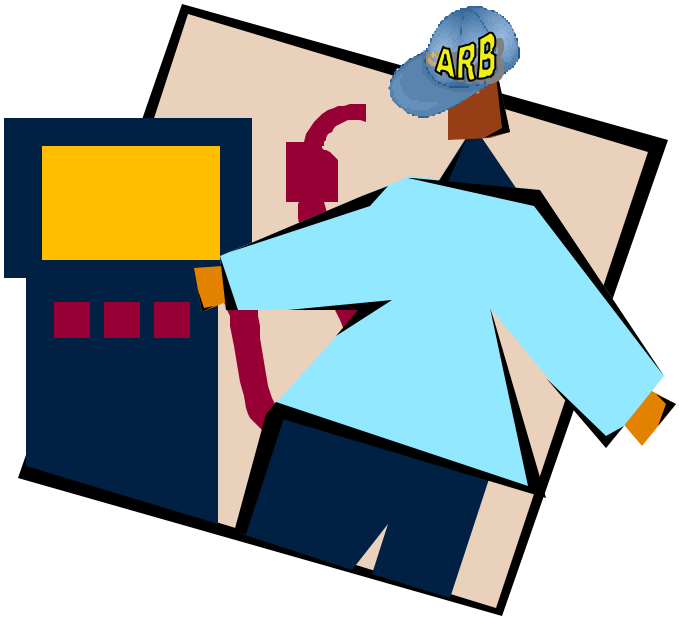
California Environmental Protection Agency

Air Resources Board

HEARING NOTICE AND STAFF REPORT

INITIAL STATEMENT OF REASONS FOR PROPOSED RULEMAKING, PUBLIC HEARING TO CONSIDER THE ENHANCED VAPOR RECOVERY TECHNOLOGY REVIEW AND PROPOSED AMENDMENTS OF VAPOR RECOVERY SYSTEM CERTIFICATION AND TEST PROCEDURES FOR GASOLINE MARKETING OPERATIONS AT SERVICE STATIONS



October 25, 2002

California Environmental Protection Agency

Air Resources Board

STAFF REPORT:
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American Petroleum Institute
California Air Pollution Control Districts
California Air Pollution Control Officers Association (CAPCOA) Vapor Recovery Committee
CAPCOA Enforcement Managers
California Independent Oil Marketers Association
Western States Petroleum Association

Staff also appreciates the input from the following vapor recovery equipment manufacturers:

Arid Technologies
EBW
Hirt
Husky
Gilbarco
OPW
Saber Technologies
Veeder-Root

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I. INTRODUCTION AND RECOMMENDATIONS

Introduction

In March of 2000, the Air Resources Board ("ARB" or "Board") approved the Enhanced Vapor Recovery (EVR) regulations. The regulations establish new standards for vapor recovery systems to reduce emissions during storage and transfer of gasoline at gasoline dispensing facilities (service stations).

Because several of the EVR standards were viewed to be technology-forcing, the Board directed staff to conduct a technology review for standards with future effective dates. As set forth in Board Resolution 00-9 (EVR Resolution), the technology review is intended to be comprehensive, thorough, rigorous, and include an evaluation of all practical alternatives to meet the requirements of EVR. The results of the technology review are presented in Appendix 4 of this report. Amendments to the vapor recovery regulations are proposed based on the findings of the EVR Technology Review report.

The EVR Resolution also directed that one or more workshops be held in conjunction with the technical review. Two public workshops were held, as well as several meetings with stakeholders before the draft report was issued on April 2, 2002. Two additional workshops were held on June 18, 2002 and September 9, 2002 to discuss comments received on the report and discuss proposed amendments to the regulations based on the report findings. The public outreach efforts are summarized in section IV of the ISOR/Staff Report.

The proposed vapor recovery amendments are discussed in section V. The economic and emission impacts are presented in section VII. Alternatives to these proposed amendments are considered in section VIII.

A detailed cost analysis was included in the February 4, 2000 EVR staff report. This analysis was updated as part of the technology review and additional adjustments have been made as described in section VII. Several input costs in the economic analysis increased based on more recent information, including equipment cost data from equipment manufacturers and installation costs from end users of vapor recovery equipment. Also, corrections were made to the original calculations for cost-effectiveness. The EVR program continues to remain cost-effective. The overall cost-effectiveness changed from $1.80/lb to $5.24/lb. As all EVR costs are assumed to be paid by the gasoline consumer, the expected increase in gasoline cost is 0.68 cents/gallon (up from the 0.24 cents/gallon in original staff report).

Recommendations

The ARB staff has found that all but one of the EVR standards is considered technologically feasible or is likely to be technologically feasible. The "dripless nozzle" standard that allows only one drop per refueling cannot yet be achieved based on

information from nozzle manufacturers. Staff recommends that the number of allowable drops be increased to an average of 3 drops per refueling.

The throughput exemption for in-station diagnostics (ISD) is proposed to be increased from 160,000 gallons per year (gal/yr) to 300,000 gal/yr. The exemption would apply to low-throughput facilities characterized as "GDF1", which have throughputs up to 25,000 gallons per month (gal/mo). The existing ISD exemption level of 160,000 gal/yr corresponds to the average throughput of the GDF1 range (13,233 gal/mo). The revised exemption would cover all stations in GDF1, as intended based on the original ISD cost-effectiveness calculated in March 2000.

Staff recommends other modifications to the vapor recovery certification and test procedures to improve clarity as discussed in detail in section V.

Staff recommends that the Board adopt the following:

1. Amendments to the California Code of Regulations to incorporate the proposed certification and test procedures by reference (Appendix 1)

2. Amendments to the incorporated vapor recovery system certification and test procedures (Appendix 2)

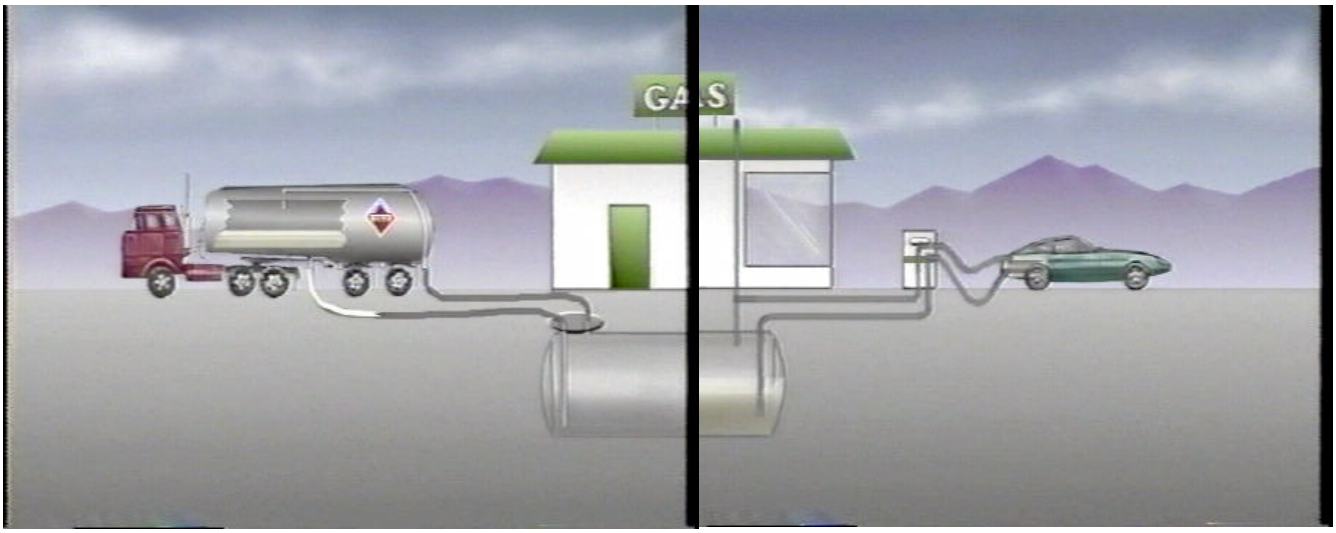
II. BACKGROUND

A. Vapor Recovery Program Overview

Gasoline vapor emissions are controlled during two types of gasoline transfer. Phase I vapor recovery collects vapors when a tanker truck fills the service station underground tank. Phase II vapor recovery collects vapors during vehicle refueling. The vapor recovery collection efficiency during both of these transfers is determined through certification of vapor recovery systems.

Figure 1
Phase I and Phase II Vapor Recovery Systems at Service Stations

Phase I (distribution) Phase II (consumer)



The ARB and the air pollution control and management districts (districts) share implementation of the vapor recovery program. ARB staff certifies prototype Phase I and Phase II vapor recovery systems installed at operating station test sites. District rules and state law require that only ARB-certified systems be installed. District staff inspects and tests the vapor recovery system upon installation during the permit process and conducts regular inspections to check that systems are operating as certified.

The EVR amendments to the vapor recovery program are based on two goals. The first goal is to achieve additional emission reductions from petroleum marketing operations, one of the largest stationary source categories of reactive organic gases (ROG) emissions that contribute to ozone formation. EVR will help meet our State Ozone Implementation Plan (SIP) commitments and fulfill the obligations of a SIP lawsuit settlement. The second goal is to make major improvements in the certification process to increase the in-use reliability of vapor recovery systems at gasoline stations. Vapor recovery systems serve both as control for ROG and as control for benzene, a toxic air contaminant. Certification

improvements will address concerns raised by both air pollution control districts and gasoline marketers who purchase vapor recovery equipment.

The vapor recovery requirements affect a multitude of stakeholders. These include the vapor recovery equipment manufacturers, gasoline marketers who purchase this equipment, contractors who install and maintain vapor recovery systems and air pollution control districts who enforce vapor recovery rules. In addition, California certified systems are required by most other states and many countries.

