Attachment E:

Public Process for Development of Proposed Action Information

May 2013

California Air Resources Board

Monitoring and Laboratory Division

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I. INTRODUCTION

Public participation is one of the cornerstones of the regulation development process. In an effort to encourage input and feedback from parties directly or indirectly affected by the Air Resources Board's (ARB) proposed Off-Highway Recreational Vehicles (OHRV) regulation, staff developed an informational website featuring a portal through which interested parties provided contact information for updates and notices of public workshops. For stakeholders unaware of ARB's electronic notification features, staff mailed workshop notices via the United States (U.S.) Postal Service for the first workshop. Over the course of the regulation development process, staff conducted four workshops at the dates and times listed in Table I-1.

Table I-1: OHRV Workshop Locations and Dates

LOCATION	DATE
El Monte	3/24/2006
Sacramento	9/6/2006
El Monte	4/20/2010
El Monte	12/18/2012

In addition to workshops, nearly forty stakeholder meetings have been held on all aspects of the regulatory proposal. Dates and participants are listed in Table I-2.

Table I-2: Meetings with Industry to Discuss OHRV Regulatory Proposal

PARTICIPANTS	DATES
Motorcycle Industry Council (MIC) and OHRV Manufacturers	1/14/2009, 1/15/2009, 4/7/2010, 4/29/2010, 7/21/2010, 9/30/2010, 11/8/2010, 11/9/2010, 11/7/2011, 3/22/2011, 4/27/2011, 8/18/2011, 9/26/2011, 3/5/2012, 4/17/2012, 4/25/2012, 10/17/2012, 3/6/2013, 3/25/2013, 4/4/2013, 4/12/2013
United States Environmental Protection Agency (U.S. EPA)	3/14/2013
Harley Davidson	8/26/2010, 9/27/2011, 11/7/2011, 5/4/2012,12/18/2012, 2/25/2013, 3/14/2013
MeadWestvaco	7/15/2009, 12/2/2009, 5/3/2011, 9/18/2012
Honda	11/2/2010, 11/9/2010, 3/27/2013
Evaporative Emissions Consulting Inc.	11/9/2009, 2/8/2010, 2/9/2010

Workshop notices and comments are provided in the pages that follow.

II. WORKSHOPS

The section presents the OHRV workshops that staff held to inform OHRV and On-Road Motorcycle (OMC) manufacturers, stakeholders, and interested parties about the proposed regulation and test procedures for OHRVs.

A. MARCH 23, 2006

On March 23, 2006, staff informed stakeholders of their intent to develop more comprehensive evaporative emissions regulation. Staff held a joint workshop to discuss ARB's proposal to harmonize with the U.S. EPA's evaporative standards for all-terrain vehicles and off-road motorcycles and to take comment on proposed changes to the non-certified OHRV riding season (Figure II-1). Based on comments received from the workshop, a list of action items were drafted by staff (Figure II-2).

Figure II-1: March 23, 2006 Workshop Notice

Air Resources Board

Alan C. Lloyd, Ph.D.
Agency Secretary

Robert F. Sawyer, Ph.D., Chair
9480 Telstar Avenue, Suite 4
El Monte, California 91731 www.arb.ca.gov

Arnold Schwarzenegger
Governor

TO: ALL OFF-HIGHWAY RECREATIONAL VEHICLE MANUFACTURERS
ALL INTERESTED PARTIES

SUBJECT: PUBLIC WORKSHOP TO DISCUSS AMENDMENTS TO THE OFF-HIGHWAY RECREATIONAL VEHICLE REGULATIONS (OHRV)

The California Air Resources Board (ARB or Board) staff invites you to participate in a public workshop to discuss amendments to the OHRV regulations. The OHRV regulations can be found in title 13, California Code of Regulations, sections 2410-2415. Later this year, staff plans to propose to the Board interim evaporative standards for off-road motorcycles (ORMs) and all-terrain vehicles (ATVs), which will include permeation standards for fuel tanks and fuel hoses. Staff shall also propose minor changes to the riding seasons (section 2415) that reflect current air quality data and make the riding season dates more uniform by location.

