

Enhanced Vapor Recovery Rulemaking Workshop



July 1, 2010

***California Air Resources Board
(ARB)***

Presentation Outline

1. Workshop Objectives
2. Four-Year Clock
3. Pressure Requirements
4. Low Permeation Hoses
5. Non-Vapor Recovery GDFs
6. Administrative Amendments
7. Projected Timeline

Workshop Objectives

- Present stakeholders with proposed regulatory language for the concepts ARB staff presented during the March 2 workshop
- Solicit stakeholder input on the proposed regulatory language

Presentation Outline

1. Workshop Objectives
2. Four-Year Clock
3. Pressure Requirements
4. Low Permeation Hoses
5. Non-Vapor Recovery Nozzles
6. Administrative Amendments
7. Projected Timeline

Four-Year Clock

Existing Language

- “Stricter procedures or performance standards shall not require the retrofitting, removal, or replacement of any existing system... within four years of the effective date of those procedures or performance standards...”
 - CA Health and Safety Code, §41954(g)(2)
- D-200 includes definitions of “Operative Date” and “Effective Date”

Four-Year Clock (cont.)

- EVR effective dates were amended several times due to certification delays
 - Attempted to keep the Effective Date at least four years after certification of first system
 - Typically done administratively and then followed by rulemaking
 - Process led to some uncertainty as to when the final EVR upgrade deadline would be

Four-Year Clock (cont.)

Proposed Language

Any performance standard or specification with an effective date of January 1, 2011 or later shall become effective on either the effective date or the date when the first system is certified to meet the performance standard or specification, whichever is later. The Executive Officer shall maintain, and make available to the public, a current list of effective and operative dates for all standards and specifications.

Four-Year Clock (cont.)

Proposed Language

Any person can petition the Executive Officer for an engineering determination that the first system certified to meet a standard or specification cannot be installed and/or operated, or is otherwise incompatible with a specific type or subgroup of GDF. The Executive Officer shall conduct an engineering evaluation...

Four-Year Clock (cont.)

Proposed Language (cont.)

...if incompatibility is found, the Executive Officer shall issue an Executive Order stating the incompatibility between the certified system and the GDF type or subgroup which was the subject of the evaluation. In this event, such GDF type or subgroup is not subject to the standard or specification until such date when the first system is certified that is compatible with that GDF type or subgroup.

Comments

Presentation Outline

1. Workshop Objectives
2. Four-Year Clock
3. Pressure Requirements
4. Low Permeation Hoses
5. Non-Vapor Recovery GDFs
6. Administrative Amendments
7. Projected Timeline

Pressure Requirements

- In March 2010 ARB staff proposed the following:
 - eliminate certification pressure limits
 - eliminate winter in-station diagnostic (ISD) alarms

Pressure Requirements

Certification Pressure Limits

- Staff is not proposing changes to the current 30 day certification pressure limits:
 - Average 0.25 inches water column gauge (in wcg)
 - 1.5 in wcg daily high hour

Pressure Requirements

Winter ISD Pressure Alarms

- Staff is not proposing changes to the current ISD pressure assessments for generating alarms:
 - 1.5 in wcg exceeded for more than 5% of the time in a week (gross failure)
 - 0.5 in wcg exceeded for more than 25% of the time in a month (degradation)

Pressure Requirements

Winter ISD Pressure Alarms (cont.)

- ARB staff in the short term will pursue administrative relief for ISD pressure alarms during winter fuel season
- ARB staff in the long term is continuing an ongoing study to evaluate ISD pressure alarms
 - Study results expected end of Summer 2011
 - Results of the study will be presented to stakeholders at a later workshop
 - Results of the study may result in changes to the current pressure assessment limits

Comments

Presentation Outline

1. Workshop Objectives
2. Four-Year Clock
3. Pressure Requirements
4. Low Permeation Hoses
5. Non-Vapor Recovery Nozzles
6. Administrative Amendments
7. Projected Timeline

