APPENDIX J

Public Process for Development of the Proposed Amendments

Air Resources Board

Mary D. Nichols, Chairman
1001 I Street • P.O. Box 2815
Sacramento, California 95812 • www.arb.ca.gov

Matthew Rodriquez
Secretary for
Environmental Protection

Edmund G. Brown Jr.
Governor

October 9, 2012

To All Vapor Recovery Stakeholders:

The California Air Resources Board (ARB or Board) staff is holding three public workshops to discuss a draft regulatory proposal for amendments to the Enhanced Vapor Recovery (EVR) program for Gasoline Dispensing Facilities (GDFs).

The time and place for the workshops are as follows:

Northern California	
Date:	Wednesday, October 31, 2012
Time:	10:00 a.m. to 3:00 p.m.
Place:	Cal/EPA Headquarters Byron Sher Auditorium, 2nd Floor 1001 I Street Sacramento, CA 95814

Southern California	
Date:	Friday, November 2, 2012
Time:	10:00 a.m. to 3:00 p.m.
Place	South Coast AQMD Headquarters Conference Room GB 21865 Copley Drive Diamond Bar, CA, 91765

Central California	
Date:	Wednesday, November 7, 2012
Time:	10:00 a.m. to 3:00 p.m.
Place:	San Joaquin Valley APCD Headquarters Governing Board Room 1990 East Gettysburg Fresno, CA 93726

Meeting locations are accessible to persons with disabilities. If special accommodations or language needs are required, please contact Elizabeth Mongar or Carolina Zavala at (916) 327-0900 as soon as possible. TTY/TDD Speech-to-Speech users may dial 7-1-1 for the California Relay Service.

TELECONFERENCE:
To participate via teleconference, dial toll free 877-918-6704, enter participant passcode 6525287 followed by the # sign. The teleconference will be a listen only.

BACKGROUND:
On May 16, 2012, the U.S Environmental Protection Agency (EPA) determined that on-board refueling vapor recovery (ORVR) equipped vehicles will be in widespread use by May 16, 2012. Based on this determination, EPA will now allow states to consider waiving Stage II[1] vapor recovery requirements. Despite progress in achieving cleaner air, California still needs additional reductions in air pollution. Removal of Phase II EVR would result in a significant increase in emissions. At this time, ARB cannot identify how to make up for the lost emission reductions that would result from the removal of Phase II vapor recovery systems. In addition, removal of Phase II would increase

[1] Federal Stage II is less stringent than California Phase II EVR.

benzene exposure to citizens refueling older, non ORVR equipped vehicles, and those living near service stations. For these reasons, Phase II will not be removed in California for the foreseeable future. However, in light of the EPA determination and increased ORVR penetration, ARB recognizes the need to thoroughly review the EVR program and identify areas for improvements. Implementation of some improvements will result in lower costs.

TOPICS:
All three workshops will cover the following topics:

- Discussion of the EPA ORVR Widespread Use Determination
- Rationale for ARB's Continued Use of Phase II EVR
- Staff Proposals to Reduce EVR Operation and Maintenance Costs
- Staff Proposals for Technical Improvements to EVR
- Staff Proposals to Revise and Streamline Field Test Procedures
- Proposed Regulatory Solution to Provide Relief for In-Station Diagnostics (ISD) Overpressure Alarms

WORKSHOP FORMAT:
This workshop will include a morning presentation covering the above topics. At the conclusion of each topic, there will be an opportunity to ask questions and provide feedback. If necessary, ARB staff will be available in the afternoon to respond to additional questions and to solicit stakeholder feedback. In addition, a more detailed presentation pertaining to the ISD overpressure issue will be provided in the afternoon.

Copies of the agenda and parking information for all three locations will be posted on the *Future of Vapor Recovery Rulemaking* web page at http://www.arb.ca.gov/vapor/vapor.htm by October 23, 2012. The workshop presentation will be posted at the above web page sometime before the first workshop scheduled for October 31st.

If you have technical questions regarding these workshops, please contact Scott Bacon at (916) 322 8949 or via email at sbacon@arb.ca.gov. For general non-technical questions, please call (916) 327-0900.

Sincerely,

George Lew, Chief
Engineering and Certification Branch
Monitoring and Laboratory Division

cc: See next page.

cc: Danny Luong
South Coast Air Quality Management District

Dillon Collins
San Joaquin Valley Air Pollution Control District

California Environmental Protection Agency
Air Resources Board

The Future of EVR (Enhanced Vapor Recovery)

Conceptual Workshops
October 31, 2012 - Sacramento
November 2, 2012 - Diamond Bar
November 7, 2012 - Fresno

Presentation Outline

1. Vapor Recovery Program Background
2. ARB Response to U.S. EPA Widespread Use Determination
3. EVR Program Improvements
4. Project Timeline / Contact Information

VAPOR RECOVERY PROGRAM BACKGROUND

Emissions Reductions Vapor Recovery Program

- Vapor recovery is a major control strategy for clean air
- Provides more hydrocarbon emission reductions than low emission vehicles and cleaner burning gasoline
- Contributes towards meeting ozone standards
- Reduces exposure to benzene, a known carcinogen

ORVR/Phase II Background

- Two Control Systems Targeting the Same Emission Source (vapor displaced during vehicle fueling)
  - Phase II/Stage II[1] Vapor Recovery, gasoline dispensing facility (GDF) based, achieved by coaxial nozzles, coaxial hoses, dedicated vapor return piping
  - Onboard Refueling Vapor Recovery (ORVR), vehicle based, achieved by liquid sealed fill pipe, on board carbon canister