The EVR program is expected to achieve over 25 tons/day of ROG emission reductions statewide. Gasoline vapor contains toxic air contaminants, such as benzene and 1,3-butadiene that will also be controlled by EVR. Statewide benzene emission reductions are estimated at 151 lbs/day.

At time of adoption, the cost-effectiveness of EVR was estimated at $1.80/lb of ROG reduced. Based on adjustments made to the cost analysis during the technology review, the overall cost-effectiveness of EVR is now estimated at $5.24/lb. If all the EVR costs were passed on to the consumer in the form of higher gasoline prices, the increase attributable to EVR would be 0.68 cents/gallon.

B. Legal Authorities

Section 41954 of the Health and Safety Code (Appendix 3 contains a copy of section 41954) requires ARB to adopt procedures and performance standards for controlling gasoline emissions from gasoline marketing operations, including transfer and storage operations to achieve and maintain ambient air quality standards. This section also authorizes ARB, in cooperation with districts, to certify vapor recovery systems that meets the performance standards. Section 39607(d) of the Health and Safety Code (HSC) requires ARB to adopt test procedures to determine compliance with ARB and districts non-vehicular standards. State law (HSC section 41954) requires districts to use ARB test procedures for determining compliance with performance standards and specifications established by ARB.

To comply with state law, the Board adopted the certification and test procedures found in title 17, Code of Regulations, sections 94110 to 94015 and 94101 to 94165. These regulations reference procedures for certifying vapor recovery systems and test procedures for verifying compliance with performance standards and specifications.

C. Comparable Federal Regulations

There are no comparable federal regulations that certify gasoline vapor recovery systems for service stations; however, changes to ARB vapor recovery certification regulations may have a national impact. ARB certification is required by most other states that mandate the installation of vapor recovery systems in gasoline dispensing facilities.

III. EVR PROGRAM IMPLEMENTATION

This section discusses the timetable for EVR implementation for existing and future service station installations.

A. State Law Requirements and Four-Year Clock

The EVR program that the Board approved in March 2000 significantly modified standards for Phase I and Phase II vapor recovery systems. This means that existing vapor recovery system certifications expire on the EVR operative date of the new requirements and require ARB to issue certifications to the new standards.

State law (HSC section 41956.1) provides that vapor recovery systems certified under procedures in effect prior to adoption of revised standards and installed prior to the effective date of the revised standards may continue to be used for a period of four years after the effective date of the revised standards. This is commonly referred to as the "4-year clock." Thus, for example, station owners who purchased and installed new vapor recovery systems before the systems meet a standard with an effective date of April 1, 2001, would have until April 1, 2005 before their systems would be required to be replaced or upgraded to meet the EVR standard. State law requires that replacement parts and components must be certified.

New facilities must use certified vapor recovery systems that meet the EVR requirements in effect at time of installation. The "operative date" concept was developed by staff and adopted by the Board to provide additional time to certify systems for new installations after the start of the 4-year clock is triggered by the standard's effective date. Facilities that undergo a major modification as defined in the EVR regulations must also install, or upgrade to, EVR systems.

B. Phase-In of EVR Requirements

The EVR standards are being phased-in from April 1, 2001 to April 1, 2008 to allow time to develop systems that meet the technology-forcing standards and that accommodate the 4-year clock discussed above. The operative dates of the EVR standards, which apply to equipment sales and new installations, are represented by the beginning of each shaded bar in Figure III-1. The end of each bar indicates when all facilities must comply with the standard; thus, it represents the end of the 4-year clock period. The open, dotted bars show the time between the standard's effective date, which triggers the 4-year clock, and the standard's operative date, when the standard must be met by through equipment sales and at new installations.

For example, the top bar in the timeline shows the phase-in of the EVR Phase I standards. All new installations after the July 1, 2001 operative date must install an EVR Phase I

system. Existing facilities have until April 1, 2005 to upgrade their Phase I systems to meet EVR Phase I standards, effective April 1, 2001. In this case, the effective date of the EVR Phase I standard is April 1, 2001, the operative date is July 1, 2001 and the end of the 4-year clock is April 1, 2005.

C. Replacement Parts

As discussed above, HSC section 41956.1 provides that existing systems may be used for four years after the effective date of new standards. However, many vapor recovery components, such as nozzles and hoses, are expected to need replacement during this four-year period. Since state law requires that all necessary repair or replacement parts or components used during the four-year period be certified, a limited-term certification of replacement components was adopted to allow installed systems to continue operation with the best replacement parts available. The certifications for these replacement parts will expire at the end of the four-year clock if the parts do not meet all of the requirements of the new standards. However, when replacement parts certified to meet the new standard are commercially available and are compatible with the existing vapor recovery system, only those replacement parts shall be installed.

D. Effect of EVR Requirements on New Service Stations

As stated above, new installations must meet the operative EVR requirements at the time of installation. Because of the phase-in of the requirements, a new station installed in October 2002 is likely to have a vapor recovery system that meets only some of the EVR standards. For example, a new station installing a system in 2002 that meets the requirement to be compatible with vehicles equipped with on-board-refueling-vapor recovery (ORVR) will have until 2007 or 2008 to install, or upgrade to, a system that meets all of the EVR requirements. If an ORVR compatible system is not installed in 2002, an ORVR compatible system must be installed, or upgraded to, by April 2005. A station upgraded solely to meet ORVR compatibility in 2005 must meet the remainder of the EVR requirements by 2007 or 2008. Note that stations with annual gasoline throughputs equal to or greater than 1.8 million gallons must comply with all EVR requirements by 2007.

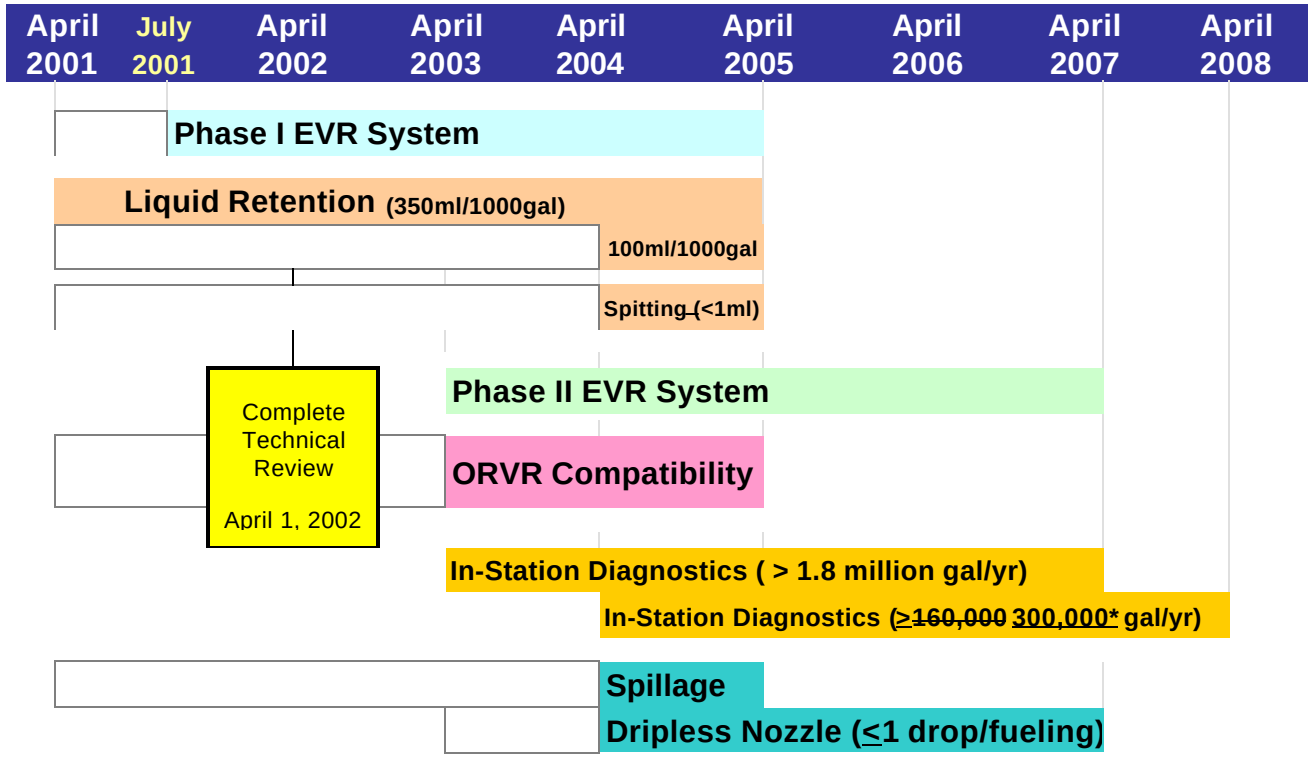
E. Effect of EVR Requirements on Existing Service Stations

As described above, existing stations may continue to use their current vapor recovery systems for four years and maintain these systems with certified replacement parts. With an ORVR compatible vapor recovery system installed before April 2003, a station would need to upgrade or replace the vapor recovery system to meet all of the proposed EVR requirements by April 2007/2008. Stations that choose systems that are not ORVR compatible will have to upgrade to a system that is ORVR compatible by April 2005. Stations may also choose to meet the all EVR requirements in April 2005, but are not required to do so until April 2007/2008. Costs associated with upgrades or replacements are discussed in the EVR Technology Review report (Attachment 4). Existing stations undergoing a major modification as defined in the EVR regulations are treated as new

facilities and must meet the EVR requirements upon installation.

