

California Environmental Protection Agency



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 II¹ 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

California Environmental Protection Agency

 **Air Resources Board**

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.”

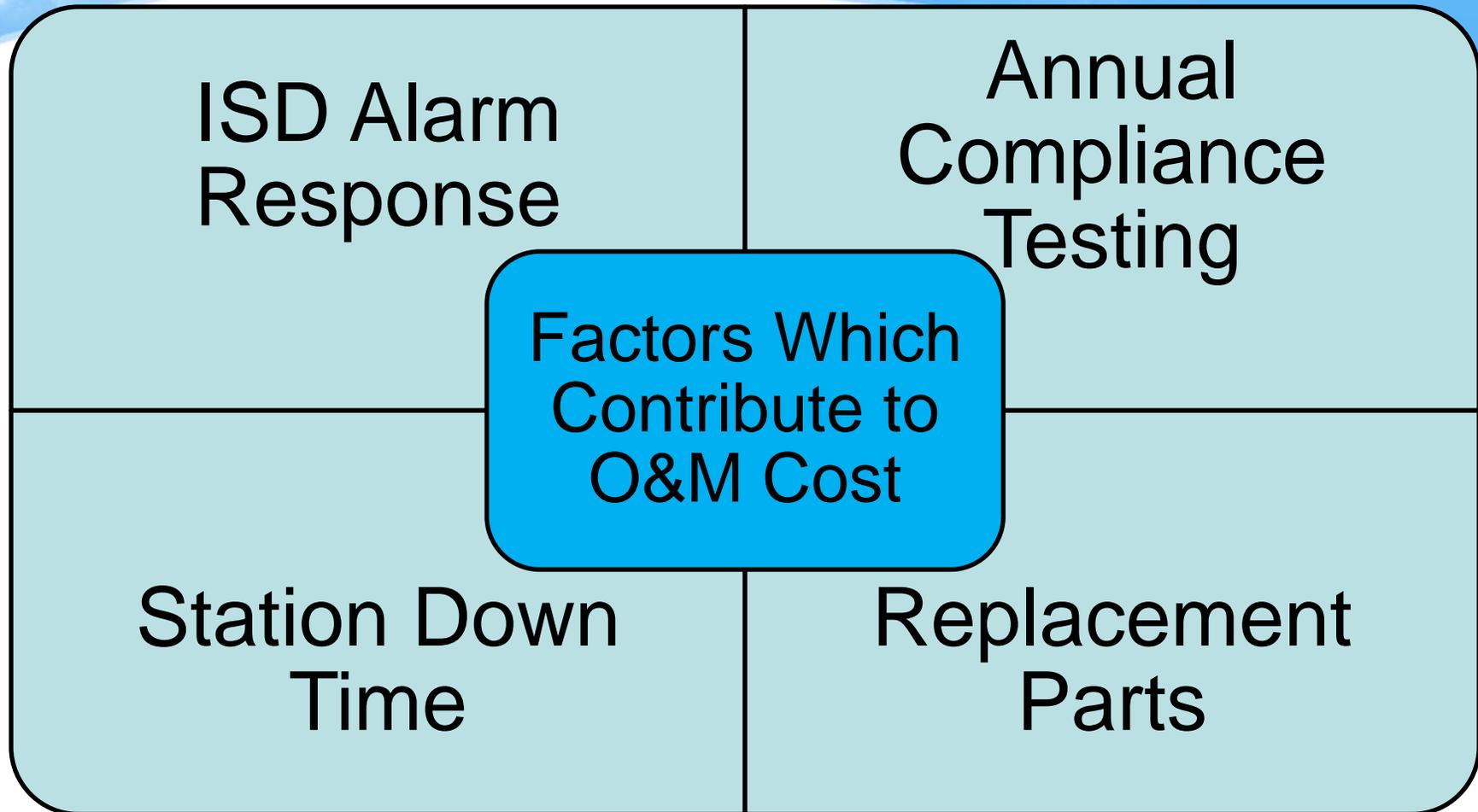
EVR Program Improvements Overview

- 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

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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

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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

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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

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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
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