[1] Federal Stage II does not include many of the controls required by California Phase II Enhanced Vapor Recovery

ORVR Widespread Use Determination

- U.S. EPA determined that widespread use occurred on May 16, 2012, when over 75% of gasoline is dispensed to ORVR vehicles
- Allows states to consider removing Stage II requirements when revising State Implementation Plans if doing so would not interfere with applicable Clean Air Act requirements
- U.S. EPA issued guidance for Stage II removal
- ARB staff determined that guidance do not apply to California

CA Will Retain Phase II EVR

- Most of CA is nonattainment for ozone
  - Phase II EVR reduces emissions by 31 tons/day in 2014; 9 tons/day in 2028
- Benzene Air Toxic Control Measure
  - ARB is mandated to mitigate risk of benzene exposure
  - Current ATCM requires Phase II at retail GDFs
  - Removing Phase II would likely increase risk
  - Environmental justice implications

Rationale for Continued Use of Phase II

CA Phase II EVR achieves more emission reductions than Federal Stage II

Program Components	EVR Phase II In California	Stage II in other States
Control of Vapors Displaced during Vehicle Fueling	included	included
ORVR Compatibility/Pressure Management	included	none (except Texas & Missouri)
In-Station Diagnostics (ISD)	included	none
Nozzle Liquid Retention, Dripless, Spillage	included	none
Hose Permeation	Approved Sept 2011	none

EVR PROGRAM IMPROVEMENTS

EVR Program Improvements
Overview

On September 8, 2011, ARB's formal response to U.S. EPA's widespread use determination included the following statement:

"ARB staff plans to work in cooperation with local air quality management districts to identify ways that additional benefits and reductions in operating costs can be realized."

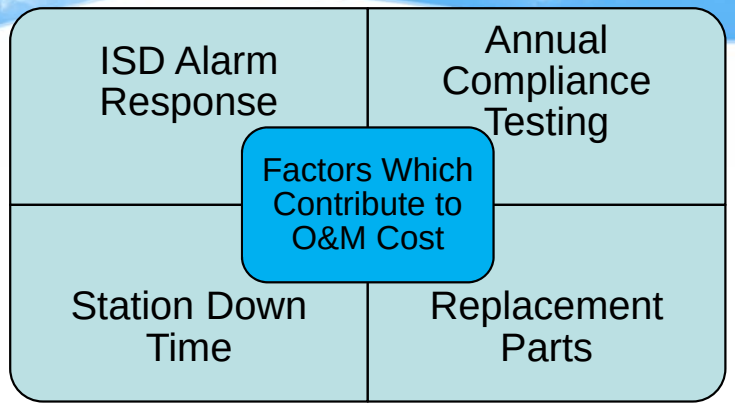
EVR Program Improvements
Overview

- Staff has begun a comprehensive review of the EVR program with a focus on:
  - Reducing EVR related operation and maintenance costs
  - Identifying opportunities for technical improvement
  - Reducing GDF emissions where it is practical and cost-effective

EVR Program Improvements

1. Operation and Maintenance (O & M) Cost Reduction Measures
2. ISD Over Pressure Alarm Solution
3. ORVR Fleet Nozzle
4. Revised Test Procedures
5. Reduced EVR Nozzle Spillage Standard

EVR Related Operational & Maintenance Costs



O&M Cost Reduction Measures

Thirteen cost reduction measures have been identified/suggested by ARB and Air Districts

- Ease financial burden of EVR implementation, yet maintain compliance
- Apply to GDF equipped with both UST and AST
- Require regulatory and administrative changes by ARB and Air Districts

O&M Cost Reduction Measures

#	Tank Type	Concept
1	UST	Revise ISD alarm response policy to be less prescriptive, less complex
2	UST	Provide long term relief from ISD overpressure alarms
3	UST	Add compliance testing feature / mode to ISD system
4	UST	Enable “Mixing and Matching” of Phase II EVR system components

O&M Cost Reduction Measures (continued)

#	Tank Type	Concept
5	UST	Develop “streamlined repair verification” function for ISD system
6	UST	Revise sequencing of ISD flow meter operability test procedure
7	AST	Enable alternate Phase I EVR installation configurations for existing AST, deem some configurations exempt due to incompatibility

O&M Cost Reduction Measures (continued)

#	Tank Type	Concept
8	UST & AST	Provide mechanism to track / monitor equipment failures via web based component complaint form[1]
9	UST & AST	Conduct random audits of vapor recovery components at equipment distributors and GDFs, work with manufacturers on resolving issues found during the audits
10	UST & AST	Work with equipment manufacturers in standardizing requirements for their contractor training programs

[1] http://www.arb.ca.gov/vapor/in_use/complaint_form.htm

O&M Cost Reduction Measures (continued)

#	Tank Type	Concept
11	UST	Issue bulletin regarding decommissioning of ISD when GDF throughput drops below 600,000 gallons per year
12	UST & AST	Certify nozzles for GDFs serving ORVR fleets
13	UST & AST	Drain valve optional for Phase I EVR system spill containers

EVR Program Improvements

1. Operation and Maintenance (O & M) Cost Reduction Measures
2. ISD Over Pressure Alarm Solution
3. ORVR Fleet Nozzle
4. Revised Test Procedures
5. Reduced EVR Nozzle Spillage Standard

ISD Over Pressure Alarm Solution

- Numerous ISD over pressure (OP) alarms occur during November through February
  - Significant cost to respond to alarms
  - Most alarms are not due to equipment problems
  - No emissions reduction from most alarm response
- Advisory 405-B, an interim measure to provide relief for winter season OP alarms
  - A more permanent solution is needed