Figure III-1

Current Enhanced Vapor Recovery Timeline



time between start of 4-year clock and date required for new installations

start of solid bar: date required for new or modified facilities

end of solid bar: date required for existing facilities (installed before start of bar)

*proposed amendment is from 160,000 to 300,000 gal/yr

IV. RULE DEVELOPMENT PROCESS AND PUBLIC OUTREACH EFFORTS

Participation in rule development from Enhanced Vapor Recovery stakeholders was encouraged through workshops, individual meetings, an advisory workgroup, letters to equipment manufacturers, and announcements via the internet.

A. Workshops

In the EVR Resolution, the Board directed staff to hold one or more workshops in conjunction with the technology review. Staff conducted 4 workshops in Sacramento on October 9, 2001, February 5, 2002, June 18, 2002 and September 9, 2002. There were 62 attendees at the October 2001 workshop representing petroleum marketers, vapor recovery equipment manufacturers and air pollution control agencies, one from the state of New York. The presentation was made available on the web in advance of the workshop, so that the 33 persons calling in to listen to the workshop could follow along. 64 stakeholders attended the February 2002 workshop, with 21 more listening in on an audio broadcast. An internet audio broadcast was offered for the June 18, 2002 and September 9, 2002 workshops, with 65 and 50 stakeholders attending in person respectively.

B. Meetings

Meetings have been held with a number of stakeholders as summarized below.

Table IV-1
EVR Technology Review Meetings

Stakeholder	Date(s)
American Petroleum Institute (API)	10/9/01, 2/4/02, 6/18/02, 9/3/02
ARID Technologies	11/29/01
CA Independent Oil Marketers (CIOMA)	12/5/01, 3/4/02, 6/18/02, 7/11/02, 9/3/02
CAPCOA Vapor Recovery Committee	10/11/01, 4/25/02, 7/18/02, 10/17/02
Healy Systems	1/16/02
Marconi (Gilbarco)	10/10/01, 2/6/02
OPW	11/29/01, 2/5/02
Robinson Oil Corporation	12/19/01
Veeder-Root	10/10/01, 2/5/02, 5/22/02
Western States Petroleum Association (WSPA)	10/9/01, 2/4/02, 4/12/02, 5/21/02, 6/18/02, 9/3/02, 10/15/02

In addition to the meetings listed above, staff provided information on the EVR regulations

at the 2002 Certified Unified Program Agency (CUPA) Conference on February 7, 2002. The audience included local agency staff who inspects service stations for compliance with fire safety and clean water regulations.

C. EVR Tech Review Workgroup

An EVR Tech Review workgroup was formed to provide feedback on issues during the development of the technical review. The members of this advisory group are provided below.

Name	Affiliation
Cindy Castronovo Joe Guerrero Tom Scheffelin	ARB
Rosa Salcedo Randy Smith	San Diego Air Pollution Control District (APCD)
John Schroeder	San Joaquin Valley APCD
Kevin Tokanaga	Glenn County APCD
Tom Dwelle Marilyn Sarantis	CA Independent Oil Marketers Association (CIOMA)
Ron Wilkniss	Western States Petroleum Association (WSPA)
Dennis Decota	CA Service Service Station and Automotive Repair Association (CSSARA)
Don Gilson	Chevron Products Company

Three EVR tech review teleconference workgroup calls were held on December 12, 2001, February 21, 2002, and March 6, 2002.

D. Letters to Vapor Recovery Equipment Manufacturers

Two letters were targeted at vapor recovery equipment manufacturers to gather information regarding feasibility of those EVR standards expected to be especially challenging.

A letter was sent to seven nozzle manufacturers on November 2, 2001 requesting information regarding feasibility of the EVR standards for spillage, post-fueling drips ("dripless nozzle") and nozzle spitting. Similarly, a letter was mailed to six vapor processor manufacturers on November 9, 2001 requesting views on the feasibility of the maximum air-to-liquid (A/L) ratio of 1.3 for a system with a processor and the maximum hydrocarbon feedrate of 5.7 lbs/1000 gallons.

E. Internet

Stakeholders were encouraged to join the vapor recovery list-serve to receive electronic mail (e-mail) notifications when new materials are posted on the vapor recovery webpage (www.arb.ca.gov/vapor/vapor.htm). The workshop notices, agendas, and presentations, as well as the letters to the manufacturers are all available on the webpage. Stakeholders are encouraged to submit formal comments by letter, but may also address questions and comments to staff via e-mail.

V. REASONS FOR AND SUMMARY OF PROPOSED AMENDMENTS OF CERTIFICATION AND TEST PROCEDURES

A. Proposed Modifications to Definitions for Vapor Recovery Systems (D-200)

D-200 provides definitions and acronyms for terms used throughout the vapor recovery certification and test procedures. Three new definitions and five revised definitions are proposed:

1. Rigid piping

Subsection 4.12.4 of the vapor recovery certification procedure CP-201 requires that the "vapor return piping shall be constructed of rigid piping or shall be contained within rigid piping, or shall have an equivalent method, approved by the Executive Officer, for ensuring that proper slope is achieved and maintained." The rigid piping requirement is intended to prohibit the use of "flexible" pipe that can lead to low points in the vapor piping which can collect liquid and lead to blockage within the vapor return piping. However, there are currently no standards to implement certification to the "rigid piping" requirement. Staff proposes to add a definition of "rigid piping" to D-200 and adopt a new test method, TP-201.2G, to address this deficiency.

Rigid piping is proposed to be defined as any piping material with a bend radius that exceeds six feet as determined by TP-201.2G. The six-foot-bend radius is the same as that cited for rigid piping in the proposed Underwriters' Laboratory standard (UL 2248) for marina fueling systems.

2. Aboveground Storage Tanks

The EVR standards and specifications for vapor recovery certification do not apply to gasoline dispensing facilities using aboveground storage tanks at this time. A new definition for aboveground storage tanks is proposed to clarify who is subject to the EVR regulations.

3. In-Station Diagnostics

A new definition for in-station diagnostics is proposed to clarify the term and the purpose of the in-station diagnostics systems.

4. Processors

"Processor" is currently defined as "a vapor processor, either destructive or non-destructive, utilized on a vacuum assist system." Under EVR, processors are not limited to use for assist systems. The proposed revised definition of processor is "a vapor

processor, either destructive or non-destructive, that operates to manage the pressure of the vapor in the gasoline storage tank within specified limits."

5. Phase II system

"Phase II" is currently defined as "the control of vapors during the transfer of gasoline from the gasoline dispensing facility to the vehicle." One stakeholder commented that the EVR Phase II standards address more than just transfer emissions. Staff proposes to expand the Phase II definition to add "and storage of gasoline at the gasoline dispensing facility."

6. Underground Storage Tank

Minor changes are proposed to the definition of underground storage tank (UST) to clearly differentiate the UST from an aboveground storage tank (AST).

7. Operative and Effective Dates

Language is proposed to be added to the definitions of both "operative date" and "effective date" to clarify how these dates affect implementation of the EVR regulations.

8. Acronyms

Acronyms are clarified and added for terms used within the EVR test procedures.

B. Proposed Modifications to Certification Procedure for Vapor Recovery Systems at Gasoline Dispensing Facilities (CP-201)

CP-201 describes the procedure for evaluating and certifying Phase I and Phase II systems used at service stations. CP-201 contains the system performance standards and specifications and references the test procedures, or "TPs", used to determine compliance with the certification standards and specifications. Staff proposes revisions to both the certification standards and the certification process.

Certification Standards

1. "Dripless" nozzle

Subsection 4.7.2 of CP-201 requires vapor recovery nozzles to be "dripless," meaning that no more than one drop shall be permitted following each refueling operation as determined by TP-201.2D. The dripless nozzle standard was identified as the only standard deemed not feasible within the implementation timeframe by the EVR Technology Review. Data submitted by nozzle manufacturers show that 3 drops per refueling is achievable with new

nozzle designs. Staff proposes modification of the dripless nozzle standard from "one" to "three" drops.

Field tests of pre-EVR nozzles using adopted TP-201.2D indicate that existing nozzles average 19 drops per refueling. Thus, the proposed modification to 3 drops still provides a significant improvement over existing nozzle performance.

Staff also proposes modifications to the test procedure for measuring post-fueling drips as discussed later in this document. The test procedure changes are intended to more closely represent a typical GDF customer refueling. Staff is working with nozzle manufacturers to assess if the test procedure changes warrant further modification of the dripless standard, and if so, will present a modification to the dripless standard proposed for the December Board meeting.

2. ISD exemption level

The original EVR economic analysis assigned categories to GDFs based on gasoline throughput, separating the GDFs into categories – GDF1 through GDF5. The economic analysis indicated that ISD was not cost-effective for the smallest throughput stations designated as GDF1. The GDF1 stations are characterized as having throughputs up to 25,000 gallons/month with a typical throughput of 13,233 gallons/month. The EVR regulations provide for an ISD exemption for stations with an annual throughput of 160,000 gallons/yr, which is equivalent to the typical throughput of 13,233 gallons/month.

In CP-201 section 10, the staff proposes to raise the annual throughput level for exemption because the current level excludes gasoline dispensing facilities in the GDF1 category that have monthly throughputs between 13,233 gallons/month and 25,000 gallons/month. The original intent was to provide the ISD exemption for all facilities in the GDF1 category, which are stations with monthly throughputs up to 25,000. Exempting all the GDF1 stations would raise the exemption throughput to 300,000 gal/year.