Background

California has had a longstanding off-highway vehicle program, which supports the off-highway enthusiast community and is funded, in part, by registration fees. Statewide, approximately 100 riding areas on public lands have been designated for ORM and ATV use. In January 1994, the Board approved the OHRV regulations, which contained exhaust emission standards for ORMs and ATVs. Once implemented, only emission-compliant ORMs and ATVs were eligible for off-highway registration, commonly known as the "Green Sticker." Noncompliant ORMs and ATVs were still allowed to be sold in California, but it was anticipated that their use would be limited to closed course racing events.

The OHRV regulations were amended in 1998, in response to concerns about product availability. Specifically, the numbers of emission-compliant models were lower than originally anticipated, which would have had an unintended and negative impact on dealers. To remedy this situation, the amendments established a new form of registration for which the noncompliant 1998 and subsequent model year ORMs and ATVs were eligible, known as the "Red Sticker." Also established were riding seasons for these noncompliant ORMs and ATVs, which specified when these vehicles could operate; namely, when ozone levels did not exceed ambient air standards.

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, see our website: http://www.arb.ca.gov.

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In 2003, the OHRV regulations were amended a second time. Because there had been errors made when OHV registrations were issued (e.g., Green Sticker registration issued to noncompliant vehicles), enforcing the riding seasons became problematic. After the problems causing the registration errors had been corrected, the OHRV regulations were then amended to move forward the Red Sticker registration requirement for noncompliant vehicles from 1998 to the 2003 model year and subsequent.

Initially, only California had emission standards for ORMs and ATVs. It wasn't until November 2002, that the United States Environmental Protection Agency (U.S. EPA) promulgated regulations for these vehicles in their Nonroad Recreational Vehicles and Engines rulemaking. This rulemaking included exhaust and evaporative standards for ORMs and ATVs. The exhaust standards are phased-in over the 2006 to 2007 time frame. The evaporative standards will be fully implemented in 2008.

Staff Proposal

Following the U.S. EPA rulemaking, industry contacted ARB staff requesting harmonization with certain and/or all parts of the federal regulations for ORMs and ATVs. At the workshop, ARB staff will present an overview of the prominent regulatory issues as they are currently understood, and some of the options available for addressing them. The primary issues are:

I. Evaporative Standards

Currently, the OHRV regulations do not contain evaporative emission standards. At this time, ARB is developing a staff proposal, more stringent than federal standards, to control additional evaporative emissions from the category. At the workshop, staff will present an overview of ARB's efforts to develop new evaporative emission standards. A formal staff proposal is scheduled to be presented to the Board in 2008. In the interim, ARB staff plans to propose harmonizing with the federal standards and test procedures for permeation of fuel tanks and fuel hoses on ORMs and ATVs. The standards, which will be implemented in 2008, are:

- Fuel Tanks: 1.5 grams per square-meter per day
- Fuel Hoses: 15.0 grams per square-meter per day

II. Exhaust Standards

The federal regulations have one set of standards for ORMs and another set of standards for ATVs; whereas California has one set of standards for both. The tables below compare them:

Table 1. ORM Standards
(grams per kilometer)

	HC	$HC+NO_x$	CO
California	1.2	—	15.0
Federal	—	2.0	25.0

Table 2. ATV Standards
(grams per kilometer)

	HC	$HC+NO_x$	CO
California	1.2	—	15.0
Federal	—	1.5	35.0

- The OHRV regulations contain exhaust standards for hydrocarbon (HC) and carbon monoxide (CO) emissions. The federal regulations differ: oxides of nitrogen (NO_x) emissions are added to the HC emissions, resulting in a $HC+NO_x$ standard. The federal standards for CO emissions are less stringent than California's. Because the federal standards are less stringent, staff is reluctant to consider harmonizing.

- Additionally, the federal regulation also differs with its provisions for the certification of ORMs with engine displacements less than 70 cubic centimeters (cc) and ATVs with engine displacements less than 100 cc. The standards for these classes of vehicles are even less stringent. The effect of harmonization would result in less emission reductions for California.