ISD Over Pressure Alarm Solution

- Conclusions from ARB study:
  - Most alarms occur between November and February are associated with high volatility fuel
  - Not all GDFs experience OP alarms
  - Current alarm criteria do not reliably identify equipment problems
  - Further control of pressure to meet current alarm criteria would not be cost effective or significantly improve overall control for GDFs

ISD Over Pressure Alarm Solution

- A new alarm criteria is being considered which includes the following:
  - Based on pressure-driven emission factor
  - Would require new ISD software
  - Identifies when efficiency loss approaches 5%
  - Identifies equipment failures and eliminates nuisance alarms
- New ISD software would be optional for existing GDFs and required for new GDFs; Advisory 405-B would be rescinded

EVR Program Improvements

1. Operation and Maintenance (O & M) Cost Reduction Measures
2. ISD Over Pressure Alarm Solution
3. ORVR Fleet Nozzle
4. Revised Test Procedures
5. Reduced EVR Nozzle Spillage Standard

ORVR Fleet Nozzles

- Many Air Districts allow ORVR fleet GDFs to operate without Phase II EVR
  - 2/20/2008 Letter from ARB to Air Districts
  - Consistent with U.S. EPA Memo
- Typically applied to car rental, corporate or government fleet fueling facilities
- Approximately 330 facilities in CA
  - About half use EVR nozzles, about half use conventional

ORVR Fleet Nozzles

- Incorporates Phase II EVR standards for spillage, drips, liquid retention, and spitting
- Nozzle spitting criteria would likely necessitate some form of interlock
  - Nozzle boot may be needed for interlock
- Costs are under review at this time
  - More than current conventional nozzles, less than EVR nozzles

EVR Program Improvements

1. Operation and Maintenance (O & M) Cost Reduction Measures
2. ISD Over Pressure Alarm Solution
3. ORVR Fleet Nozzle
4. Revised Test Procedures
5. Reduced EVR Nozzle Spillage Standard

Revised Test Procedures

Overview

- Establish a workgroup with members from ARB, Air Districts, and Testing Companies
- Review all EVR test procedures, update as needed to meet the following 5 criteria:
  - Relevance, Cost, Emissions, Consistency, Accuracy
- Involves changes to Executive Orders and regulations

Revised Test Procedures

- Ideas being considered include:
  - Look for redundant or outdated tests
  - Develop abbreviated and full versions of tests
    - Abbreviated versions used if certain conditions are met
    - Full versions used when conditions are not met or results of abbreviated version are inconclusive
  - Utilize ISD sensors and data where appropriate
  - Establish guidelines for test sequencing

EVR Program Improvements

1. Operation and Maintenance (O & M) Cost Reduction Measures
2. ISD Over Pressure Alarm Solution
3. ORVR Fleet Nozzle
4. Revised Test Procedures
5. Reduced EVR Nozzle Spillage Standard

Reduced EVR Nozzle Spillage Standard

- All EVR nozzles performed well below the current 0.24 lbs./1000 gallon standard during certification testing
- A lower spillage standard allows us to claim the reductions we have already achieved
- Proposal will be 0.10 lbs./1000 gal
- All currently certified EVR nozzles comply with the proposed standard

PROJECT TIMELINE & CONTACT INFORMATION

Project Timeline

- Oct/Nov 2012 – Conceptual Workshop
- February 2013 – Detailed Workshop
- April/May 2013 – Begin Formal Comment Period
- July/August 2013 – Rulemaking Board Hearing

Comments

- We are looking for your comments or suggestions for additional program improvement measures.
- E-mail: sbacon@arb.ca.gov
- Mail: Air Resources Board
  Monitoring and Laboratory Division
  Attention: Scott Bacon
  P.O. Box 2815
  Sacramento, CA 95812-2815
- Please submit comments or suggestions by November 26, 2012

Contact Information

Project Component	Staff	Contact Info
Coordinator	Scott Bacon	(916) 322-8949 sbacon@arb.ca.gov
O & M Cost Reduction	Lou Dinkler	(916) 324-9487 ldinkler@arb.ca.gov
CP/TP Revisions, Nozzle Spillage	Pat Bennett	(916) 322-8959 pbennett@arb.ca.gov
ORVR Fleet Nozzles	Paul Marzilli	(916) 445-7431 pmarzill@arb.ca.gov
ISD Over Pressure	John Marconi	(916) 323-6752 jmarconi@arb.ca.gov
Emission Inventory	Angus Macpherson	(916) 445-4686 amacpher@arb.ca.gov

California Environmental Protection Agency
Air Resources Board

Regulatory Solution to Provide Relief from In-Station Diagnostics (ISD) Over Pressure (OP) Alarms

Conceptual Workshops
October 31, 2012 - Sacramento
November 2, 2012 - Diamond Bar
November 7, 2012 - Fresno

Presentation Outline

- Section 1: Background
- Section 2: OP Study Description
- Section 3: OP Study Conclusions
- Section 4: Proposed ISD Standard

Background

EVR/ISD Implementation

- Phase II EVR including ISD fully implemented in 2010.
- Approximately 10,000 GDFs were upgraded to EVR with approximately 8,000 GDFs upgrading to EVR with ISD.
- GDFs with an annual throughput greater than 600,000 gallons are subject to ISD.

ISD Performance Assessments

- ISD continuously monitors the performance of the vapor recovery system (VRS) and alerts the operator when failures are detected.
  - One of the assessments performed by ISD involves continuous monitoring of pressure in the headspace of the underground storage tank.
  - "Over Pressure" means that one of the ISD thresholds illustrated in the next slide have been exceeded.