3. EVR Exemption for Districts in Attainment with State Ozone Standard

In CP-201 section 2 staff proposes to allow existing service stations in districts that are in attainment with the state ozone standard to continue use of currently installed Phase I and Phase II vapor recovery equipment, with some exceptions. These installed gasoline dispensing facilities would be exempt from EVR requirements for Phase I systems by April 2005, Phase II systems by April 2007, and ISD by April 2008. However, installed GDFs will need to install or upgrade equipment by April 2005 if their Phase II vapor recovery systems are not certified to be compatible when fueling vehicles equipped with ORVR because the incompatibility causes some vapor recovery systems to become less efficient and could result in increased exposure to benzene. In addition, newly installed gasoline dispensing facilities and existing GDFs that undergo major modifications as defined in D-

200, would be required to meet Enhanced Vapor Recovery requirements.

Since the primary focus of the EVR regulation is to provide additional hydrocarbon emission reductions to reduce ozone formation, additional emission reductions are not necessary for areas that are already in ozone attainment. The enclosed table indicates that the estimated 268 gasoline dispensing facilities in these districts account for 1.2% of the total gasoline throughput. Emission reductions of 0.31 tons/day would not be realized, but these are only 1.2% of the total emission reductions attributed to EVR.

The 2001 area designations for the state ambient air quality standards show the following districts would qualify for the proposed EVR exemption for existing facilities:

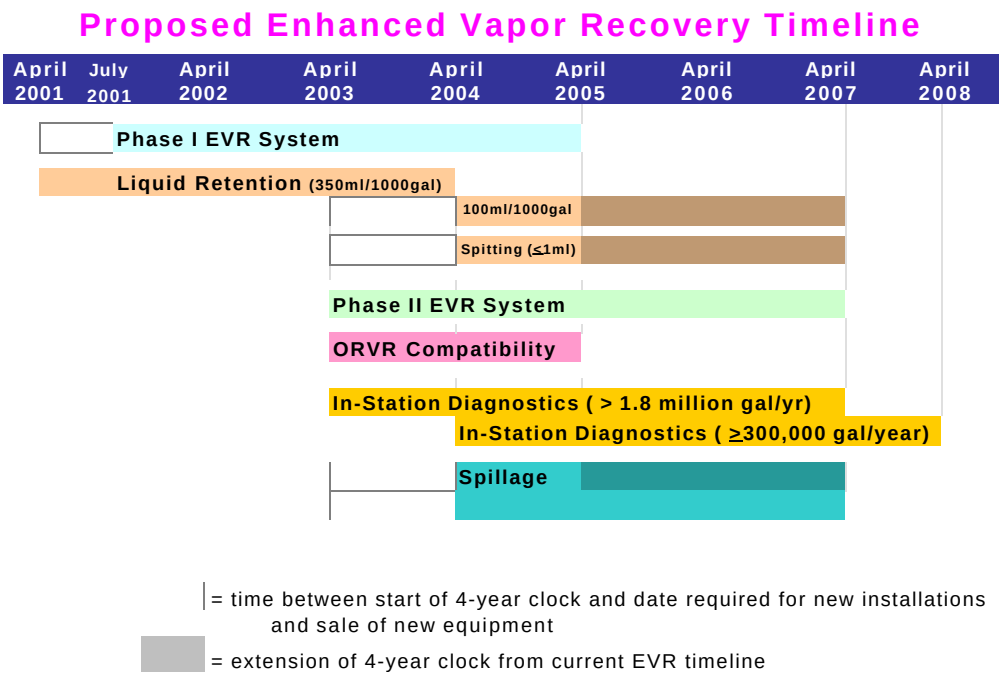
Lake County Air Quality Management District
Lassen County Air Pollution Control District
North Coast Unified Air Quality Management District
Mendocino County Air Quality Management District
Modoc County Air Pollution Control District
Siskiyou County Air Pollution Control District

Districts achieving attainment status before the end of the phase-in period for a given EVR standard are also eligible for the EVR exemption as described above. As full implementation of EVR standards are required by April 2008, no exemptions will be granted after 2008.

4. Nozzle Standard Effective Dates

In Table 2-1 of CP-201, staff proposes to change the effective dates from April 2001 to April 2003 for three EVR standards: liquid retention, nozzle spitting, and nozzle spillage. This will align the phase-in schedule for these standards with the dripless nozzle standard and other Phase II standards as indicated below. The operative date, which is the date equipment meeting the standard must be sold and installed in California at new facilities, remains at April 2004. The patterned bars in Figure V-1 show the extension of the compliance date for all existing facilities from April 2005 to April 2007 for these standards.

Figure V-1



The realignment of three nozzle standards to match the implementation schedule of the fourth nozzle standard (post-fueling drops), as well as the EVR Phase II standards, will help simplify the EVR requirements for both service station owners and district inspectors. Staff notes that most nozzles are replaced within one or two years, and since replacement nozzles after 2003 must be EVR-certified, it is anticipated that most, if not all, stations will actually be in compliance with the nozzle standards by 2006.

5. Processor HC rate

As described in the EVR Technology Review report, staff is proposing the following amendment to CP-201 Table 8-1 and subsection 8.3 to better reflect the intent of the standard:

"maximum hydrocarbon feedrate from ~~to~~ the processor shall not exceed 5.7 lbs/1000 gallons."

The intent of this processor specification is to limit emissions during a processor-operation failure. Stakeholders pointed out that limiting the flow into the processor will compromise the efficiency of some membrane processors and suggested the change to limit the

processor exhaust stream.

6. Vapor piping specifications

Subsection 4.12.5, as renumbered, requires rigid pipe for vapor return piping. However, there is no standard with which to determine if piping is rigid. Staff proposes to add a definition of rigid piping in D-200 and reference a test procedure for determining rigidity in CP-201.

The rigid piping requirement continues to allow use of flexible connectors that are necessary to connect the rigid piping to other equipment at potential stress points. Staff proposes to add language to clarify that flexible connectors are allowed.

7. Hand pump specifications

Subsections 3.6.3 and 3.6.4 of CP-201 describe proper operation of Phase I spill containers and associated equipment. Spill containers are required by the State Water Resources Control Board (SWRCB) to contain any spillage during filling of the underground storage tank. ARB staff proposes to remove language in subsections 3.6.3 and 3.6.4 to avoid any conflict with SWRCB regulations.

8. Underground storage tank "daily high pressure"

The UST pressure limits have two criteria – a positive 0.25 inch water column average and a high pressure limit of 1.5 inches water column. In the last amendment of CP-201, revisions were made to clarify the calculation of the average 0.25 inch average pressure, but confusion remains as to how the 1.5 inch standard is determined. Language has been added to subsection 4.6.4 to clarify how daily high pressure is calculated.

9. Phase I Dynamic Pressure Drop

Table 3-1 references TP-201.2B for determining the pressure drop specification for the Phase I delivery at three delivery rates. TP-201.2B is not appropriate for measuring this parameter. Staff proposes to determine compliance with the pressure drop specification by engineering evaluation.

10. Phase I Delivery Elbows

Subsection 3.4.1 allows a swivel to be installed either on the Phase I adaptor at the service station or on the delivery elbow on the cargo tank. Subsection 3.4.1 already requires that if a delivery elbow with a swivel elbow is used, then only cargo tanks with those elbows shall deliver to a facility without an EVR compliant adaptor. However, this requirement is difficult

to enforce. One solution is to require the facility to install adaptors that may only connect to swivel elbows and not connect to standard elbows. Staff proposes to modify subsection 3.4.1 so that if a service station chooses to comply with Phase I EVR by having the swivel on the cargo tank elbow, then the Phase I adaptors at the facility must be incompatible with a delivery elbow that does not have a swivel.

11. ORVR fuelings excluded from efficiency calculation

Subsection 4.1.1 currently requires that the Phase II emission factor or efficiency be calculated for three test populations:

1) The 200 vehicle matrix as defined in TP-201.2A
2) Vehicles defined as "ORVR" vehicles
3) Vehicles defined as "non-ORVR" vehicles

The efficiency calculation compares vapors emitted to the vapors recovered through the dispenser during the vehicle refueling. Since ORVR vehicles capture the refueling vapors on the vehicle canister, these gasoline vapors are not recovered through the gasoline dispenser, which prevents calculating a true Phase II efficiency for these fuelings. Staff proposes to exclude ORVR fuelings from the Phase II efficiency calculation. ORVR fuelings will continue to be included in the calculation of the Phase II emission factor.

12. Fugitive emissions no more than fifty percent (50%) of Phase II emission factor

Subsection 4.6 of CP-201 warns that UST pressures sufficient to cause potential fugitive emissions that exceed 50% of the maximum allowable emission factor shall not be certified. Staff proposes to add similar language to subsection 4.1.2 as subsection 4.1 describes the Phase II emission factor/efficiency requirements.

Certification Process

13. Innovative system

Subsection 2.3 of CP-201 describes the innovative system certification option. The intent of this option is to allow design flexibility for systems that emit much less than the standards allow. In practice, staff has reviewed system applications that seek to waive several EVR standards and specifications on the grounds that the system is innovative although the system does not claim to have reduced emissions compared to a non-innovative system. Amendments to subsection 2.3 and subsection 11.1.7 are proposed to require that the benefits of the innovation are greater than the consequences of failing to meet an identified standard or specification.

14. Test site throughput for six-pack dispensers

Although new EVR systems installed after 2003 will require unihose dispensers, existing multi-hose or "six-pack" dispensers will be allowed to remain in use. EVR Phase II systems are thus offered the option of certifying on a test site with unihose or multihose dispensers. Unihose test sites are required to have a minimum throughput of 150,000 gallons/month. A nozzle at a test site with six-pack dispensers will not see the same level of use as a nozzle at a unihose dispenser. To provide a level playing field, staff proposes to amend subsection 13.1.1 so that a test site with six-pack dispensers have a minimum throughput requirement of 150,000 gallon per month for one grade of gasoline dispensed.