Table 3. Federal Standards for Small Displacement OHRV Engines
(grams per kilowatt-hour)

Vehicle Type / Displacement	HC	$HC+NO_x$	CO
ORMs: ≤ 70 cc	—	16.1	519
ATVs: ≤ 99 cc		25.0	500

- Both the California and the federal regulations allow an optional "engine only" certification test for ATVs, as opposed to the chassis dynamometer test for ORMs, with comparable standards measured in grams per kilowatt-hour. In California, "specialty/utility" vehicles must certify to the off-road large spark-ignition (LSI) standards. These vehicles are similar to golf carts, with bench seats and steering wheels, but have rear cargo areas with carrying capacities of several hundred pounds. However, there is a provision in the federal regulations allowing specialty/utility vehicles to certify under the ATV standards. Although the ATV and LSI standards in California are somewhat similar at present, staff is evaluating more stringent LSI standards. Therefore, harmonizing with the federal provision poses a potential loss of emission reductions in the future.

Table 4. ATV vs. LSI Standards – Engine Dynamometer Test
(grams per kilowatt-hour)

Vehicle Type / Displacement	HC	$HC+NO_x$	CO
ATV: California: ≥ 225 cc	—	13.4	400
ATV: Federal: ≥ 225 cc	—	13.4	400
LSI: < 1-liter	—	12.0	549

Riding Seasons

When the riding seasons were first determined in 1998, ozone readings from monitoring stations were analyzed over the three-year period of 1995-1997. Staff has reviewed more recent ozone data (2002-2004) and will propose minor changes to the riding seasons based on these data. Staff has also discussed enforcement concerns with the land agencies that have jurisdiction over these lands. In cases where riding areas with different riding seasons border with one another or there are trails that connect the two, staff will propose minor changes that make the riding seasons more uniform. An example of neighboring riding areas would be the Hungry Valley State Vehicular Recreation Area and Alamo Mountain, in the Mount Pinos Ranger District. The effect of this will be to increase riding opportunities slightly, and simplify matters for off-highway enthusiasts and land-use managers.

Workshop

The workshop will be held at the following time and location:

Date:	March 23, 2006
Time:	9:00 a.m. to 3:00 p.m.
Location:	Air Resources Board – Annex 4 Auditorium 9530 Telstar Avenue El Monte, California 91731

Workshop Materials

Workshop presentations and handout will be available at the workshop and on the Off-Road Recreational Vehicles website at: http://www.arb.ca.gov/msprog/offroad/orrec/orrec.htm . If you would like to receive notification by email of updates to the Off-Road Recreational Vehicles website, please sign up at http://www.arb.ca.gov/listserv/orrec.htm .

If you have a disability-related accommodation need, please go to http://www.arb.ca.gov/html/ada/ada.htm for assistance or contact the ADA Coordinator at (916) 323-4916. If you are a person who needs assistance in a language other than English, please go to http://www.arb.ca.gov/as/eeo/languageaccess.htm or contact the Bilingual Coordinator at (916) 324-5049.

We welcome your participation. If you have general questions regarding either the workshop or the proposed OHRV rulemaking, or you cannot attend and would like to provide comments, please contact Mr. Andrew Spencer, Air Pollution Specialist at (626) 575-6675 or aspencer@arb.ca.gov, or Mr. Scott Rowland, Manager at (626) 575-6676 or srowland@arb.ca.gov. For questions or comments regarding the development of California's new evaporative emission standards for ORMs and ATVs, please contact Mr. Pippin Mader, Air Resources Engineer at (916) 322-8930 or pmader@arb.ca.gov, or Mr. James Watson, Manager at (916) 327-1282 jwatson@arb.ca.gov.

Sincerely,
/s/

Robert H. Cross, Chief
Mobile Source Control Division

cc: See next page

cc: Mr. Tom Cackette
Chief Deputy Executive Officer

Mr. William Loscutoff, Division Chief
Monitoring and Laboratory Division

Mr. Michael W. Carter, Chief
Emission Research and Regulatory Development Branch

Mr. Manjit Ahuja, Chief
Stationary Source Testing Branch

Mr. Scott Rowland, Manager
Off-Road Controls Section

Mr. Andrew Spencer, Air Pollution Specialist
Off-Road Controls Section

Figure II-2: March 23, 2006 OHRV Workshop Action Items

March 27, 2006

Off Highway Recreational Vehicle Workshop

Action Items:

- Larry Keller from Polaris asked that the ARB consider cost impacts and industry size on smaller snowmobile manufacturers when proposing the rulemaking.
- Chris Wright from Arctic Cat requested that the ARB consider the location and activity of snowmobiles.
- Bob Wyman from Latham and Watkins suggested that the ARB take into consideration that snowmobiles will not be refueled as often as other equipment.
- Jim Lyons requested the calculations ARB used to generate the pie charts.
- Jeff Shetler from Kawasaki asked whether ARB would be testing representative equipment, (specifically a representative number of red sticker vehicles). He also suggested that consumers would tamper with equipment installed to reduce evaporative emissions in an attempt to increase performance. Jeff asked the ARB if the low permeation tank data was generated using new tanks or tanks after their useful life.
- Alex Kennedy from Polaris asked the ARB to expand on what fell into the carburetor and other emissions category on the pie charts.
- Steve Whitehead from Fluoro-Seal asked if the ARB would be harmonizing its test procedures and test fuels with the EPA standards.
- Yasuto Nakata from Honda had concerns with the cost of conducting running loss control tests in a shed.

B. SEPTEMBER 6, 2006

A workshop was held on September 6, 2006 for stakeholders to comment on a proposed test plan to develop inventory emission factors and evaluate control technology for OHRVs (Figure II-3).

Figure II-3: September 6, 2006 Workshop Notice

Air Resources Board

Robert F. Sawyer, Ph.D., Chair
1001 I Street • P.O. Box 2815
Sacramento, California 95812 • www.arb.ca.gov

Linda S. Adams
Secretary for Environmental Protection

Arnold Schwarzenegger
Governor

August 8, 2006

To: All Off-Highway Recreational Vehicle Manufacturers and All Interested Parties:

The California Air Resources Board (ARB) staff invites you to participate in a public workshop to discuss a test plan to develop inventory emission factors and evaluate technology to control evaporative emissions from Off-Highway Recreational Vehicles (OHRVs).

The workshop will be held at the following time and location:

Date:	September 6, 2006
Time:	10:00 a.m. to 12:00 p.m.
Location:	Air Resources Board North and South Conference Room 1927 13th Street Sacramento, California 95814

Test Plan Evaluation

Please download and evaluate the OHRV test plan that can be found on the OHRV website at: http://www.arb.ca.gov/msprog/offroad/orrec/orrec.htm. Please be prepared to discuss comments on the test plan at the workshop.

Copies of the workshop presentation and test plan will be available at the workshop. If you would like to receive notification by email of updates to the Off-Road Recreational Vehicles website, please sign up at http://www.arb.ca.gov/listserv/orrec.htm

If you have a disability-related accommodation need, please go to http://www.arb.ca.gov/html/ada/ada.htm for assistance, or contact the ADA Coordinator at (916) 323-4916. If you are a person who needs assistance in a language other than English, please go to http://www.arb.ca.gov/as/eeo/languageaccess.htm or contact the Bilingual Coordinator at (916) 324-5049.

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We welcome your participation. If you have questions or comments regarding the OHRV test plan please contact Mr. Pippin Mader, Air Resources Engineer at (916) 322-8930 or pmader@arb.ca.gov, or Mr. James Watson, Manager at (916) 327-1282 or jwatson@arb.ca.gov.

Sincerely,

Manjit Ahuja, Chief
Stationary Source Testing Branch
Monitoring and Laboratory Division

cc: Mr. Scott Rowland, Manager
Off-Road Controls Section
Mobile Source Control Division

C. APRIL 20, 2010

On April 20, 2010, staff held a public workshop for OHRV and OMC manufacturers and interested parties to discuss the draft proposal to regulate evaporative emissions from OHRVS and OMCs (Figure II-4). Staff presented the details of the draft proposal and discussed issues raised by stakeholders. Comments developed by industry were provided to staff prior to the workshop (Figure II-5).

Figure II-4: April 20, 2010 Workshop Notice

Air Resources Board

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

Linda S. Adams
Secretary for Environmental Protection

Arnold Schwarzenegger
Governor

April 1, 2010

To: All Off-Highway Recreational Vehicle and On-road Motorcycle Manufacturers and All Interested Parties:

The California Air Resources Board (ARB) staff invites you to participate in a public workshop to discuss a draft proposal to regulate evaporative emissions from Off-Highway Recreational Vehicles (OHRVs) and On-road Motorcycles.