Current ISD OP Alarm Criteria

Assessment Period	Current ISD OP Alarm Criteria
Weekly Assessment	5% of pressure data above 1.5"WC (CARB CP-201 Section 9.2.4).
Monthly Assessment	25% of pressure data above 0.5"WC (CARB CP-201 Section 9.2.4).
Daily Assessment (Processors Only)	Daily assessment to identify vapor processor malfunction (CARB CP-201 Section 9.2.5).

ISD OP Alarm Problem Defined

- A situation in which the equipment inspection, testing, and troubleshooting conducted in response to an ISD OP alarm fails to identify any equipment malfunction.

Relief from OP Alarms

Advisory	Issued	Expiration
405	10/6/09	9/1/10
405-A	11/8/10	4/1/11
405-B	10/10/11	Remains in effect until rescinded

OP Study Description

OP Study

- Purpose was to determine cause of OP alarms during the winter fuel season and to quantify emissions caused by positive pressure.
  - Duration of Study: November 2009 - March 2012
  - Six GDFs located in the Sacramento area selected to obtain variability in throughput, operating hours, VRS, and ISD system.
  - ISD alarm history and service records collected from:
    - GDFs located in Sacramento and San Diego region
    - Major Oil companies

OP Study Conclusions

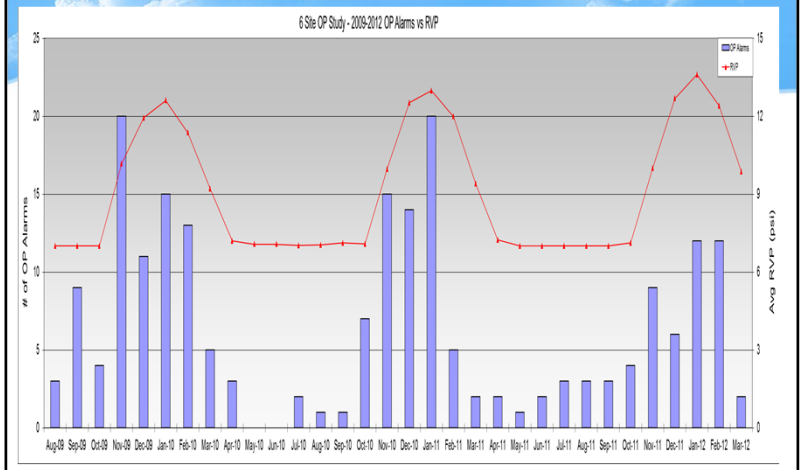
Conclusion #1 - No Trouble Found (NTF) in Most OP Alarm Responses

- During the winter, about 90% of OP alarms are not related to a vapor recovery equipment failure or malfunction.
- During the summer, about 70% of OP alarms are not related to a vapor recovery equipment failure or malfunction.

Conclusion #2 – Effect of Winter Fuel

- OP alarms increase significantly in the winter because of high Reid Vapor Pressure (RVP) fuel.
- OP alarms occur during periods of low gasoline dispensing rates and/or extended shut downs.

Conclusion #2 – Effect of Winter Fuel



Conclusion #3 – Stringency of ISD Performance Standards

- The ISD pressure profile standards can be more stringent than the pressure profile standard required for VRS certification.
- With the exception of ISD monitoring for OP, the ISD thresholds are less stringent than the standards for VRS certification.

Conclusion #4 - Emissions Associated with Positive Pressure

- Annual averaged statewide emissions associated with positive pressure from certified EVR systems do not exceed 1 ton per day.

Conclusion #5 – Effect of Leaks on Over Pressure Alarms

- Systems with poor static pressure performance have a lower tendency to experience over pressure alarms.

Proposed ISD Standard

Proposed ISD Standard

- New ISD alarm criteria based on an estimate of emission factors (winter and summer) for pressure driven emission sources.
- New ISD alarm criteria for processor performance.
- New PV valve performance standard that allows vent line emissions to be quantified.

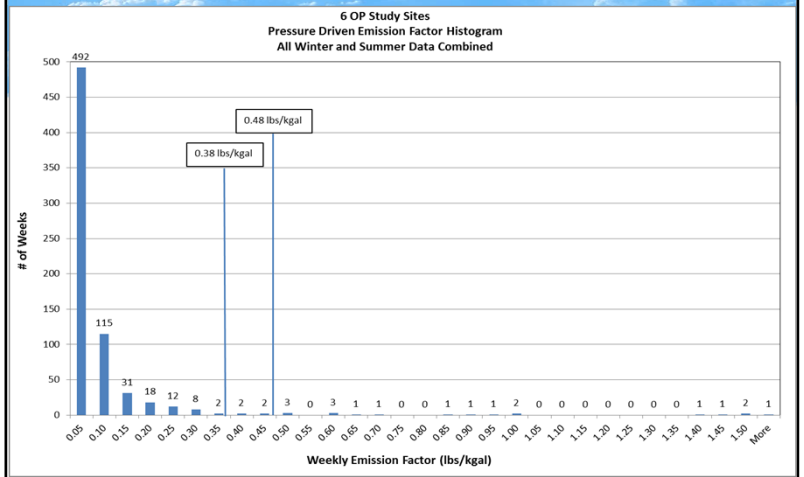
Benefits of Proposed ISD Standard

- OP alarms more likely to identify an equipment malfunction.
- >85% reduction in OP alarms.
- Reduction in OP alarm response cost.