Low Permeation Hoses

GDF Hose Background

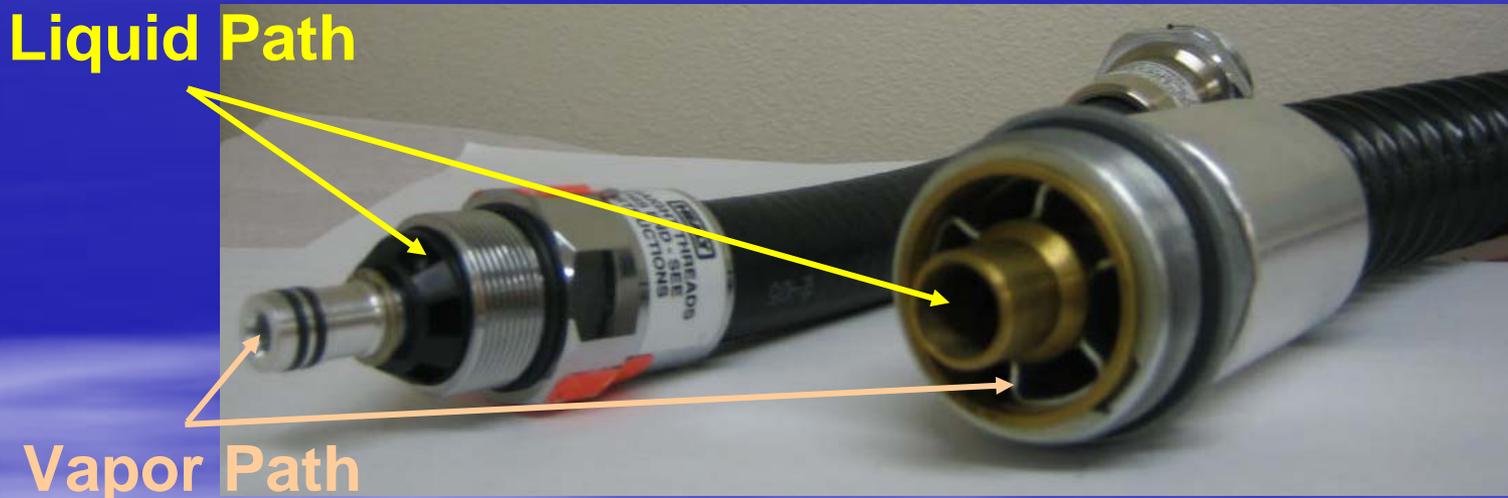
- ARB certifies GDF hoses as part of an Enhanced Vapor Recovery (EVR) system
 - EVR systems require the use of vapor recovery hoses
 - Currently, no standard exists for controlling permeation emissions from GDF hoses



Low Permeation Hoses

GDF Hose Background (cont.)

- GDF vapor recovery hoses differ from conventional fuel hose in that they are co-axial



**Vacuum Assist
Hose**

**Balance
Hose**

Low Permeation Hoses

Proposal

Proposed Language

All GDF vapor recovery systems using hoses which carry liquid fuel against the outermost hose wall shall use only low permeation hoses which permeate at a rate of no more than 10.0 grams per square meters per day (g/m²/day) as determined by UL 330 (Seventh Edition) - Underwriters Laboratories' Standard for Hose and Hose Assemblies for Dispensing Flammable Liquids.

Low Permeation Hoses

Proposal (cont.)

Proposed Language

If UL 330 testing is not conducted by ARB staff, then the Executive Officer must be made a beneficiary of the data within the contract of the applicant and the testing facility. All data and documentation relevant to determining the permeation rate of the hose, as described in section 15 of UL 330, shall be transmitted to the Executive Officer by the testing facility, concurrently when transmitted to the applicant.

Low Permeation Hoses

Proposal (cont.)

- ARB staff estimates that low permeation hoses will result in:
 - Over 95% emissions reductions from controlled GDF hoses (~2 TPD)
 - Cost effectiveness of 0.03 \$/lb of emissions reduced (cost savings)

Low Permeation Hoses

Effective Date

- January 1, 2012 (Proposed Effective Date)
 - Date when new facilities and existing facilities undergoing major modifications must install low permeation GDF hoses
- January 1, 2016
 - Date when all existing facilities must install low permeation GDF hoses

Comments

Presentation Outline

1. Workshop Objectives
2. Four-Year Clock
3. Pressure Requirements
4. Low Permeation Hoses
5. Non-Vapor Recovery GDFs
6. Administrative Amendments
7. Projected Timeline
8. Comments & Contact Information

Non-Vapor Recovery GDFs

- Air Districts with ARB and US EPA guidance exempted Phase II requirements for GDFs that predominately fuel ORVR vehicles
- Typically applied to car rental, corporate or government fleet fueling facilities
- Approximately 200 facilities in CA

Non-Vapor Recovery GDFs (cont.)

