

# **Public Meeting Regulatory and Non-Regulatory Fuels Activities**

**June 3, 2004**

**California Environmental Protection Agency**

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**Air Resources Board**

# Agenda

- ✦ **Introductions**
- ✦ **Implementation Discussions**
  - Phase 3 RFG
  - Diesel Fuel
- ✦ **Potential Regulatory Activities**
  - Potential for Modifications to the CaRFG Regulations
  - Diesel fuel for locomotive and marine diesel engines
  - Clean Fuels Outlets - Hydrogen
  - Biodiesel
- ✦ **Presentations by Others**
- ✦ **Open Discussion**
- ✦ **Closing Remarks**

# Implementation Issues

# **Implementation of Phase 3 RFG Regulation**

# Draft Interim Policy

- ✦ Updated Draft Interim Policy release June 2, 2004 for Public Comment:
  - Documentation for transfer of denatured ethanol for use in California gasoline
  - Blending small amounts of finished gasoline into CARBOB terminal tanks
  - Blending small amounts of transmix into CARBOB terminal tanks
  - Importing fuel from Bay Area to South Coast
- ✦ Other issues under consideration
  - Oxygen Range and Oxygenates

# Documentation for Transfer of Denatured Ethanol

- ✦ Importers and producers of ethanol must provide the following information with the product transfer documents:
  - Name, location and operator of the facilities at which the ethanol was produced or denatured
- ✦ Concerns about the practicality of this requirement
  - commingling of denatured ethanol
  - commingling of neat ethanol before it reaches a California production facility that adds the denaturant

# Blending Finished Gasoline into CARBOB Terminal Tank

- ✦ Blending of CARBOB with California gasoline is prohibited except for specific situations that involve a changeover in service
- ✦ Address the blending of small amounts of finished gasoline into CARBOB terminal tanks
  - After calibration of ethanol meters
  - After pulling gasoline from service station tank
  - After aborted loading of ethanol and CARBOB to tanker truck

# Blending Transmix into CARBOB Terminal Tanks

- ✦ CaRFG3 regulations include provisions for enforcement protocols for blending transmix with finished gasoline but none for blending transmix with CARBOB



# Reid Vapor Pressure Control Periods for CA Gasoline Transported to Southern California by Marine Vessel Section 2262.4 (c) (4)

- ✦ The intent of this provision was to assure that gasoline produced in the Bay Area and received at a Southern California marine terminal in March would be subject to the Southern California March 1 start of the RVP season.
- ✦ The provision has had the unintended consequence of triggering the section 2270 testing requirements.
- ✦ Proposed that the fuel shall be subject to the regulatory control periods identified in section 2262.4 (b) (2) (A)

# CaRFG3 Implementation Refinements

- ✦ Plan proposed amendments for November 2004 hearing
- ✦ ARB staff to release Draft Interim policy on website <http://www.arb.ca.gov/fuels>

# Oxygen Range and Oxygenates

- ✦ Oxygen Range for 1.8% to 2.2% oxygen content is evaluated at 2.0% and for 2.5% to 2.9% is evaluated at 2.7%.
- ✦ Staff has been asked to investigate the practicality of creating a similar procedure for oxygenate content.
- ✦ To ensure that there is no loss in benefits, it is necessary to validate the CARBOB Model.

# **Implementation of Diesel Regulation**

# Diesel Fuel

# Amendments to the Diesel Fuel Regulations

- ✦ Approved July 24, 2003
- ✦ Executive Officer signed on May 10, 2004
- ✦ Submitted to OAL on June 1, 2004
  
- ✦ Staff is proposing an interim policy to allow interest parties the option to comply with the equivalent alternative limits, prior to August 1, 2004

# **Diesel Fuel Lubricity**

# ARB Diesel Fuel Lubricity Standard Phase I: Protect Existing Equipment

- ✦ 520 micron maximum WSD based on HFRR @60 deg C
- ✦ Time frame: 90 day phase-in commencing January 1, 2005
  - Amended to coincide with effective date of current ASTM ballot
- ✦ ARB lubricity standard will defer to ASTM standard if approved



# Status of ASTM Ballot

- ✦ Lubricity ballot closed May 28, 2004
  - Ballot to determine if negatives persuasive or not
  - Standard identical to ARB 2005 standard
  - Effective date: January 1, 2005

# Potential Regulatory Activities

# **Potential Modifications to the CaRFG Regulations**

# Potential Further Amendments to the CaRFG Regulations

- ✦ New SIP Commitments:
  - October 2003 SIP Hearing
  - Additional Emissions Reductions needed to meet ozone goal.
- ✦ Include examination of gasoline specifications

# Potential Further Amendments to the CaRFG Regulations

With the development of advanced emission control technologies there may be opportunity to increase synergies between the California gasoline specification and the new emission control technologies.