Current vs Proposed

Assessment Period	Current ISD OP Alarm Criteria	Proposed ISD OP Alarm Criteria
Weekly Assessment	5% of pressure data above 1.5"WC (CARB CP-201 Section 9.2.4).	Pressure driven emission factor indicates 5% efficiency loss.
Monthly Assessment	25% of pressure data above 0.5"WC (CARB CP-201 Section 9.2.4).	Eliminate monthly ISD alarm criteria.
Daily Assessment (Processors Only)	Daily assessment to identify vapor processor malfunction (CARB CP-201 Section 9.2.5).	Daily assessment to identify vapor processor malfunction. Include requirement that UST pressure may not be the sole indicator of processor performance.

Proposed Alarm Criteria



Comparison of Proposal and Existing ISD Performance Standards

Period	# of Weeks of Data	# of OP Alarms if 5% of the weekly pressure data exceeds 1.3"WC	# of OP Alarms if the weekly Emission Factor exceeds 0.48 lbs/kgal in Winter and 0.38 lbs/kgal in Summer	% Decrease in OP Alarms	% of OP Alarms with Equipment Problem when EF exceeds 0.48 lbs/kgal in Winter and 0.38 lbs/kgal in Summer
Winter (Nov 09 - Mar 10) - 6 Sites	112	31	3	90.3%	33%
Winter (Nov 10 - Mar 11) - 6 Sites	118	43	8	81.4%	100%
Winter (Nov 11 - Mar 12) - 6 Sites	129	33	4	87.9%	100%
Summer (Apr 10 - Oct 10) - 6 Sites	168	5	0	100.0%	N/A
Summer (Apr 11 - Oct 11) - 6 Sites	173	16	2	87.5%	100%
Overall - 6 Sites (Nov 09 - Mar 12)	700	128	17	86.7%	88%

*2 out of 3 alarms during Nov 09 – Mar 10 were due to extended 36 hour holiday shutdown.

Implementation of Proposal

- Existing ISD Installations – Optional to upgrade to new emission based ISD software.
- New ISD Installations – Required to install new emission based ISD software.
- After new emission based software is available, Advisory 405-B will be rescinded and all OP alarms will require a contractor response.

Estimated Costs

- Upgrade includes:
  - ISD Software and Installation
  - PV Valve and Installation
  - CUPA Permit Fees
- Estimated Costs Range from $2000 - $4000.

ARB Contact Information

- John Marconi
  Vapor Recovery In-Use Section
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  jmarconi@arb.ca.gov
- Gurj Bains
  Testing and Certification Section
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  gbains@arb.ca.gov

Matt Rodriguez
Secretary for
Environmental Protection

Air Resources Board

Mary D. Nichols, Chairman
1001 I Street • P.O. Box 2815
Sacramento, California 95812 • www.arb.ca.gov

Edmund G. Brown Jr.
Governor

April 8, 2013

To All Vapor Recovery Stakeholders:

Dear Sir or Madam:

The California Air Resources Board (ARB) staff is holding a public workshop to discuss a draft regulatory proposal for amendments to the Enhanced Vapor Recovery (EVR) certification and test procedures for gasoline dispensing facilities (GDFs).

The time and place for the workshop are as follows:

DATE: Tuesday, April 23, 2013
TIME: 2:00 p.m. to 4:00 p.m. PDT.
PLACE: Cal/EPA Headquarters
Sierra Hearing Room, 2nd Floor
1001 I Street
Sacramento, CA 95814

TELECONFERENCE: To listen in, call 888-566-5785 at the workshop start time.
Enter passcode 1751063 when prompted.

This workshop will cover the following proposals, which are intended to promote statewide consistency and address technical issues with certain existing test procedures used during vapor recovery equipment certification:

- Revise the test procedure used to determine emission factor for standing loss control for aboveground storage tanks.
- Revise the test procedure used to determine volumetric efficiency for Phase I EVR systems used on aboveground storage tanks.
- Propose standards for conventional nozzles used at GDFs serving fleets of vehicles equipped with onboard refueling vapor recovery (ORVR) systems.
- Codify existing procedure for certifying and testing field delivery tanks (cargo tanks).
- Propose minor administrative and editorial changes to vapor recovery Certification Procedures, Test Procedures, and Definitions.

The workshop will consist of a presentation by staff on the proposed regulation, followed by a question and answer period. Copies of the draft regulatory language and supporting documents, and workshop agenda will be posted on the 2013 EVR Rulemaking web page at http://www.arb.ca.gov/vapor/rulemaking.htm by April 15, 2013.

The workshop location is accessible to persons with disabilities. If you have special accommodation or language needs, please contact Carolina Zavala at (916) 327-0900 as soon as possible. TTY/TDD Speech-to-Speech users may dial 7-1-1 for the California Relay Service.

If you cannot attend the workshop and have technical questions regarding the content that will be discussed, please contact Scott Bacon at (916) 322-8949 or via email at sbacon@arb.ca.gov. If you have difficulties in accessing the conference call on the day of the workshop, please call (916) 327-0900.