15. Dispenser piping

Table 16-2 of CP-201 designates dispenser vapor piping for balance systems as a non-system specific component. This means that once the vapor piping configuration has been certified as part of a complete system, then the same vapor piping configuration can be used with other certified systems without having to undergo another full battery of certification tests. Staff proposes to remove the word "balance" to allow both assist and balance dispenser vapor piping to be certified as non-system-specific components.

16. System-specific and non-system-specific components

ARB certification is issued only after each component of the system, and the system as a whole, successfully demonstrates compliance with applicable performance standards and specifications. Since state law mandates that ARB certify systems, some certification testing is required to add any component to an existing system or allow interchange of components between certified systems. The extent of additional certification testing to add a new component to a certified system depends on whether the system is classified as a system-specific or non-system-specific component. Section 16 of CP-201 is proposed to be revised to clarify the testing requirements for these components.

17. Certification application

Section 11 of CP-201 describes the information that is required in the application for certification, which includes test results from the system proposed for certification. Language is proposed to clarify that the application shall include at least 200 observations of spillage, of which at least 40 percent of the observations must be of fill-up refuelings.

18. Termination of certification testing

Equipment failures during the operational test constitute grounds for termination of the certification test. Additional language is proposed for section 13 of CP-201 clarifying the process for evaluating the failure and circumstances that may allow continuation of the

operational test.

19. No sale of uncertified equipment

Language is proposed for subsection 13.1 to clarify that uncertified vapor recovery systems undergoing certification testing are not exempt from state law, including the prohibition against the offer for sale, or sale of, uncertified equipment.

20. Certifications that have been terminated

Vapor recovery systems that are installed as of the operative date of a new standard or that are otherwise subject to Health and Safety Code section 41956.1 may remain in use for the remainder of their useful life, or for up to four years after the effective date of the new standard. All replacement parts must meet the requirements of Section 19 of CP-201.

A new section 19.2 is proposed to allow installation of systems with terminated certifications when certified systems meeting all the operative EVR standards are not commercially available as determined by the ARB Executive Officer.

21. Clarifying Amendments

Other minor amendments have been made to CP-201 to correct test procedure references and improve the clarity and consistency of the procedure.

C. Proposed Modifications to CP-201 Appendix

1. Move ISD Appendix into CP-201

The ISD Appendix is proposed to be incorporated into section 10 of CP-201.

2. ISD-based Maintenance Certification

Normally, all vapor recovery equipment failures identified during the certification operational test are grounds for test termination. However, staff recognizes that the continuous monitoring afforded by in-station diagnostics systems may make it more difficult to pass the operational test. Degradations in system performance can be quickly identified by ISD and subsequently corrected, representing a reduced emission impact compared to degradations that go undetected until the next field test. For this reason, staff is proposing allowing ISD-detected maintenance during the operational test for vapor recovery systems with ISD.

In subsection 10.1.12, staff proposes that systems with ISD be required to operate for a minimum of 90 days with no failures or degradations. For the remainder of the operational

test, only ISD-detected degradations will be allowed and must be repaired quickly. The maintenance manual shall include specific response instructions for all ISD-detected maintenance. A maximum of five percent (5%) downtime is proposed for ISD-detected maintenance during the certification operational test. Field test failures will remain grounds for test termination.

3. Certify ISD by system type

ISD systems will be certified as "system-specific" components as described in section 16 of CP-201. Once an ISD system has been certified as part of a complete EVR vapor recovery system, an ISD system may be considered for use with another certified system of similar design subject to field compatibility testing.

4. Modify air-to-liquid (A/L) ratio failure criteria

The existing criteria for ISD assessment of A/L ratio require a minimum of 15 dispensing events. If a significant number of the 15 dispensing events are to ORVR vehicles, this could result in false alarms. Staff proposes to modify the criteria to specify 15 non-ORVR dispensing events before an A/L assessment is made.

5. Remove language on "excluded time"

A previous version of CP-201 defined UST ullage pressure data associated with Phase I deliveries as excluded time. The currently adopted CP-201 does not exclude the pressure data associated with Phase I deliveries. Staff proposes to remove the reference to "excluded time" from subsection 10.2.4(a) [renumbered from ISD Appendix section 2.2.1.1] as well as Table 4-1 of CP-201.

6. Modify pressure integrity failure criteria

Subsection 2.2.1.4 [renumbered to subsection 10.2.4(d)] currently requires the ISD system to assess when the "EVR system vapor space leaks at a rate which can be represented by an orifice which leaks at two times the allowable CARB tight system standard in TP-201.3." A stakeholder pointed out that this standard requires the use of an orifice with specific hole size to be developed for each certification test. The section is proposed to be modified to remove the reference to the orifice and TP-201.3 and clarify that the ISD system assess when the vapor space leaks at twice the allowable standard specified in CP-201.

7. Modify ISD tampering protection

Stakeholders are concerned that ISD systems could be turned off by the GDF operator to allow vehicle refueling to continue when vapor recovery system failures are identified. Language is proposed to require the ISD system to be designed and installed so that the

GDF cannot dispense fuel unless the ISD system is operating.

Proposed Modifications to Phase I Test Procedures

D. Phase I efficiency (TP-201.1)

TP-201.1 is used to determine the efficiency of Phase I systems by comparing the volume of vapors emitted to the vapors recovered by the cargo tank. The existing TP-201 estimates the volume of vapors returned to the cargo tank by assuming it is equal to the volume of gasoline delivered. Staff proposes amendments to TP-201.1 to provide an option to use a volume meter to measure, rather than estimate, the volume of vapors recovered by the cargo tank. Additional amendments are proposed to TP-201.1 to provide more detailed equipment specifications, add pre-test requirements for a leak-decay test of the facility storage tank, correct an error in equation 9.2, and clarify the test procedure.

E. Static Torque of Rotatable Phase I Adaptors (TP-201.1B)

TP-201.1B describes how to determine if a rotatable Phase I adaptor complies with the static torque performance standard. Amendments are proposed to clarify the purpose and principle of the test procedure, to more completely describe the torque wrench requirement, and to provide more explanation on how to conduct the torque measurements.

F. Leak Rate of Drop Tube/Drain Valve Assembly (TP-201.1C)

TP-201.1C measures the leak rate of the drop tube/drain valve assembly associated with Phase I equipment. Amendments are proposed to clarify the purpose and principle of the test procedure, to add equipment specifications, to include calibration criteria, to clarify the steps involved in leak rate measurement, and to specify post-test procedures.

G. Leak Rate of Drop Tube Overfill Prevention Device (TP-201.1D)

TP-201.1D measures the leak rate of a drop tube overfill prevention device and drain valve associated with Phase I equipment. Amendments are proposed to clarify the purpose and principle of the test procedure, to add equipment specifications, to include calibration criteria, to clarify the steps involved in leak rate measurement, and to specify post-test procedures.

Proposed Modifications to Phase II Test Procedures

H. Phase II emission factor and efficiency (TP-201.2)

Equation 12.7 contains the term "M_2", but does not define the term. Subsection 12.7 is proposed to be modified to define "M_2" as the mass emission factor at Test Point 2. Test point 2 is the location for measuring the vapor returned to the underground storage tank during a vehicle refueling.

I. Component leakrate (TP-201.2B)

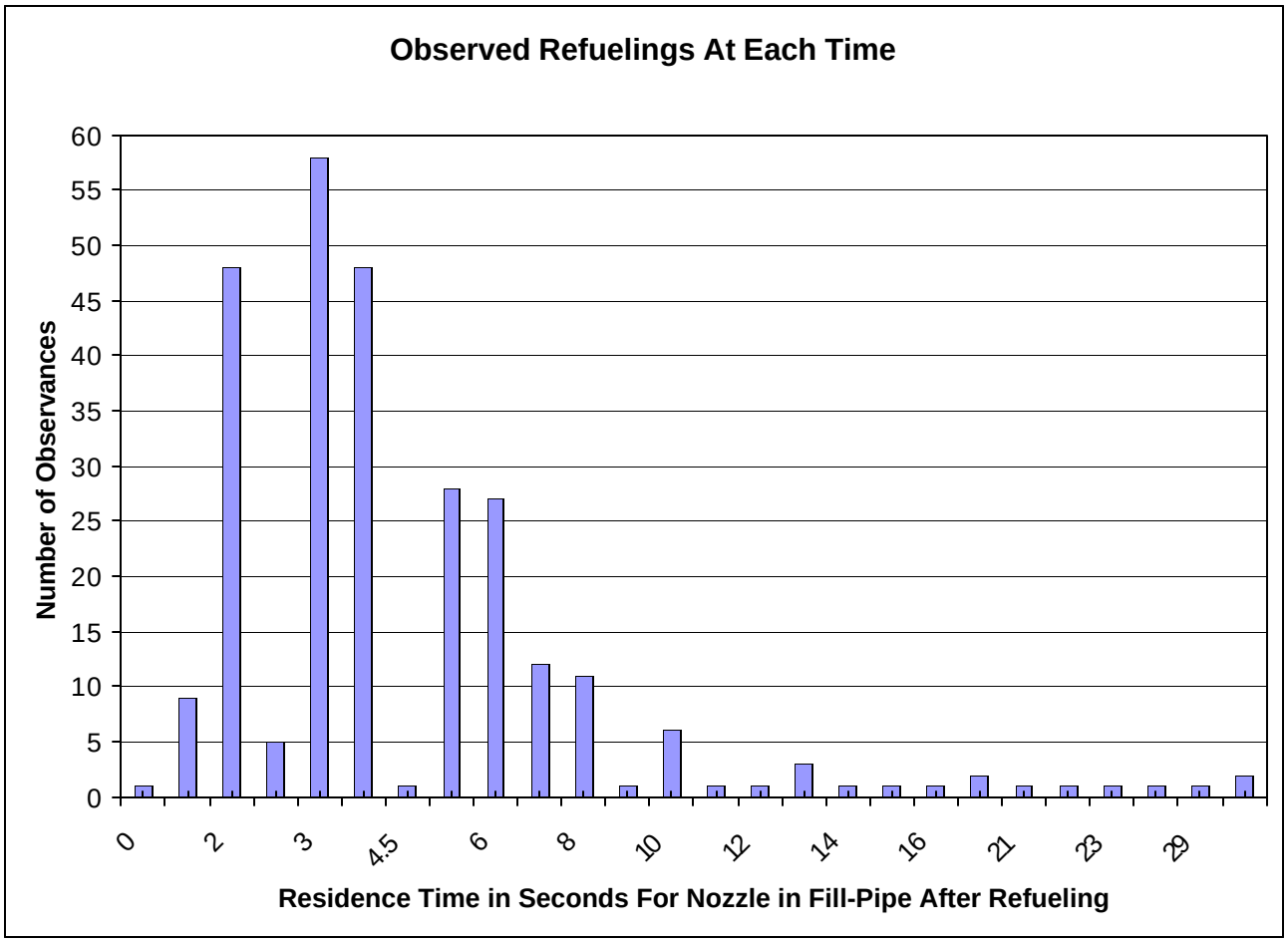
Amendments to clarify the applicability and purpose of TP-201.2 are proposed to sections 1 and 2 of the test procedure. Appendix 1 of TP-201.2, Determination of Pressure and Vacuum Performance Specifications for Pressure/Vacuum Vent Valves, is proposed to be deleted. A new test procedure, TP-201.1E, for pressure/vacuum relief vent valves will replace Appendix 1of TP-201.2.