The workshop will be held at the following time and location:

Date:	April 20, 2010
Time:	1:00 p.m. to 4:00 p.m.
Location:	Air Resources Board Annex 4 Conference Room 9500 Telstar Avenue El Monte, California 91731

Draft Regulation Evaluation

An overview of the draft proposal can be found on the OHRV website at: http://www.arb.ca.gov/msprog/offroad/orrec/orrec.htm. The workshop presentation will also be posted on the OHRV website one day prior to the workshop. If you would like to receive notification by email of updates to the OHRV website, please sign up at http://www.arb.ca.gov/listserv/orrec.htm.

Copies of the workshop presentation and the overview of the draft proposal will be available at the workshop. Please be prepared to discuss the draft proposal at the workshop.

If you require a special accommodation or need this document in an alternate format (i.e. Braille, large print) or another language, please contact Pippin Mader at 916-322-8930 or pmader@arb.ca.gov as soon as possible, but no later than 10 business days before the scheduled event/meeting. TTY/TDD/Speech to Speech users may dial 711 for the California Relay Service.

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, see our website: http://www.arb.ca.gov.

California Environmental Protection Agency

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We welcome your participation. If you have questions please contact Mr. Pippin Mader, Air Resources Engineer at (916) 322-8930 or pmader@arb.ca.gov, or Mr. James Watson, Manager at (916) 327-1282 or jwatson@arb.ca.gov.

Sincerely,

/s/

Manjit Ahuja, Chief
Evaporative Controls and Certification Branch
Monitoring and Laboratory Division

Figure II-5: April 20, 2010 Stakeholder Comments

Off-Highway Recreational Vehicle and On-Road Motorcycle Regulation Workshop

April 20, 2010

Stakeholder Comments

Proposal

Daniel Bak – Flyscooters

- What is the time frame on getting ARB approval/disapproval of a certification application once the application has been received by ARB?
  - The timing is variable and depends on several different factors. If no confirmatory testing is required and the application is complete and provides adequate tamper resistance then a manufacturer could receive a response from ARB in 2 – 3 months.

Steve Scholten – John Deere

- What is the vapor recovery test procedure based on?
  - This test procedure is based on the current federal procedure with minor changes to temperature and refueling flow rate.
- Will SHED testing be required far all vehicles?
  - Yes.

Joe Biber – Harley Davidson

- Please describe the running loss test procedure.
  - There will be a hose coming into the SHED to provide fresh air and also a hose going out to take out all of the exhaust emissions. The vehicle will be put on a portable dyno and run under a load for 23 minutes at 95° F. The emissions will be recorded at the end of the 23 minutes.
- Is any other running loss test procedure being considered?
  - ARB has requested that industry present an alternative running loss procedure that will show that the fuel does not boil and the carbureted system can control running loss.

Mark Carloch – Sierra Research

- What was the cost to ARB to perform the running loss test as currently described in the proposal?
  - ARB already had the SHED so the additional cost for the dyno and load were approximately $35,000.

D. DECEMBER 18, 2012

On December 18, 2012, staff conducted a workshop for stakeholders and industry to discuss a revised proposal to regulate evaporative emissions from OHRVs (Figure II-6). The discussion also included draft test procedures and updates to the emissions inventory. Based on the discussions that occurred during the workshop, staff developed a list of action items to incorporate industry recommended changes (Figure II- 7).

Figure II-6: December 18, 2012 Workshop Notice

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

December 4, 2012

To: All Off-Highway Recreational Vehicle Manufacturers and Interested Parties

The California Air Resources Board (ARB) staff invites you to participate in a public workshop to discuss a draft proposal to regulate evaporative emissions from Off-Highway Recreational Vehicles (OHRVs). The workshop will also include a discussion of draft test procedures and updates to the emissions inventory.