Sincerely,

George Lew

George Lew, Chief
Engineering and Certification Branch
Monitoring and Laboratory Division

California Environmental Protection Agency
Air Resources Board

Workshop For 2013 Vapor Recovery Rulemaking

Enhanced Vapor Recovery (EVR)
and
Gasoline Cargo Tanks

April 23, 2013 - Sacramento

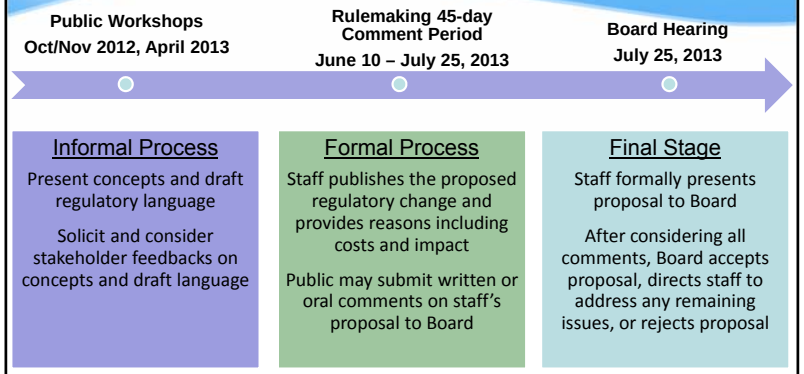
Presentation Outline

1. Purpose / Context of Today's Workshop
2. 2013 EVR Regulatory Proposal
   - Enhanced Conventional (ECO) Nozzles for On-Board Refueling Vapor Recovery (ORVR) Fleet Fueling Facilities
   - Aboveground Storage Tank (AST) Certification Test Procedures
   - Cargo Tank Certification
3. Questions, Contact Information

Purpose of Workshop

- Inform interested parties about proposed changes to vapor recovery program
- Solicit feedback on proposed changes
- Our Goal: Identify and resolve any issues before we present these amendments to our Board for adoption
- Board Hearing scheduled for July 2013

Public Participation



Vapor Recovery Program

- Vapor recovery program has been in place for over 35 years in California
- Staff is focused on improving the vapor recovery program by:
  1. Reducing operation and maintenance costs
  2. Implementing technical improvements
  3. Reducing emissions where practical and cost-effective

Oct / Nov 2012 Workshops

- Short-term, mid-term, and long-term concepts for program improvement were presented.
- Some of the short-term measures are already being implemented:
  - ARB staff audit of manufacturer training
  - Mix & match of balance EVR components
  - Informational Bulletin issued regarding removal of In-Station Diagnostics (ISD) on stations under 600,000 gal. annual throughput
  - Online vapor recovery equipment complaint form

The Next Steps…

- Mid-term items are in today's proposal
- Long-term items in late 2014 will include:
  - ISD overpressure alarm solution
    - Staff is revising proposal based on new data
    - Advisory 405-B remains in place
  - ISD software enhancements that will improve diagnostic capability and streamline or reduce compliance testing
  - Field test procedure improvements

2013 VAPOR RECOVERY REGULATORY PROPOSAL

2013 Regulatory Proposal

- Enhanced Vapor Recovery (EVR) Proposal
  - Adopt new standards for ECO Nozzles to be used at ORVR Fleet Fueling Facilities
  - Revise TP 201.1, Volumetric Efficiency of Phase I EVR
  - Revise TP 206.2, Emission Factor of Standing Loss Control Systems with Processors for ASTs
- Cargo Tank Proposal
  - Revise Cargo Tank Certification and Test Procedures

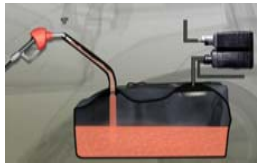
Enhanced Conventional Nozzles (ECO Nozzles)

For Use at On-Board Refueling Vapor Recovery (ORVR) Fleet Fueling Facilities

ORVR / Phase II Background

Two Control Systems Targeting the Same Emission Source: vapor displaced during vehicle fueling

1. Phase II Vapor Recovery: gasoline dispensing facility (GDF) based, vapor returned to storage tank, uses coaxial nozzles and hoses, vapor return piping
2. Onboard Refueling Vapor Recovery (ORVR): vehicle based, vapor is captured in a carbon canister on the vehicle and later burned, no vapor for Phase II system to recover, federal requirement for vehicles after 1998

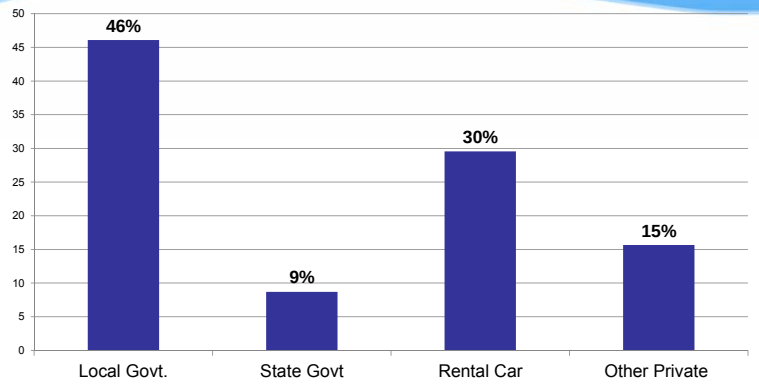


ORVR Fleet Facilities

- Many Air Districts allow ORVR fleet GDFs to operate without Phase II Vapor Recovery
  - 2/20/2008 Letter from ARB to Air Districts
  - Consistent with U.S. EPA Memo
- Requires a fleet of 90% to 100% ORVR vehicles, depending on the district rule
- Applicable to non-retail facilities only
  - Car rental, government, or corporate fleets

ORVR Fleet Facility Ownership

Ownership Percentage
Based on data Provided by South Coast AQMD



ECO Nozzles

- Since these facilities are exempt from Phase II Enhanced Vapor Recovery (EVR), what standards apply?
  - Conventional nozzle (no vapor return path)
  - Phase II EVR nozzle with vapor path capped
- New standards would provide statewide consistency, emission reductions, and cost savings