J. Post-fueling Drips from Nozzle Spouts (TP-201.2D)

Amendments to TP-201.2D are proposed for two primary purposes. First, the test procedure is intended to measure the post-fueling drops that a consumer would experience after a careful refueling with no "top-offs". Changes are proposed to more closely simulate a typical vehicle refueling. Second, the test procedure as written seems to overlap emissions already measured by TP-201.2E, the procedure for measurement of liquid retention. The changes proposed will help eliminate this potential for double-counting emissions.

Staff observed 278 customer fuelings and recorded data on nozzle position, fill-pipe time (time nozzle in vehicle fill-pipe after nozzle shut-off and before removal from fill-pipe), and other information. As shown in Figure V-2, the fill-pipe time for 90% of the vehicle fuelings was less than the 10-second time specified in TP-201.2D. Staff proposes to change the fill-pipe time from 10 sec to 5 sec, which better represents a typical vehicle refueling.

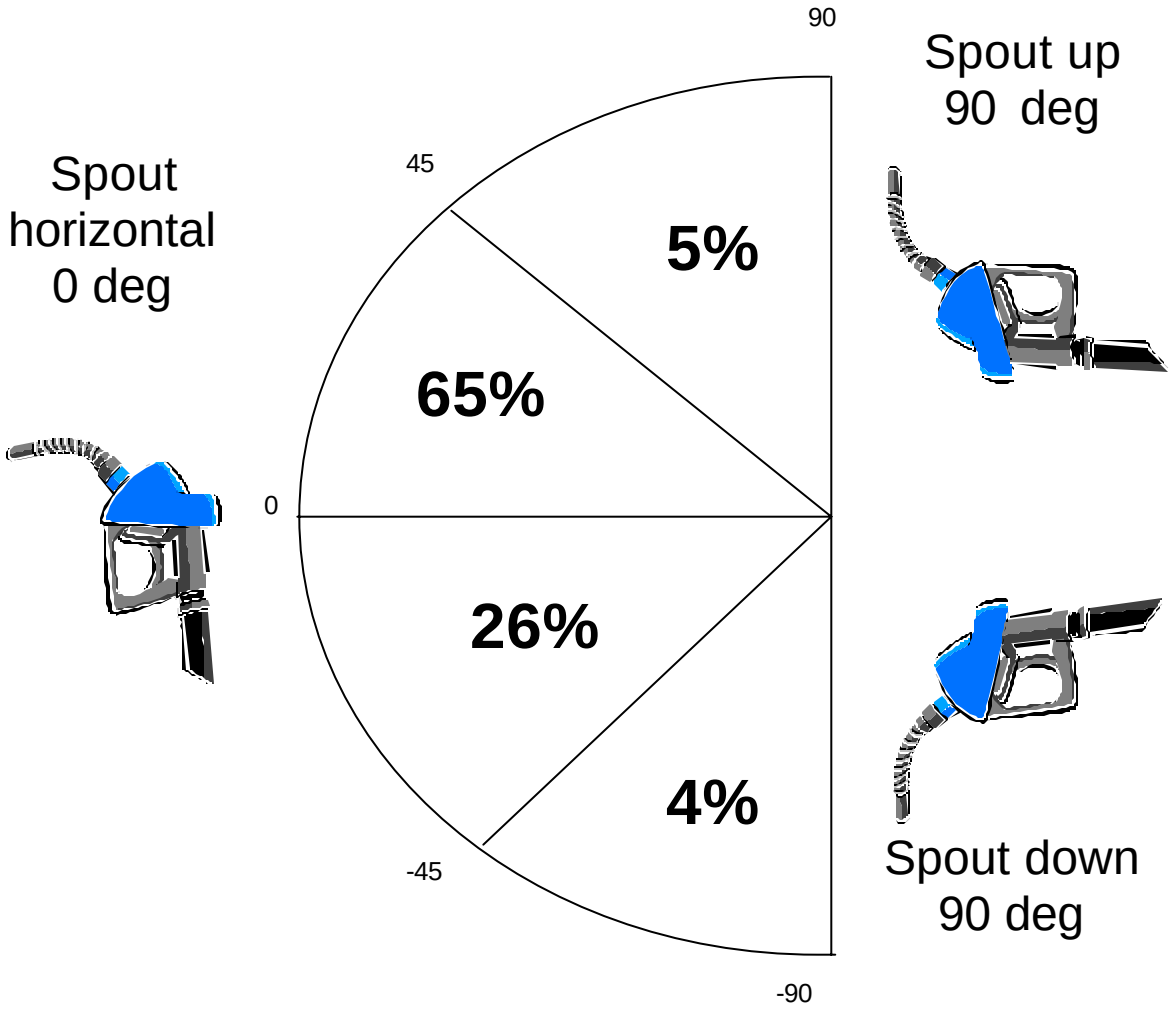
Figure V-2
Observed Time Nozzle Remains in Vehicle Fill-neck after Refueling



The adopted TP-201.2D specifies that after the vehicle fill-neck hold time, the nozzle is carefully removed, keeping the spout pointing downward, until the spout exits the fill-pipe. Then, the nozzle is immediately tilted so that the spout is vertical, pointing upward. The nozzle is moved away from the vehicle and the nozzle pointed downward so that the spout is vertical to the ground. Then the number of drops is counted for five seconds to determine the post-refueling drops.

Staff has two concerns with this procedure. One, customers do not typically place nozzles upside-down when returning the nozzle from the vehicle to the gasoline dispenser. ARB field observations show that for 70% of refuelings observed, the nozzle was held in a horizontal or higher position when the nozzle was returned as indicated below:

Figure V-3
Observed Nozzle Orientation between Removal of Nozzle from Vehicle Fill-neck after Refueling and Returning to Gasoline Dispenser (Percentage (%) of observations in 45 degree quadrants)



The second concern with the adopted procedure is that there is a potential overlap with the emissions characterized as liquid retention using TP-201.2E. In TP-201.2E, a customer conducts a refueling and returns the nozzle to the dispenser. The tester waits 60 seconds, inserts the nozzle tip into a container, then lowers the nozzle as low as possible while fully extending the hose. Liquid collected in the container is compared with the liquid retention standard specified in CP-201.

Staff proposes to modify TP-201.2D to measure drops while the nozzle spout is in the horizontal position, rather than the vertical position to avoid an overlap with liquid retention and to more closely simulate a typical consumer refueling.

K. Pressure-related Fugitive Emissions (TP-201.2F)

TP-201.2F is used during the certification testing to calculate the emission factor for pressure-related fugitives. This emission factor is combined with the vent, processor, and fill-neck emissions to calculate the overall emission factor and/or efficiency for the Phase II system.

Page 6 of the EVR Technology Review report discusses a concern regarding calculation of pressure-related fugitives. Staff realized that the current method of calculating pressure-related fugitives for inclusion in the total Phase II emission factor has two flaws. First, the fugitive emissions, while actually independent of gasoline throughput, will be calculated to be lower for a high throughput station. This is because the fugitives are normalized to the other emission factor (transfer, vent, and processor) units of pounds per 1000 (lb/1000) gallons in TP-201.2 in order to calculate total emissions from the Phase II system. Secondly, the fugitive emissions are dependent upon the tightness, i.e., leak rate, of the Phase II vapor space. Thus, a certification test site may be very tight, while in practice, the system may be installed at a site which operates at the highest allowable leak rate.

Staff proposes to modify the calculation of pressure-related fugitives to remove these biases by calculating fugitives assuming the largest allowable leak rate, a specified throughput, and the actual pressure profile at the certification test site. Depending on the actual throughput and leak integrity of the certification test site, this approach may result in a higher emission factor than emitted at the test site. Staff assumes that this higher emission factor could occur at normally operating service stations, which tend to have difficulty maintaining pressure integrity. If the actual fugitive emissions from a “tight” certification test station are used for certification, this will likely underestimate the fugitives that will occur at normally operating service stations.

