of testing for any performance standard or performance specification.

The ARB Executive Officer shall conduct a non-testing evaluation, after determining that testing is unnecessary, for any performance standard or performance specification.

6 DOCUMENTATION FOR CERTIFICATION

A Certification Report shall be prepared, at the applicant's expense, documenting the preceding components:

- (1) Application for Certification
- (2) Standards, Specifications, and Test Procedures
- (3) Evaluation and Testing of the Vapor Recovery System

Note: In addition to other required results, vapor recovery system test results shall be reported in units of pounds of hydrocarbon emitted per thousand gallons of fuel transferred for any results which are expressible in such units.

The ARB Executive Officer shall consult with the applicant, shall review the report, may require revisions or more work on the components, and shall approve and sign the Certification Report after it is determined that:

- (1) The Certification Report is complete.
- (2) The Certification Report documents successful performance of the subject vapor recovery system according to the performance standards, performance specifications, and test procedures.

7 CERTIFICATION

The ARB Executive Officer shall not certify any system until after the system's Certification Report is approved and signed.

Evidence of certification shall be an ARB Executive Order (which shall reference the Certification Report) signed by the ARB Executive Officer.

After approval and signature of the ARB Executive Order, Certification Reports shall be maintained in the ARB Executive Officer's files and shall be made available upon request.