

State of California
California Environmental Protection Agency
AIR RESOURCES BOARD

Final Statement of Reasons for Rulemaking,
Including Summary of Comments and Agency Response

PUBLIC HEARING TO CONSIDER THE ADOPTION, AMENDMENT, AND REPEAL OF
REGULATIONS REGARDING CERTIFICATION PROCEDURES AND TEST PROCEDURES
FOR GASOLINE VAPOR RECOVERY SYSTEMS

1995

Public Hearing Date: June 29,

Agenda Item No.: 95-6-2

I. INTRODUCTION

On June 29, 1995, the Air Resources Board (the "Board") conducted a public hearing to consider the adoption, amendment, and repeal of regulations regarding certification procedures and test procedures for gasoline vapor recovery systems.

At the public hearing, the Board adopted Resolution 95-27, approving adoption, amendment, and repeal of regulations. The adoptions, amendments, and repeals affect Title 17 California Code of Regulations (CCR) 94000-94004, 94007, 94010-94105, and 94148-94160.

After due consideration of formal comments received during the 45-day public comment period, the Board directed the staff to modify the regulations and provide a further 15-day public comment period. The modified regulations were made available to the public for a 15-day comment period between September 11, 1995 and September 26, 1995 pursuant to Government Code Section 11346.8(c). The "Notice of Public Availability of Modified Text" together with a copy of the partial text of the regulations, clearly indicating the changes, was mailed on September 11, 1995.

A Staff Report was prepared which constitutes the Initial Statement of Reasons for the proposed rulemaking. This Staff Report was released on May 12, 1995 and is incorporated by reference herein. This Final Statement of Reasons updates the Staff Report, by explaining the rationale for modifying the proposed text. This Final Statement of Reasons also contains a summary of comments received during the formal rulemaking process and the ARB's responses to the comments. Based upon the comments received during the 15-day comment period, the staff made additional minor modifications to the proposed regulations. Also, staff took the opportunity to make non-substantive clarifying revisions after proofreading the regulations.

One comment prompted the staff to make substantive revisions to the performance specifications for pressure in vapor return valves at dispensing facilities. Although this comment was received after the first 15-day comment period, it corrected a technical error missed during proofreading. These revisions were made available to the public for a second 15-day comment period between February 26, 1996 and March 12, 1996 pursuant to Government Code Section 11346.8(c). The "Notice of Public Availability of Modified Text" together with a copy of the partial text of the regulations, clearly indicating the changes, was mailed on February 26, 1996. No comments were received in response to the second 15-day notice, so Section III. contains discussion of comments and responses related to only the first 15-day notice.

The referenced documents have been available from the ARB upon request pursuant to Title 13 CCR Section 1902 and were made available in the context of the subject rulemaking in the manner required by Government Code Section 11346.7 (a).

The Board has determined that this regulatory action does not impose a mandate on local agencies or school districts.

The Board has further determined, for the reasons set forth in the Initial Statement of Reasons, that no alternatives considered by the agency would be more effective in carrying out the purpose for which the regulatory action was proposed or would be as effective and less burdensome to affected private persons, than the action taken by the Board.

II. GENERAL RATIONALE FOR THE REGULATION

The Staff Report sets forth the rationale for the proposed regulation. This section of the Final Statement of Reasons briefly summarizes the general rationale.

To achieve and maintain applicable ambient air quality standards, Health and Safety Code (H&SC) Section 41954 requires the Board to adopt procedures for certifying systems designed to control gasoline vapor emissions during gasoline marketing operations, including storage and transfer operations. Section 41954 further requires that only systems certified by the Board can be offered for sale, sold, or installed in California.

State law gives districts the primary responsibility for controlling air pollution from non-vehicular sources such as gasoline marketing, storage, and transfer operations. With the exception of cargo tanks, districts are authorized by H&SC Section 41954(g) to adopt procedures and performance standards more stringent than those adopted by the Board; such district authority does not apply to certification of systems, rather it applies to

compliance of installed systems with district regulations. H&SC Section 39607(d) requires the Board to adopt test procedures to determine compliance with its non-vehicular emission standards and those of the districts.