New Test Procedures

L. Leak Rate and Cracking Pressure of Pressure-Vacuum Vent Valves (TP-201.1E)

As discussed above, the new TP-201.1E, Leak Rate Measurement of Pressure-Vacuum Vent Valves, is proposed to replace Appendix 1 of TP-201.2B. This amendment is consistent with the practice of specifying test procedures for Phase I components as TP-201.1X. TP-201.1E is a bench test procedure for checking that P/V valves do not exceed the allowable leak rates specified in CP-201. The bench test procedure can be used both for certification of P/V valves and compliance testing, such as at parts houses. The proposed new test procedure allows use of a mass flow controller for measuring flow for compliance purposes. The TP-201.2B appendix, which is proposed for deletion, specified use of a rotameter only. The mass flow controller provides higher accuracy and precision and is proposed as a requirement for certification testing.

M. Bend Radius Determination for Underground Storage Tank Vapor Piping (TP-201.2G)

As mentioned earlier, subsection 4.12.4 of CP-201 requires rigid pipe for vapor return piping. However, there is no standard for the rigid piping specification. Staff proposes to add a definition of rigid piping in D-200 and reference a test procedure for determining rigidity in CP-201.

TP-201.2G provides a simple, inexpensive, and quick test procedure for determining that a 10-foot section of vapor piping meets the minimum bend-radius requirement.

N. Procedures for Evaluating ISD Systems (TP-201.2I)

The ISD Appendix, renumber to section 10, of CP-201 provides numerous standards for in-station diagnostic systems, but does not describe how to determine when the ISD standards are met. Proposed TP-201.2I is a test procedure that specifies how ISD systems will be tested during certification to ensure ISD standards are met.

O. Balance component pressure drops (TP-201.2J)

Subsection 5.2.2 of CP-201 provides criteria for the dynamic pressure drop of balance system components. However, there is no adopted test method for determining component-pressure drops. New test procedure, TP-201.2J, is proposed to address this deficiency.

P. Equipment for Measuring Storage Tank Pressure (TP-201.7)

Subsection 13.3.4 of CP-201 requires that the pressure in the underground storage tank be monitored and recorded continuously throughout the operational test, but provides no guidance on how to accomplish the pressure monitoring and how to record the data. A new test procedure, TP-201.7, is proposed to ensure that pressure data at certification test sites is collected in a consistent manner and meets quality control standards.

VI. OUTSTANDING ISSUES

Concern has been expressed that for a period of time following the operative date of a new requirement, only one supplier may be certified and this may cause delays in procuring EVR systems and excessive prices. For 14 months after the operative date of the Phase I requirement, only one certified system was available. In this situation, the single supplier met demand and prices for the equipment were reasonable. However, gasoline marketers have expressed supply and cost concerns should only one Phase II system be certified after April 1, 2003. The other issues relate to the EVR implementation schedule, use of ISD monitoring data for enforcement action, and EVR costs.

1. Availability of EVR Certified Vapor Recovery Systems

Under current EVR regulations, Phase II EVR systems are required for new service station installations beginning in April 1, 2003. No Phase II system meeting EVR standards is yet certified. Because certification testing takes at least six months, it is unlikely that a system will be certified by April 1, 2003. Gasoline marketers claim stations scheduled to open after April 2003 are already in the planning and permitting stages.

Staff expects at least two Phase II systems to begin certification testing by November 2002. Amendments to the current certification procedures are proposed to provide the Executive Officer with authority to allow currently certified Phase II systems (non-EVR) to be sold on or after April 1, 2003 if no certified system is available.

2. Sole Source Vapor Recovery Equipment Supplier

Gasoline marketers contend the availability of only one certified Phase II system creates a monopoly that will lead to higher prices, as well as problems in getting equipment in a timely manner if the sole supplier cannot keep up with market demand. Also, because only one vendor for in-station diagnostics participated in the ISD pilot program, there may be only one ISD choice for EVR Phase II systems.

Staff agrees that ideally there should be a choice of EVR certified systems and commits to working with vapor recovery equipment manufacturers to increase the number of certified systems. At the same time, a sole vendor should not be penalized for making the effort to comply first with the EVR requirements. Staff will take action to allow use of pre-EVR systems if a significant supply shortage of a sole EVR certified system, or price gouging, occurs, as provided in amendments to section 19 of the certification procedure CP-201.

3: Different Schedules for ORVR compatibility and other Phase II System Standards

ORVR compatibility is required for all facilities by April 2005. EVR Phase II standards must be met by all facilities by April 2007. Equipment installed or upgraded to meet ORVR compatibility may also need to be replaced or modified again in April 2007. Because the costs for two equipment upgrades were not accounted for in the cost analysis, petroleum marketers have requested that the ORVR implementation schedule be aligned with the Phase II requirement so that only one system installation or upgrade is necessary.

Staff opposes this implementation schedule change. The effective date for ORVR compatibility was set as April 1, 2001 because two systems that met ORVR compatibility had already been certified by December 2000. The potential for additional emissions caused by ORVR incompatibility, identified in 1993, became a concern to local air districts by 1996. With the increasing numbers of ORVR-equipped vehicles on the road since the inception of the ORVR requirement for vehicles in the 1998 model year, the emissions caused by vapor recovery systems incompatible with ORVR-equipped vehicles has increased as well.

Since the Board hearing in March 2000 both existing and new/remodeled stations have faced business decisions related to the implementation schedule for EVR. Since March 2000 new/remodeled stations have had to decide whether or not they will install vapor recovery systems already certified as ORVR compatible. If an ORVR compatible system is installed, EVR phase II compliance may be delayed up to April 1, 2007. If a non-ORVR compatible system is installed, the decision paths diverge: The station may retrofit to a fully compliant EVR system by April 2005, meeting ORVR compatibility, EVR phase II, and other EVR requirements in one action. Alternatively, the station may retrofit to comply with ORVR compatibility by April 2005 and may retrofit again with EVR phase II and other EVR requirements by April 2007.

Stations with systems installed before March 2000 face similar decisions. Stations may retrofit to a fully compliant EVR system by April 2005, meeting ORVR, phase II, and other EVR requirements in one action. Alternatively, stations may retrofit to comply with ORVR compatibility by April 2005 and may retrofit again with EVR phase II and other EVR requirements by April 2007.

The EVR cost analysis makes the assumption that all vapor recovery equipment will need to be replaced. As shown above, stations have the option of retrofitting systems all at one time, or in stages.

4: In-Station Diagnostics Enforceability

ISD is designed to identify gross failures of vapor recovery systems. Districts are uncomfortable that district field tests may find violations of standards even when the ISD system has a “green light.”

Some districts want to use ISD results or values as a basis for enforcement action. Staff's position is that ISD be used as a diagnostic tool to encourage station operators to improve performance of the vapor recovery system. However, staff supports using ISD as a basis for enforcement action when the operator fails to take action as a result of the ISD warning signals.

5. EVR Costs Higher than 2000 Estimates

The EVR cost analysis has been updated several times in response to comments received from stakeholders. Increases in equipment cost estimates and correction of errors in the February 2000 EVR cost analysis have resulted in an increase in overall cost-effectiveness of $1.80/lb to $5.24/lb as noted in Table VI-1. Most of the increase is attributable to correction of an error in distributing the EVR costs over the EVR implementation period.

Table VI-1
Updates to EVR Cost-Effectiveness

	Overall EVR Cost-Effectiveness ($/lb)	EVR Equipment Cost for Typical Station (GDF3)	Statewide EVR Emission Reductions (tons/day)
February 2000 Staff Report	$1.80	$26,908	25.1
October 2002 EVR Tech Review Report	$5.24	$37,566	25.7

Table VI-2 provides the overall cost-effectiveness for in-station diagnostics only. Costs for the ISD equipment have been updated based on the actual costs incurred during the ISD pilot program. The emission reductions now include data from both balance and assist Phase II systems – only the assist system data was available in February 2000.

Table VI-2
Updates to ISD Cost-Effectiveness

	Overall ISD Cost-Effectiveness ($/lb)	ISD Equipment Cost for Typical Station (GDF3)	Statewide ISD Emission Reductions (tons/day)
February 2000 Staff Report	$1.57	$6,985	6.6
October 2002 EVR Tech Review Report	$5.25	$11,556	8.5

The overall cost-effectiveness of EVR remains comparable to other recent ARB regulations as shown in Figure VI-1.