The workshop will be held at the following time and location:

Date:	December 18, 2012
Time:	10:00 a.m. to 2:00 p.m.
Location:	Air Resources Board Annex 4 Conference Room 9500 Telstar Avenue El Monte, California 91731
Teleconference Number:	1-866-803-4254 Passcode: 2568297

OHRV Draft Regulation and Test Procedures

Draft regulations and test procedures can be found on the OHRV website at: http://www.arb.ca.gov/msprog/offroad/orrec/orrec.htm. The workshop presentation will also be posted on the OHRV website one day prior to the workshop. If you would like to receive notification by email of updates to the OHRV website, please sign up at http://www.arb.ca.gov/listserv/orrec.htm

If you are unable to attend in person you may attend via phone and internet. A GoToMeeting has been setup to be used in conjunction with the teleconference number. You can attend the GoToMeeting by clicking on the following link on the day of the meeting: https://www1.gotomeeting.com/register/840392288

Copies of the workshop presentation, draft regulations, and test procedures will be available at the workshop. Please be prepared to discuss these at the workshop.

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, see our website: http://www.arb.ca.gov.

California Environmental Protection Agency

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If you require a special accommodation or need this document in an alternate format (i.e. Braille, large print) or another language, please contact Pippin Mader (see below) as soon as possible, but no later than 10 days before the scheduled event/meeting. TTY/TDD/Speech to Speech users may dial 711 for the California Relay Service.

We welcome your participation. If you have questions please contact Mr. Pippin Mader, Air Resources Engineer at (916) 322-8930 or pmader@arb.ca.gov, or Mr. James Watson, Manager at (916) 327-1282 or jwatson@arb.ca.gov.

Sincerely,

\s\

Manjit Ahuja, Chief
Evaporative Controls and Certification Branch
Monitoring and Laboratory Division

Figure II-7: Action Items Resulting from December 18, 2012 Workshop

December 18, 2012
OHRV Workshop- El Monte, Ca

Comments from Workshop Participants

ARB PRESENTATION

TEST PROCEDURE QUESTIONS

- Industry: Does the tip test only apply to ATVs and not other four wheel vehicles? Can the test allow for different angles based on vehicle type?
  - ARB- Four-wheel vehicles are all being categorized as ATV. If it becomes necessary we can talk about modifying the tip test to allow for different angles by category.
  - Action Item (ARB): Review tip test applicability for different categories.
- Industry: The latest draft of the test procedure is only has the tip test being performed at side angles.
  - ARB- That is a mistake; the point of the test is to test the extremes of real use.
  - Action Item (ARB): Update test procedure for clarity.
- Industry: How was 2psi selected and what was the basis of that?
  - ARB- It was the number similarly effective for a 7-day test on the carbon canister. Based on the average headspace in the tank, RVP in the fuel, 76° F/ 92° F diurnal profile.

COST SURVEY QUESTIONS

- Industry: What are you doing with the cost information?
  - ARB- It will be used to determine the cost information, and estimate the cost of emission reductions.
- Industry: Is this confidential?
  - ARB- Yes, just check the box. If you are not comfortable with a certain number a range will work.
- Industry: If you do not have a category would the vehicle than fit in other?
  - ARB- Yes, we will clarify that.
  - Action Item (ARB): Clarify what to use the "other" category for on cost survey

PTSD SLIDES

- Industry: Did you make an assumption for ages based on the DMV data?
  - ARB- Yes, I believe it is 50 years. Before 2007 we did not have such detailed information on these vehicles, it is based on DMV data. Some people have held on to these vehicles for 30 years. Year one is not the highest, sales increase during the second or third year. Data shows that people have and use their OHRV for 30-40 years.
- Industry: How do you determine if the vehicle is in-use? Just assume it is if the vehicle is registered? We found that people have registered vehicles sitting in garages that are not used.
  - ARB- Yes, we assume that the vehicles registered are used. We have data showing that the number of vehicles registered and unused is

1

very small, I can show you this data. Cal state information shows the same data.

- Action Item (MIC) - Provide data that shows a shorter life for OHRV, as claimed.

MIC PRESENTATION

FILLER NECK COMPATIBILITY

- Industry: Proposed an increasing standard from vehicles with 2.5 gallon tank to 3.5 gallon tank. This will encompass larger vehicles that need this technology. The fill pipe would have to meet the same requirements in Figure 1 in ISO 13331:1995 (E).
  - ARB- This is a reasonable request. Pamela shared the fraction of ATV under 2.5 gallons and this was around 85%.
  - Action Item (MIC): Provide figure and reasoning for requested change.
  - Action Item (ARB): Look at figure to verify that it only includes angles and nothing more, we do not want additional requirements for the filler neck the figure may describe.