Since 1975, the Board, pursuant to H&SC Sections 39607(d) and 41954, has adopted four certification procedures and two test procedures (Sections 94000- 94004 and 94007, Title 17, CCR). These procedures describe the criteria for certifying gasoline vapor recovery systems for service stations, bulk plants, terminals, and cargo tanks. The certification process consists of four basic steps: application, engineering evaluation, testing, and certification. The vapor recovery equipment manufacturer or facility operator (applicant) submits an application to the ARB describing the system and providing information to show that the performance standards can be achieved. The review by the ARB's staff consists of determining if the application is complete and identifying appropriate performance standards, appropriate performance specifications, and appropriate test procedures. Minimum performance standards (e.g., 90% control efficiency or 0.9 pounds per 1000 gallon of gasoline dispensed) are established by each certification procedure. Testing is performed by the ARB's staff to verify that the proposed system can meet the applicable performance standards. During the test, performance specifications are established for systems that comply with the performance standards. Performance specifications are used by the district and the ARB staffs to verify that the installed systems are operating properly. If the test results show that the system complies with the performance standards, the ARB's Executive Officer certifies the system by issuing an Executive Order along with appropriate conditions and performance specifications.

Due to the large number of service stations, only prototype vapor recovery systems for service stations are certified. Performance specifications established during testing provide the link to verify that the installed system is operating properly. Actual vapor recovery systems for bulk plants, terminals, cargo tanks, and novel facilities are tested to ensure that the required performance standards are met.

III. SUMMARY OF COMMENTS AND AGENCY RESPONSES

During the 45 days prior to the public hearing on June 29, 1995, the Board received written comments from Gilbarco, Inc. (GI) and the Air Pollution Control District of the County of San Diego (SD).

At its June 29, 1995 meeting, the Board heard testimony from Don Gilson representing the Western States Petroleum Association (WSPA).

During the 15 day public comment period, the Board received written comments from OPW Fueling Components (OPWFC) and Hasstech, Inc. (HI).

In both the comments made at the Board hearing and in the written submissions received by the Board, GI, SD, and WSPA expressed support for, and criticism of, the staff's proposals. These comments were considered by the Board in its decision to provide a further 15-day public comment period.

Supporting comments are neither summarized nor responded to in this Final Statement of Reasons because they do not contain objections or recommendations specifically addressed to the proposed action.

Critical comments and suggestions for improvement which prompted the Board's decision to provide a further 15-day comment period are addressed below.

TABLE OF TOPICS ADDRESSED IN COMMENTS:

Staff responses to comments are organized into the following categories:

- A. Errata.
- B. Format of Procedures.
- C. Technical Issues*: TP-201.2.
- D. Technical Issues: TP-201.3.
- E. Technical Issues: TP-201.5.
- F. 15-Day Comments.

* Commenters' technical recommendations on TP-201.2, TP-201.3, and TP-201.5 prompted a full engineering evaluation of the all procedures by staff resulting in related minor technical improvements which appear in the attached 15-day changes.

A. ERRATA

1. Comment: GI recommended some editorial changes after a thorough proofreading of the Phase II procedures. For example: GI recommended that in TP-201.2, p. 9, sec. 5.7.4.3, the passage "... transducer with an initial design range of 0-1.00"WC in a manometer or Magnahelic gauge ..." be changed to "... a transducer or gauge with an initial design range of 0-1.00"WC ..." because the former "is too specific and eliminates electronic pressure transducers." The passage now reads "Use a pressure measuring device (transducer, inclined manometer or Magnehelic gauge) with a design range suitable for the pressure being measured." (GI)

Agency Response: All of GI's clarifying recommendations have been incorporated in the attached 15-day changes.