Figure VI-1

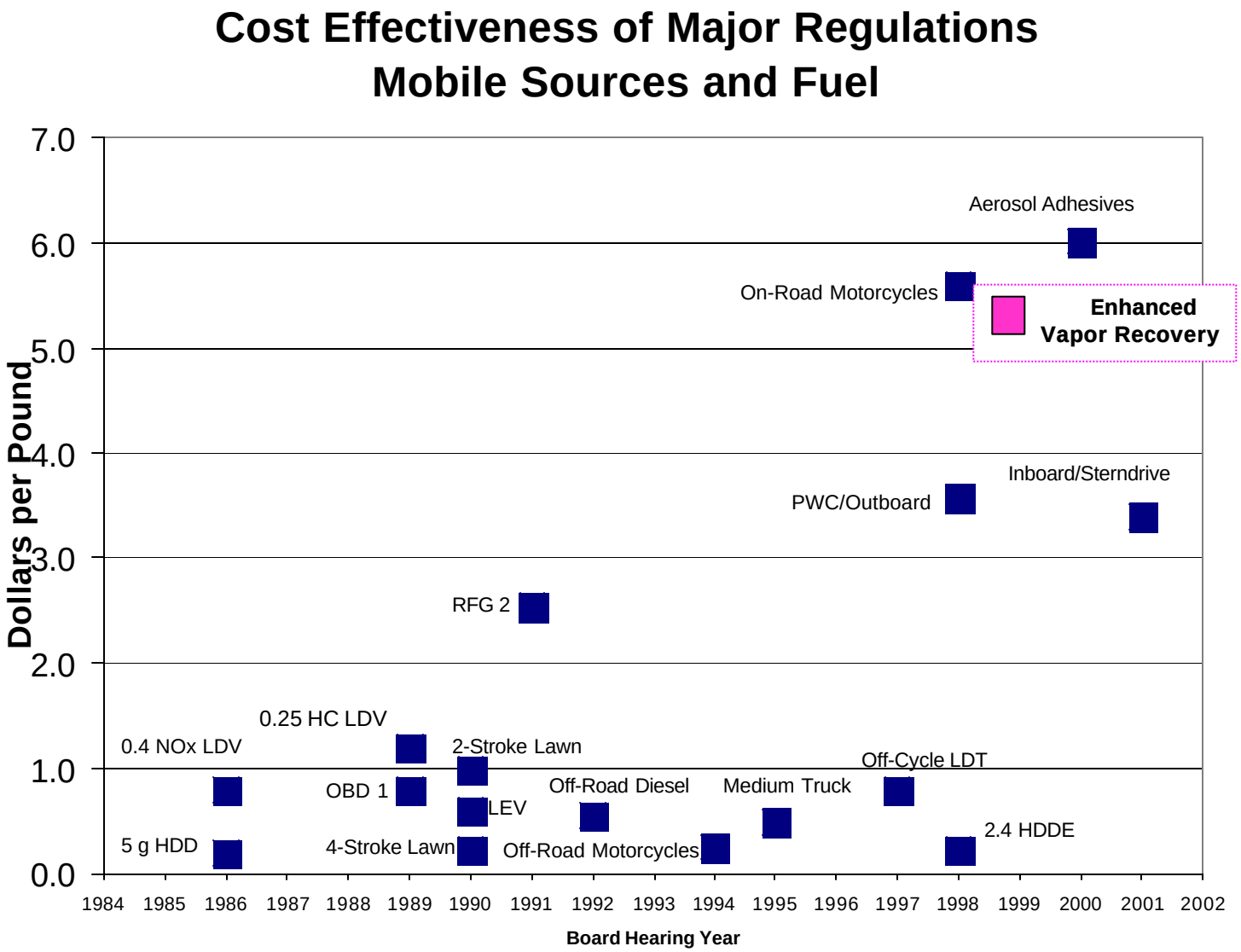


Table VI-3 shows how the cost-effectiveness values vary depending on GDF gasoline throughput. Eighty percent (80%) of the stations (GDF3, GDF4 and GDF5) account for about 95% of the total state gasoline throughput, which corresponds to 95% of the EVR emission reductions. The higher the gasoline throughput at a station, the easier it is to recover the cost of purchasing EVR equipment as it is assumed all costs are passed on to the customer in the form of higher gasoline prices.

Table VI-3
Updates to EVR Cost-Effectiveness (C.E.) per Model GDF
(includes ISD unless otherwise noted)

GDF Model	GDF 1	GDF 2	GDF 3	GDF 4	GDF 5
Typical throughput gal/mo	13,233	37,500	75,000	150,000	300,000
Throughput range, gal/mo	0-25,000	25,001-50,000	50,000-100,000	100,001-200,000	200,001 and up
% stations	4.7	14.1	45.7	31.3	4.2
EVR em red (tpd)	0.15	1.36	8.82	12.10	3.27
February 2000 Staff Report C.E. ($/lb)	$9.73 w/o ISD	$4.42	$2.41	$1.24	$0.63
Oct 2002 Tech Review C.E. ($/lb)	$30.43 w/o ISD	$10.76	$6.60	$4.26	$2.18

VII. ECONOMIC AND ENVIRONMENTAL IMPACTS

A. Economic Impact of Proposed Amendments

As indicated in Table VII-1 below, all of the revised procedures are used for vapor recovery equipment certification tests, which are conducted by ARB staff. Manufacturers also use these certification procedures in the development of systems and to generate data for certification applications. No additional costs are expected for businesses and individuals to comply with these new regulations. In fact, cost savings associated with nozzle research and development may occur due to the relaxation of the "dripless" standard from one drop to three drops. Equipment manufacturers will also save on certification costs due to proposals to certify by system-type, rather than by complete system for some system components. There will be some increase in certification costs for some systems due to the new test procedures to evaluate component pressure drops, in-station diagnostics, UST pressures, and rigid piping. Test equipment costs for the procedures that are conducted by ARB staff are estimated at $4,000. Manufacturers seeking system certification may incur test-equipment costs up to $6,000 for continuous pressure monitoring.

Seven of the proposed procedures may also be used by contractors or district inspectors for compliance testing. The modifications are not expected to result in any cost impacts for compliance testers for revisions to existing procedures. Testers desiring to conduct new test procedure TP-201.2G are expected to incur test equipment costs of about $100.

Service stations with annual gasoline throughputs less than 160,000 gallons are currently exempt from the requirement to install in-station diagnostics based on cost-effectiveness. The proposal to increase the exemption throughput to 300,000 gallons/year will result in cost savings of approximately $10,000 per station in equipment costs for those stations qualifying for the exemption.

Existing service stations, that is, installed GDFs, in districts that are in attainment with the state ozone standard are proposed to be exempt from EVR requirements, except for ORVR compatibility. Costs to upgrade existing systems to be ORVR compatible will vary depending on system type, but are estimated to range from $0 for systems already ORVR compatible to $12,000 for systems adding a vapor processor. Fixed cost savings for the exemption for the other EVR standards are estimated to range from $25,000 to $50,000 depending on system type.

Table VII-1
Summary of Cost Impacts for Proposed Vapor Recovery Procedures

Procedure	Certification, Compliance or Both	Proposed Changes	Cost Impacts
D-200	NA	Definitions	none
CP-201	Cert	Certification standards, certification process and EVR exemptions	Cost savings for equipment manufacturers, small throughput stations
TP-201.1	Both	Add meter option	none
TP-201.1B	Both	Clarify equipment and test procedure	none
TP-201.1C	Both	Clarify equipment and test procedure	none
TP-201.1D	Both	Clarify equipment and test procedure	none
TP-201.1E	Both	Replace TP-201.2B App.1 Add flowmeter option	$400 for test equipment for cert only
TP-201.2	Cert	Correct equation error	none
TP-201.2B	Both	Clarifications	none
TP-201.2D	Cert	Make test more like typical customer fueling	none
TP-201.2F	Cert	Leak test same as TP-201.3, standardize fugitives calculation	none
TP-201.2G	Both	New procedure to measure bend radius	$100 test equipment
TP-201.2I	Cert	New method to evaluate ISD using existing TPs	none
TP-201.2J	Cert	New method to measure component pressure drop	$3,000 test equipment
TP-201.7	Cert	New method for continuous pressure monitoring	$6,000 test equipment

Environmental Impacts of Proposed Amendments

The proposed amendments are not expected to significantly affect the emissions reductions attributed to the EVR program. The relaxation of the "dripless" standard from one drop to three drops is not expected to result in a net emission increase. This is because refueling drops are included in the spillage standard of 0.24 lbs/1000 gallons dispensed. Any increase in the volume of drops must be offset by other spillage emissions.

Extending the final compliance date for existing stations from 2005 to 2007 for three of the nozzle standards could allow some existing nozzles to be in use longer than allowed under the current schedule. However, nozzles are normally replaced every one to two years, and all replacement nozzles after April 2004 must meet EVR standards. Thus, it is likely that all nozzles will be in compliance with EVR standards by no later than 2006.

The EVR exemption for existing stations in ozone attainment areas is expected to result in an emission increase of 0.31 tons/day in 8 districts in Northern California. This is about 1% of the total EVR emission reductions of 25.7 tons/day.

VIII. ALTERNATIVES CONSIDERED

We have considered as an alternative the option of not adopting the proposed vapor recovery amendments. Not adopting the proposed procedures would be detrimental for the following reasons:

A. Without revision, the post-fueling drip standard would not be achievable and no certified nozzles would be available for use after April 2004.

B. Without the new test procedures, some EVR performance standards or specifications cannot be enforced as required under state law.

IX. REFERENCES

1. EVR Technology Review Report, October 2002, Monitoring and Laboratory Division, Air Resources Board (included as Appendix 4)

2. Staff Report: Initial Statement of Reasons for Proposed Amendments to the Vapor Recovery Certification and Test Procedures for Gasoline Loading and Motor Vehicle Gasoline Refueling at Service Stations, February 4, 2000, Air Resources Board

3. January 24, 2002 letter from George Lew, Air Resources Board to vapor recovery equipment manufacturers regarding pressure drop allowance for in-station diagnostics components

4. January 2, 2002 letter from George Lew, Air Resources Board to vapor recovery equipment manufacturers regarding proposed changes to certification of in-station diagnostics systems

5. November 9, 2001 letter from George Lew, Air Resources Board to vapor recovery processor manufacturers regarding feasibility of EVR processor standards

6. November 2, 2001 letter from George Lew, Air Resources Board to vapor recovery nozzle manufacturers regarding feasibility of spillage, post-fueling drips and nozzle spitting standards

Appendix 1

Proposed Amendments to California Code of Regulations

Appendix 2

Proposed Amendments of Vapor System Certification and Test Procedures

Appendix 3

Vapor Recovery Health and Safety Code Statutes

Appendix 4

EVR Technology Review Report