TIP TEST

- Industry: We do not intend to test to such extreme angles. There are inconsistencies in numbering and references
  - ARB- This should be changed, this is just an error in updating.
  - Action Item (ARB): Update with correct angles.

AVERAGING

- Industry: The credits given should be similar to corporate averaging, we are amenable to having an upper limit. We can propose a number for the upper limit
  - ARB- We do not want to see uncontrolled vehicles allowed because than usage becomes an issue.
  - Action Item (MIC): Propose a number for the upper limit on averaging.
  - Action Item (ARB): Review item internally.

VEHICLE TAG

- Industry: We would like the tag to be placed on the outside of the owners manual
  - Action Item (ARB) - Discuss the requirements for the tampering label. Considering allowing tag to be placed in one of two areas: printed on front cover of owner's manual or a hanging tag, as currently described.

INSPECTION

- Industry: Dealers should not cause a manufacturers EO to be revoked
  - Action Item (ARB) - We agree that this does not seem necessary but will speak with enforcement to determine the reasoning between adding this language to 13 CCR 2769 in 2004.

WARRANTY

- Industry: There is a 5-year warranty without use limits. There should be a mileage limit but there are not odometers on all vehicles therefore a 30 month warranty is desired.

- ARB- Our model originally predicted the half-life of the vehicle to be 5 years, but new data from PTSD is significantly higher. We are not proposing the warranty to increase but will need to look at this further.
- Action Item (ARB): Determine warranty mileage limit.

PRECONDITIONING

- Industry: We would like to propose a standard for higher temperature aging.
  - ARB- There has been discussion with stakeholders and we will consider the uses in different vehicles.
  - Action Item (MIC): Send proposal to ARB for consideration.

DURABILITY TESTING

- Industry: We would like to remove the requirement to complete durability testing for a component that has already passed durability tests for other vehicles
  - Action Item (ARB): Make requested change.

DYNO SPEED-TIME PROFILES

- Industry: Exhaust profile should match evaporative profile. We did a large test in Texas, and the average speed for entire fleet was around 6 miles per hour. Very fuel people are capable of handling a vehicle in those terrains in high speeds. Running through dyno vs sand are very different but I do not think ARB cares about emissions in the sand. ARB is concerned with diurnal emissions being stored in the garage.
  - ARB- Evaporative emissions are a result of load. Our worry is that an ATV that is rated at 40 mph and is tested at 5 is not an adequate test reflective of use. An alternative may also be a European on-highway standard as an option to certify. We have to look at this more and attempt to model it.
  - Action Item (MIC): Provide test results from Texas study.
  - Action Item (ARB): Discuss internally.
- Industry: Are ATV safe to operate at various conditions? We are going from artificial test to another more artificial test.
  - ARB- There is the option to do the alternative load cycle test. It does have higher horsepower associated with it. ATVs being tested at below 10% of their load are not clearly test the real use of this equipment. The higher rated vehicles are sometimes used to pull equipment or for multiple passenger riding. Is there data to suggest they are used mostly at low speeds at the lightest loads?
  - Action item (ARB): Discuss internally.

PERFORMANCE STANDARDS- TABLE 2

- Industry: There is uncertainty regarding the references to permeation standards in other tables (1 and 3), in the requirements for Table 2.
  - Action item (ARB): Clarify permeation standards to meet performance standards.

END QUESTIONS

- Industry: Why is there multiple standards in table 2? Would it make sense to correlate with SORE?

    - ARB- No it does not, this is just an equivalent standard but I cannot see a way to correlate.
    - Action item (ARB): Review SORE standards table and attempt to correlate.
- Industry: We have similar concerns as MIC for the 5 year warranty
    - ARB- I know most of them do not have odometers but adding an hour meter could be an alternative.
- Industry: If emission components are not visible do they do not need to use tamper proof clamps and fasteners?
    - ARB- We are now considering this.
    - Action item (ARB): Discuss internally.
- Industry: Tip test only applies to ATV and Motorcycles?
    - ARB- We would like to apply it to all, so we will change to "OHRV".
    - Action item (ARB): Make requested changes.

Additional Comments Received

Email received from Dan Grimes (Centro Inc) on December 20, 2012:

Mr. Mader,

Regarding the proposed Recreational Vehicle permeation regulations, I have some concerns with the regulations, liability and test procedures.