B. FORMAT

2. Comment: GI recommended some changes in format based on GI's experience with field use of drafts of of the Phase II procedures; and GI emphasized the need for more illustrations and explanations. GI actually wrote: "The efficiency test, TP-201.2, while adequate for those with experience using it, remains hard to follow largely as a result of poor format, lack of illustrations and lack of explanation regarding measurement of vapor volumes at the fill pipe interface, vapor return and storage tank vent.

A substantial amount of text and illustrations relate to determination of HC concentrations and we think this should be complimented by an equal amount of emphasis on volume measurement. The format should then clearly delineate each aspect of the efficiency test." (GI)

Agency Response: All of GI's formatting recommendations have been incorporated in the attached 15-day changes. Additionally, staff has provided similar formatting changes throughout the procedures; staff took care to separate explanatory material from instructions for required procedures by formatting explanatory material in note boxes.

C. TECHNICAL ISSUES: TP-201.2

3. Comment: GI recommended for TP-201.2, p. 3, sec. 3.1.2 that vehicles with an unrepresentative number of premature shutoffs or multiple topping off attempts be excluded from the "100 car" matrix of test vehicles. (GI)

Agency Response: This recommendation was not followed because the required application of TP-201.2A, which provides a representative vehicle matrix for testing by TP-201.2, would be more prone to a low emissions bias if such vehicles were removed.

4. Comment: GI said that the vehicle leak check does not have to occur at "Test Point 1" (Nozzle Sleeve) and recommended providing instructions in a "Pre-Test" section. (GI)

Agency Response: The Pre-Test section provides procedures which must be performed to prepare a facility for testing. In contrast, the vehicle leak check is required immediately before each of the over 100 required nozzle sleeve measurements; the check and the test both must be performed at Test Point 1. It would be more confusing to describe the vehicle leak check in the Pre-Test section.

5. Comment: GI said that the idle nozzle test seems redundant and asked if fuel evaporating to vapor were not part of the fugitive emissions research which ARB is contracting through its Research Division. (GI)

Agency Response: Idle nozzle emissions are not redundantly measured by any other part of the procedures. Technically, idle nozzle emissions are not the subject of fugitive emissions research: Phase II fugitive emissions are characterized as being caused by positive gauge pressure and inadequate pressure integrity; in contrast, idle nozzle emissions do not pass through a pressure drop - they occur by evaporation at atmospheric pressure.

6. Comment: SD said that in the late 1970s the ARB determined that the "boot" (nozzle sleeve) test method was inappropriate for balance-type vapor recovery systems because it interfered with the normal way customers handle the vapor recovery nozzle. (SD)

Agency Response: The choice of the regression test rather than the nozzle sleeve test was not for the reason given; among the reasons that the regression test was chosen is that it requires less test equipment in practice and the program needed to commence with the fewest complications. The application of any test method influences uncontrollable changes in the customer's fueling behavior. This was true in the 1970s as it is now for both the nozzle sleeve test (not chosen) and the regression test (chosen); both tests were developed and were available in the 1970s. The current choice of the nozzle sleeve test is mandated by the practical impossibility of any valid application of the regression test to the currently popular vacuum-assisted "bootless" nozzle. In addition, the sleeve test has the distinct advantage of directly measuring emissions, whereas for the regression test, emissions are modeled statistically.

7. Comment: SD said that actual system efficiencies depend upon variables whose influence is not adequately understood. (SD)

Agency Response: This issue, and many others, will be addressed by research which ARB is contracting through its Research Division. Such research will include recommendations regarding further improvements in the procedures.

D. TECHNICAL ISSUES: TP-201.3

8. Comment: SD said that the pressure decay test is impractical and prone to uncontrollable biases. (SD)

Agency Response: Many of the sections of TP-201.3 provide procedures field-tested for practicality and reduction of biases. TP-201.3 is the result of years of field research by engineers experienced in techniques for developing test procedures which are as practical and unbiased as allowed by the state-of-the-art. Such procedures can be improved, particularly by the level of effort proposed in the ARB sponsored research effort, described in 8. above. In the interim, TP-201.3 is technically appropriate and acceptable, representing the best current choice of procedures by the engineering judgment of staff. As warranted by further research, staff will recommend improvements in these and other procedures.