Staff would also like to consider whether there are possible changes that could be made to the CaRFG regulations that could increase efficiencies within the California Refinery industry will preserve existing benefits and enforceability.

# Potential Further Amendments to the CaRFG Regulations

- ✦ Strawman Concept - For discussion purpose only
  - Replace Flat Limits and Averaging Limits with new set of caps.
  - Predictive Model could be used to determine new caps
  - Distillation Temperatures limits could be replaced by a new Drivability Index

# CARB DIESEL FUEL USE WITH INTRASTATE



**MARINE**

**LOCOMOTIVE**



# Presentation Overview

- ✦ USEPA and CARB diesel fuel regulations
- ✦ Board's direction
- ✦ Harbor craft
- ✦ Intrastate locomotives
- ✦ Evaluation efforts and schedule



# USEPA Diesel Fuel Regulations

<u>TYPE</u>	<u>SULFUR*</u>	<u>DATE</u>
On-Road	500	1993
On-Road	15	2006
Non-Road**	500	2007
Non-Road	15	2010
Marine/Loco	15	2012

\* ppmw-parts per million by weight.

\*\* Includes marine and locomotives.

Note: Aromatics content limit maximum - 35% by volume.

# CARB Diesel Fuel Regulations

<u>TYPE</u>	<u>SULFUR*</u>	<u>DATE</u>
On-Road	500	1993
On-Road, Off-Road (includes ATCM for Stationary Sources)	15	2006
Marine/Loco	N/A	N/A

\* ppmw-parts per million by weight.

Note: Aromatics content limit maximum - 10% by volume, unless can meet alternate limit with equivalent emissions.

# CARB Board Direction

CARB Board Hearing: Approved CARB ULSD regulations and directed staff to evaluate the use of CARB diesel for locomotives and marine vessels (July 2003).

CARB Board Meeting: ARB staff returned with report on use of CARB diesel with marine and locomotives (October 2003).

# CARB Board Direction

CARB SIP Summit: Discussed use of CARB diesel with intrastate locomotives and harbor craft (January 2004).

CARB Board Direction: ARB staff make recommendations for extending the CARB diesel fuel regulations to intrastate locomotives and harbor craft (November 2004).

## ARB Staff Evaluation

- ✦ Evaluation: cost, feasibility, and alternatives that provide similar or better emission benefits
- ✦ Working with stakeholders to identify and gather information
  - Data on engines, fuel use, etc.
- ✦ Contacting marine and locomotive fuel suppliers.

## ARB Staff Key Efforts to Date

- ✦ Statewide Harbor Craft Survey Final Report (March 2004)
- ✦ Statewide Intrastate Locomotive Survey (May 2004)
- ✦ Workshops and Individual Meetings with Stakeholders (Ongoing)

# HARBOR CRAFT



# Harbor Craft

## Examples and Distribution

- ✦ Commercial fishing vessels (62%)
- ✦ Ferries (9%)
- ✦ Tug boats (8%)
- ✦ Work Boats (7%)
- ✦ Other (7%)
- ✦ Tow Boats (2%)
- ✦ Crew Boats (2%)
- ✦ Pilot Boats (1%)



# Harbor Craft Fuel Consumption

- ✦ Tug Boats (30%)
- ✦ Ferries (28%)
- ✦ Commercial fishing boats (22%)
- ✦ Tow Boats (11%)
- ✦ Crew Boats (4%)
- ✦ Work Boats (3%)
- ✦ Other (2%)

# Harbor Craft

## Key Characteristics

- ✦ Vessel average age: ~25 years.
- ✦ Commercial harbor craft may use up to ~70 million gallons of diesel fuel annually.
- ✦ Nearly all operations within 100 miles of California coast
- ✦ Fueling primarily occurs within California

# Harbor Craft

## Why Consider CARB Diesel?

- ✦ Will enable use of more effective control technologies.
- ✦ Could provide immediate 5-7% NO<sub>x</sub> and 10-20% PM emission reductions.
- ✦ North coast using CARB diesel.
- ✦ California ferries are required to use CARB diesel (January 1, 2003).