The Small Non-Road/Off-Road and Marine markets are extremely diverse and have a very broad supply base for components including fuel system components. Centro Inc. is the largest custom rotational molder in the USA. We work with numerous OEMs to meet their custom fuel tank needs. Centro has lead the way for rotational molders in addressing the evaporative emission regulations, being the first molder to obtain both CARB and EPA approval for our patent pending RotoLoPerm® multilayer technology. We began researching and developing low permeation fuel tank technologies over a decade ago and continue to put an emphasis on being the best at what we do.

The Small Off-Road Equipment ARB regulations as well as the EPA regulations seemed to take into account the very diverse markets and lower annual volumes that are typical. Unlike the automotive market, the equipment and fuel system designs take on many forms and vary greatly in the specific sizes, shapes and functions (i.e. fuel tanks that double as storage compartments and/or styling panels). Additionally, these unique designs that characterize the market and are a very big part of the success of the product, are not only unique but also many times produced in smaller quantities. Therefore, regulations which allow the flexibility of design based conformance are very important. Being able to test and prove a single tank or technology and then apply that to numerous designs has been crucial to the success of many molders meeting the existing regulations. Though ARB seems to have a handle on the economic impact from a part price perspective, the qualification/testing aspect is another key aspect that seems to be misunderstood with this latest proposed regulation.

The proposed regulations for Recreational Vehicles have added performance standards including the measurement of running loss emissions, emissions during hot soak, diurnal emissions as well as the tip test that seem to make design based conformance out of reach. Some of these tests, particularly the Tip Test, seem to be somewhat non value add. For example, I believe that it would be impossible to pass any type of permeation test if your fuel system allows liquid leakage when the tank is tipped in the ranges defined. But having this as part of the regulation demands a certain level of testing and paperwork that would drive unneeded cost into these systems.

I propose defining a purely design based option to avoid these types of testing if desired by the OEM or fuel system component suppliers. By using components which have all been independently tested and combining them, the system could achieve a drastic reduction in evaporative permeation compared to existing products while also being more manageable from the OEM, Fuel System supplier AND ARB perspective.

In addition, I have further concerns and a request for more details on where exactly liability lies with these proposed regulations. For example, as a custom part supplier, Centro retains no design control of the actual fuel tank and especially the overall fuel system. Does the OEM have overall responsibility and liability with regards to these regulations? If the intent is to have the fuel tank manufacturer carry the responsibility for meeting the performance standards as well as the warranty responsibilities, molders like Centro would have to incur great costs to test each and every tank design for each and every customer which would make the business very unattractive and drive costs into the end part which could be damaging to the entire industry. In many cases, this would not only dramatically extend new product development periods causing delays to market, but also could potentially be impossible because of secrecy issues with new product development programs.

Finally, with regards to the filler neck design requirement, it seems that there a discrepancy as it does not call out a minimum inner diameter. The current wording in 2418 (b)(1)(C) defines a range of outer diameters and a maximum inner diameter. More definition is requested for this requirement. I assume a minimum inner diameter is crucial to fit standard filling equipment nozzles. Based on this clarification, I might have more concerns with this requirement as it could be impossible with certain manufacturing methods.

Again – it seems that there is precedence for design based conformance that is very effective at accomplishing the end goal of reducing hydrocarbon emissions while also remaining minimally disruptive to the market. The proposed regulations seem to be approaching the same problem from a different perspective which could have very negative effects on the market.

I would appreciate you feedback and clarification on these points.

ARB Response:

Dan,
Thanks for your input, we always appreciate stakeholder input. A design based standard has multiple political and technical challenges that would have to be overcome. Politically, as regulators we try to not force any specific technology, rather we try to allow manufacturers the flexibility to minimize their costs while getting the required reductions. Technically, we have seen data suggesting the emission are hugely affected by the attention to detail of assembly. Without a test of the whole fuel system it is very hard to verify that all the components were assembled correctly.

The tip test is designed to eliminate a current problem, it is also designed to verify carbon canister protection.

As I see it, liability for a vehicle certified to a performance standard would be held by the certifier (manufacturer). However, for the small volume exemption where certified components can be used the component certifier would be responsible to make sure their components met the standards that they certified to.

Let me know if you have any additional questions,
Pippin