ECO Nozzle Standards

Performance Type	Requirement	Test Procedure
Nozzle Spillage	≤ 0.24 pounds/1,000 gallons	TP-201.2C
Post-Refueling Drips	≤ 3 Drops per Refueling	TP-201.2D
Liquid Retention	≤ 100 mL per 1,000 gallons	TP-201.2E
Nozzle Spitting	≤ 1.0 mL / nozzle / fueling	TP-201.2E

Comparison of Nozzle Controls

Nozzle Type

Vehicle Type	Phase II EVR Nozzle	Conventional Nozzle	ECO Nozzle
ORVR	Liquid and Vapor Controls	Vapor Controls	Liquid and Vapor Controls
Non-ORVR	Liquid and Vapor Controls	No Liquid or Vapor Controls	Liquid Controls

ECO Nozzle

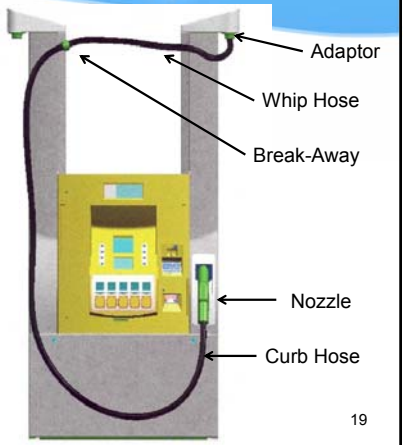
- Incorporates relevant Phase II EVR standards and specifications for liquid
- Insertion interlock is required to meet spitting standard
- New nozzle will cost more than current conventional nozzle but less than EVR nozzle

Current ORVR Fleet Fueling Data

- 322 Facilities Statewide
  - 145 using EVR nozzles and hardware
  - 177 using uncertified conventional nozzles and hardware
- Average of 3 nozzles per facility
  - 435 EVR, 531 Conventional, 966 Total
- Average facility throughput of 19,500 gallons per month

Upgrading to ECO Nozzles

- "Effective Date" would be the day the first ECO Nozzle is certified by ARB
- State Law allows existing equipment to remain in use for four years from the effective date.



ECO Nozzle Costs

Cost of Conversion: Phase II EVR to ECO Nozzle

Component	Phase II EVR Cost	ECO Nozzle Cost	Difference
Adaptor	N/A	$ 21	$ 21
Whip Hose	$ 71	$ 30	$ -41
Breakaway	$ 117	$ 65	$ -52
Curb Hose	$ 172	$ 84	$ -88
Swivel	N/A	$ 29	$ 29
Nozzle	$ 439	$ 305	$ -134
Total	**$ 799**	**$ 534**	**$ -265**

Cost of Conversion: Uncertified Conventional to ECO Nozzle

Component	Uncertified Conventional Cost	ECO Nozzle Cost	Difference
Nozzle	$ 62	$ 305	$ 243
Total	**$ 62**	**$ 305**	**$ 243**

Emission Reductions from ECO Nozzle Proposal

- Spillage reduced from 0.61 to 0.24 pounds/1000 gallons dispensed
  - Applies only to the conventional nozzles that will be upgraded to ECO Nozzles
- Spillage reduced by ~15,400 pounds per year
  - Approximately 2,500 gallons (or $9,500) of fuel

Total Statewide Cost of ECO Nozzle Proposal

- Cost of Upgrading Conventional to ECO Nozzles = $32,000 / year
- Savings from Replacing EVR with ECO Nozzles = $29,000 / year
- Value of Fuel Saved from Reduced Spillage = $9,500 / year
- Total: $32,000 - $29,000 - $9,500 =

  Statewide Savings of ~$6,500 / year

Cost Effectiveness of ECO Nozzle Proposal

- Considering only the facilities upgrading from conventional to ECO Nozzles:

  $1.48 per pound reduction
- Statewide total, taking into account the savings from facilities replacing EVR equipment with ECO Nozzle equipment:

  $-0.39 per pound reduction

REVISE AST CERTIFICATION TEST PROCEDURES

TP-201.1: PHASE I VOLUMETRIC EFFICIENCY

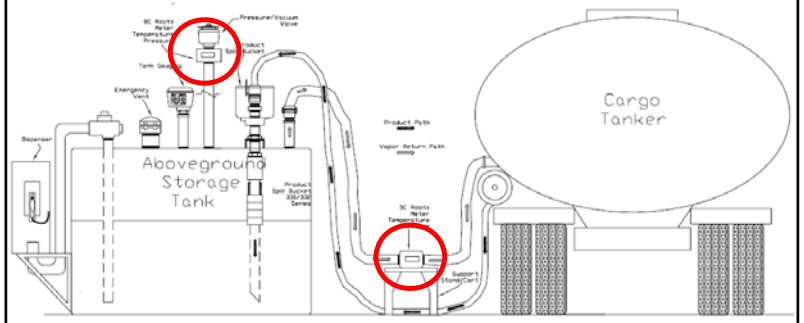
TP-206.2: STANDING LOSS CONTROL (SLC) EMISSION FACTOR

TP-201.1 Amendments

- Phase I EVR systems must achieve a volumetric (fuel transfer) efficiency of ≥ 98%
- Existing Phase I Volumetric Efficiency Test Procedure TP-201.1 was originally developed for UST applications in 1996
- When ARB adopted EVR for AST in 2008, TP-201.1 was incorporated for AST certification
- TP-201.1 not well suited for AST's due to pressure driven vent line emissions which may occur during idle periods