Performance Type	Requirement	Sec.	Test Procedure
Each Nozzle Shall	Have an Insertion Interlock	5.1	Testing and Eng. Eval.
Insertion Interlock	Verification of No Liquid Flow Prior to Insertion of Nozzle into Fill Pipe	5.1	Testing and Eng. Eval.
Post Refueling Drips	≤ 3 Drips per fueling	4.7	TP-201.2D
Spillage Including Drips from Spout	< 0.24 lbs. per 1000 gallons	4.3	TP-201.2C
Liquid Retention	≤ 100 ml per 1000 gallons	6.4	TP-201.2E

Non-Vapor Recovery GDFs (cont.)

Performance Type	Requirement	Sec.	Test Procedure
Nozzle Spitting	≤ 1.0 ml per nozzle per test	4.8	TP-201.2E
Low Permeation Hoses	< 10 grams per m² per day	20.1	UL 330 (7th Edition)
Connectors and Fittings	No Indication of Leakage	4.13	LDS or Bagging

Non-Vapor Recovery GDFs (cont.)

Proposed Certification Site Criteria

- ORVR Fleet Fueling Facility within 100 miles of ARB Headquarters
- Minimum of 4 nozzles installed
- Minimum of 10,000 gallons per month throughput
- 400 fueling observations for spillage

Non-Vapor Recovery GDFs (cont.)

- Nozzle boot may be needed for interlock
- Limited number of sites available for certification testing
- Staff is finalizing cost estimates at this time
 - More than current conventional nozzles
 - Less than EVR nozzles
- District Rules may need to be amended for these standards to be applicable

Comments

Presentation Outline

1. Workshop Objectives
2. Four-Year Clock
3. Pressure Requirements
4. Low Permeation Hoses
5. Non-Vapor Recovery Nozzles
6. Administrative Amendments
7. Projected Timeline

Administrative Amendments

- Amendments to D-200, CP-201, CP-206, and various Test Procedures
- Eliminate inconsistencies and correct known errors
- Changes will clarify definitions, certification procedures, and test procedures

Administrative Amendments (cont.)

D-200 Definitions

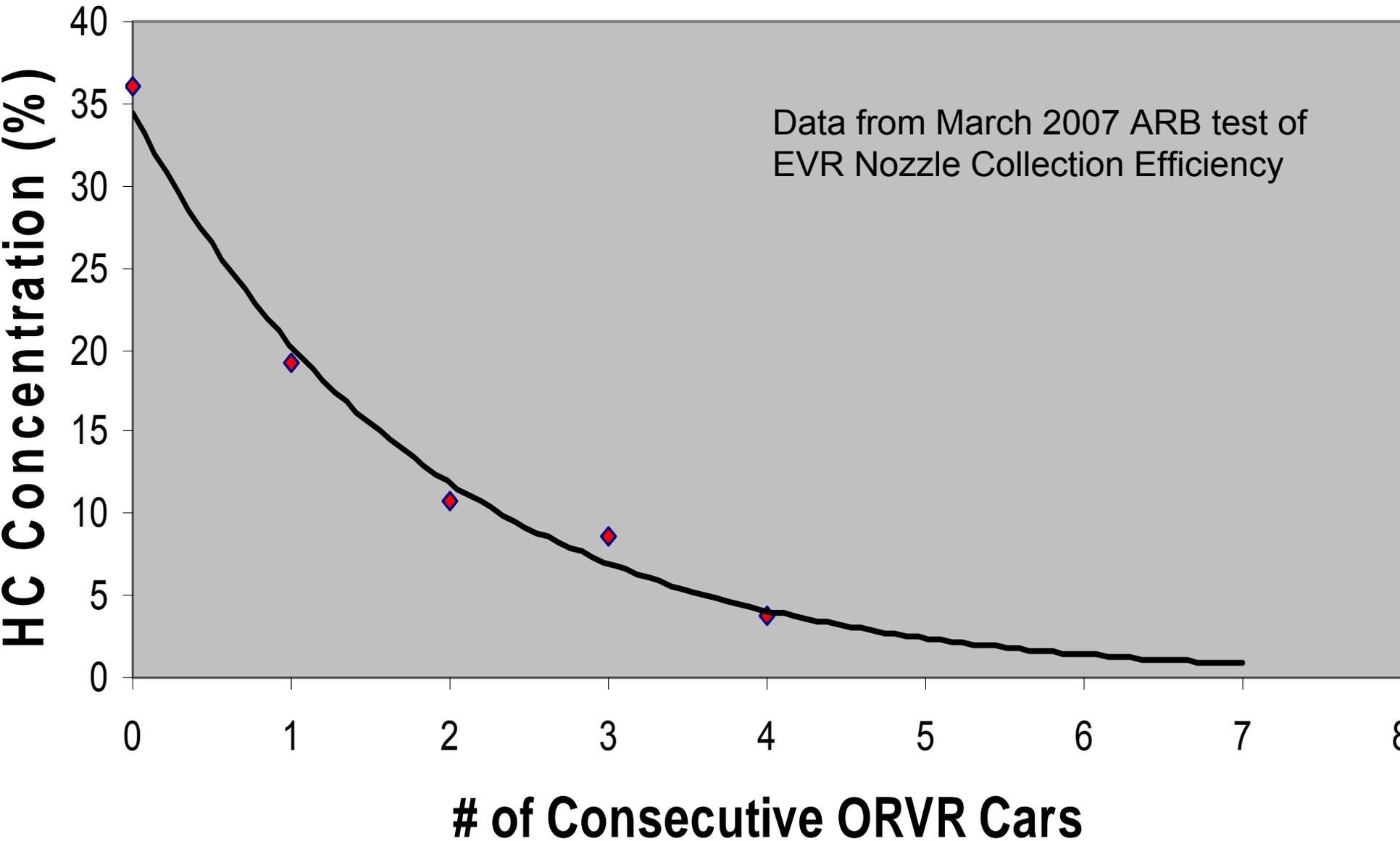
- Delete the definition of “Fugitive Emissions”
- Amend the definition of “Pressure Related Fugitive Emissions” to reference fugitive emissions as calculated in TP-201.2F
- Amend the definition of “Liquid Retention” to include liquid in the spout
 - Consistent with state law and test procedure TP-201.2E