E. TECHNICAL ISSUES: TP-201.5

9. Comment: GI said that sealing all nozzles other than the test nozzle could mask or hide leaking vapor return valves and thus affect the A/L reading. (GI)

Agency Response: This is why all nozzles other than the test nozzle are sealed; otherwise there would be no way of testing the performance of the test nozzle without interferences from malfunctioning nozzles, which would bias the results for the tested nozzle.

10. Comment: SD said that the air to liquid (A/L) ratio test is labor intensive, expensive, and time consuming. (SD)

Agency Response: TP-201.5 is the result of years of field research by engineers experienced in techniques for developing test procedures which provide the best combination of high data quality and low resource intensity as allowed by the state-of-the-art. The test procedure is crucial to establishing a performance specification for the vapor collection system; without the procedure we would not be able to test whether or not a subsequent installation of a certified system was performing properly. Such procedures can be improved, particularly by the level of effort proposed in the ARB sponsored research effort, described in 8. above. In the interim, TP-201.5 is technically appropriate and acceptable, representing the best current choice of procedures by the engineering judgment of staff.

F. 15-DAY COMMENTS

11. Comment: OPWFC observed that it is an entire system which fails TP-201.5 testing and not just the nozzle.

Agency Response: TP-201.5 has been revised to reflect OPWFC's useful analysis.

12. Comment: OPWFC suggested that the figures for nozzle sampling sleeves in TP-201.2 be revised to illustrate various alternatives used in the field. For example: "... update Figure 6, Figure 7, Figure 8, and Figure 10 [15 Day Changes to TP-201.2, pages 46-48 and 50] to the current acceptable sleeve configuration that has been used for numerous efficiency tests rather than show an obsolete design."

Agency Response: The figures are for example only. Any configuration which complies with the performance specifications is acceptable. The number of alternatives in use is too great to illustrate practically.

13. Comment: OPWFC suggested that the Figures 1 through 3 [15 Day Changes to TP-201.3, pages 19-21] for pressure testing locations in TP-201.3 might be removed to emphasize testing without removing any pressure/vacuum valves.

Agency Response: The figures illustrate testing options by showing three different points of introduction of pressurizing nitrogen gas. None of the figures involve the removal of pressure/vacuum valves except for Figures 6 and 7, which are provided for testing balance systems. The figures will be retained; as vacuum assist-type systems are currently subject to these tests, staff expects that it is only a matter of time before requests for such testing of balance systems will be received. In fact, pending research requires such tests.

14. Comment: HI drew staff's attention to an error in citing pressure and flow specifications in CP-201.

Agency Response: The error has been corrected.

15. Comment: HI asked for specific mention in CP-201 of performance specifications which have been applied to HI's systems. The system-specific specifications in question were applied after staff performed an engineering evaluation of HI's systems per working drafts of CP-201 and the series of TP-201.X test procedures.

Agency Response: It is inappropriate to include specifications on a system-by-system basis in CP-201 or any of the other procedures. Staff has organized some sections of the procedures by broad system categories, such as balance versus assist systems. To subcategorize on a system-by-system basis would be unduly burdensome. The place for individual system-specific specifications is in the Executive Order which is specifically written for each individual system.

ADDENDUM TO FINAL STATEMENT OF REASONS

INCORPORATION OF CERTIFICATION AND TEST PROCEDURES the new test procedures are incorporated by reference in Title 17 CCR sections 94010, through 94015 and 94148 through 94160. These sections identify the incorporated documents by title and date. The documents are readily available from the Air Resources Board upon request and were made available during the subject rulemaking in the manner specified in Government Code section 11346.7 (a).

The Certification and Test Procedures are incorporated by reference because it would have been cumbersome, unduly expensive and impractical to publish the voluminous documents in the California Code of Regulations.