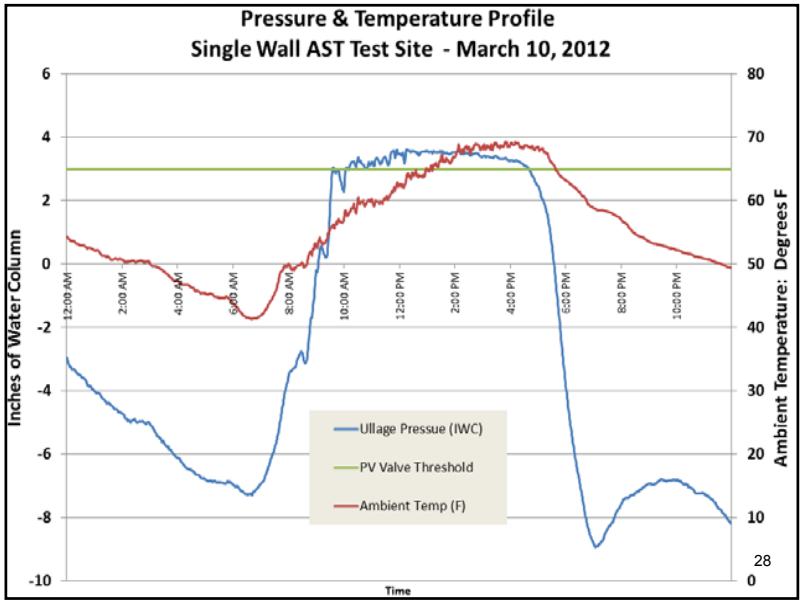
TP-201.1 Amendments
Background

Phase I Efficiency Equation: $E = (100)\,[(V_{returned} - V_{vent}) / (V_{returned})]$



TP-201.1 Amendments
Description of Problem

- Pressure driven vent line emissions commonly occur in single wall AST due to ambient temp increase & fuel evaporation
  - ARB data shows an average vent line flow rate of ~1 cfh
- Vent line flow rate not due to design of Phase I system, yet included in efficiency equation



TP-201.1 Amendments
Method Development Test Site

Parameters Measured:
- Vent Line Flow Rate (cubic feet)
- Ullage Pressure (Inches WC)
- Ambient Temperature (°F)
- Atmospheric Pressure (Inches Hg)
- Via Cell Phone Modem

TP-201.1 Proposed Changes

- For ASTs, remove the post fuel delivery waiting period on vent line emissions
- For ASTs, only measure vent volume emissions during the delivery
- Figures and language updated for ASTs

TP-206.2 Amendments
Background

- TP-206.2 is used by ARB staff during certification testing to measure the emission factor of AST Standing Loss Control (SLC) systems that use a vapor processor
  - Measures mass emitted during periods of no deliveries or dispensing (diurnal emissions)
  - Result is reported as mass emitted per 1000 gallons of tank ullage space
  - Based on TP-201.2, emission factor test for Phase II EVR systems on underground tanks

TP-206.2 Amendments

- TP-201.2 was amended in 2012 to:
  - Accommodate modern sampling equipment
  - Allow staff some flexibility when configuring test equipment in the field
  - Provide instructions for sampling of processor inlet and outlet streams when appropriate
  - Update instrument calibration requirements
- Todays proposal would make similar changes to TP-206.2

TP-206.2 Amendments

- Proposed changes will not alter the performance standard for SLC
- No significant changes in cost or time required for completing testing per TP-206.2
- No SLC system with vapor processor has been submitted to ARB for evaluation
- TP-206.2 is used by ARB staff, so changes should not impact the public

AMENDMENTS TO GASOLINE CARGO TANK VAPOR RECOVERY PROGRAM

Cargo Tank Vapor Recovery Program Amendments

- **CP-204** - *Certification Procedure for Vapor Recovery Systems of Cargo Tanks*
  - ***TP-204.1*** - *Determination of Five Minute Static Pressure Performance of Vapor Recovery Systems of Cargo Tanks*
  - ***TP-204.2*** - *Determination of One Minute Static Pressure Performance of Vapor Recovery Systems of Cargo Tanks*
  - ***TP-204.3*** - *Determination of Leak(s)*

What's Changing?

1. Administrative changes
2. Streamlining the program regarding new components and/or systems
3. Harmonizing the California and Federal requirements for leak decay testing

New Components

1. Must meet the specifications of G-70-10-A, Exhibit II
2. Must meet annual leak rate criteria per CP-204

California and Federal Requirements

- Different test methods required
  - California = TP-204.1
  - Federal = EPA Method 27
- Different Test Timelines

Acceptable Test Methods

Currently Required	Proposed
TP-204.1	TP-204.1, or EPA Method 27 with exceptions

EPA Method 27 with 3 exceptions

1. Must meet all "degassing" or vapor purging restrictions of CP-204
2. Must meet Leak Rate Criteria in CP-204
3. Pressure, Vacuum, and Internal Vapor Valve Tests passed consecutively

Test Timelines

California vs. Federal Test Windows

Program	Current	Proposed
California	60 days prior to expiration	30 days prior to expiration
Federal	30 days prior to expiration	30 days prior to expiration

TP-204.3
Vapor or Liquid leaks

Sniffer test and liquid leak standards during loading operations

- Maintains EPA Method 21 as equivalent with the exception of a probe distance of 2.5cm (approximately 1 inch)

Benefits of Amendments

- Eliminates the certification process for new components
- Harmonizes ARB and Federal Dept. of Transportation (DOT) testing requirements

QUESTIONS AND COMMENTS

Contact Information

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http://www.arb.ca.gov/vapor/rulemaking.htm