Administrative Amendments (cont.)

Vehicle Matrix

- Amend CP-201 efficiency testing of Phase II systems to a matrix of 100 non-ORVR vehicles, exclude ORVR vehicles.
- “Clean” air in vapor hose after ORVR fueling lowers HC mass measured on the next conventional fueling event
 - Problem worsens as ORVR population increases year after year

Vapor Quality vs. Consecutive ORVR Fueling Events



Administrative Amendments (cont.)

Vehicle Matrix

- Retain 95% efficiency and 0.38 lb/kgal emission factor for non-ORVR vehicles
- Remove requirements to show that system meets 0.38 lb/kgal for:
 - an entire population of ORVR vehicles
 - a mix of non-ORVR and ORVR vehicles
- Proposal reduces evaluation time and cost

Administrative Amendments (cont.)

Aboveground Tanks CP-206

- Remove ISD Requirements for ASTs
 - Few ASTs meet ISD throughput requirement of 600,000 gallons per year
- Amend CP 206 to specify minimum throughput of 9000 gal during certification
- Efficiency testing with a matrix of 30 non-ORVR vehicles

Administrative Amendments (cont.)

- Revise TP-201.2 to incorporate many of the changes that were determined by August 28, 2007 memo to be equivalent or alternate
- Specify acceptable timeframes for leak integrity testing before and after Phase I and Phase II efficiency testing

Administrative Amendments (cont.)

- Revise TP-201.2I (for ISD) to be consistent with current CP-201 requirements
 - Assessment periods and alarm criteria
 - Remove Phase I Overpressure Test, which was eliminated from CP-201 in 2003
- Revise TP-201.2J to remove the option for pressure drop bench testing multiple components in series
 - This option has never been used by ARB

Comments

Presentation Outline

1. Workshop Objectives
2. Four-Year Clock
3. Pressure Requirements
4. Low Permeation Hoses
5. Non-Vapor Recovery GDFs
6. Administrative Amendments
7. Projected Timeline

Projected Timeline

- Receive comments on these workshop proposals by July 16, 2010
- Complete the rulemaking by the end of 2010

Contact Information

- Staff Lead: Scott Bacon
–(916) 322-8949, sbacon@arb.ca.gov
- Project Manager: Dennis Goodenow
–(916) 322-2886, dgoodeno@arb.ca.gov
- For questions concerning GDF hose emissions: Jason McPhee, P.E.
–(916) 322-8116, jmcphee@arb.ca.gov

Web Site

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