# Harbor Craft Key Issues

- ✦ Fuel distribution logistics
- ✦ Fuel costs
- ✦ Marine flash point

# INTRASTATE LOCOMOTIVES



# Intrastate Locomotive Survey

- ✦ Worked with industry to develop the survey.
- ✦ Mailed out on May 18, 2004.
- ✦ Also, located on ARB Website:  
<http://www.arb.ca.gov/msprog/offroad/loco/loco.htm>
- ✦ Mailed to 50 intrastate locomotive operators.
  - Class I - Intrastate Only Rail Operations
  - Passenger Train Railroads
  - Short Line Railroads
- ✦ Request responses by June 28, 2004.

# Intrastate Locomotive Survey Information

- ✦ Company - Section A
- ✦ Locomotive Engine - Section B
- ✦ Locomotive Operational - Section C
- ✦ Locomotive Fuel Consumption - Section D
- ✦ HEP Generator - Passenger Trains Only -  
Section E

# Intrastate Locomotives

## Key Characteristics?

- ✦ Estimate ~300 intrastate locomotives
- ✦ Fuel consumption ~30 million gallons
  - Class I intrastate ~10 million
  - Intrastate passenger trains ~10 million
  - Short lines ~10 million
- ✦ Proportional use of diesel fuel types:
  - CARB Diesel - ?%
  - USEPA on-road diesel - ?%
  - Non-road diesel - ?%



# Intrastate Locomotives

## Why CARB Diesel?

- ✦ Average age of locomotives > 20 years
- ✦ May be difficult to retrofit older engines
- ✦ Fuel could provide immediate NO<sub>x</sub> (5-7%) and PM (10-20%) emission reductions

# Intrastate Locomotives

## Key Issues

- ✦ Fuel distribution logistics
- ✦ Fuel costs

**INTRASTATE  
LOCOMOTIVE AND  
HARBOR CRAFT**

**“Preliminary Draft”  
REGULATORY PROPOSAL  
AND SCHEDULE**

# Work to be Done

- ✦ Assess availability of CARB diesel fuel in 2007 timeframe
- ✦ Complete harbor craft emission inventory
- ✦ Complete intrastate locomotive survey
- ✦ Prepare emission and cost-effectiveness analyses
- ✦ Prepare staff report by September 2004.

# Draft Conceptual Regulatory Language

## Title 17, CCR, Section 93114:

Proposed effective date: June 1, 2007

- ✦ Basic requirements for CARB diesel fuel:
  - 15 ppmw sulfur limit (Title 13 CCR, Section 2281)
  - 10% aromatics or equivalent emissions alternative limit (Title 13, CCR Section 2282)
- ✦ Intrastate diesel-electric locomotives
  - operate 90% in-state definition
- ✦ Harbor craft
  - all diesel marine vessels except oceangoing ships

# Draft Conceptual Regulatory Language

## Title 17, CCR, Section 93114:

(Continued)

### Alternative Emission Reduction Plan (AERP)

- ✦ Applicable to locomotives only
- ✦ Provide equivalent or greater emission reductions
- ✦ Substitute cleaner fuel or alternative control strategy
- ✦ Emission reductions must be:
  - surplus, real, quantifiable, enforceable, permanent or specified life

# Evaluation Schedule

## ✦ Workshop Schedule:

- mid July
- late August
- early October

## ✦ Staff report publication

- October 1, 2004

## ✦ Board Meeting Date

- November 18-19, 2004

# ARB Websites and List Serves

[Http://www.arb.ca.gov/msprog/offroad/](http://www.arb.ca.gov/msprog/offroad/)

- ✦ Marine Vessels -(marinevess/marinevess.htm)
- ✦ Locomotives - (loco/loco.htm)



# ARB Staff Contacts

## ✦ Harbor Craft:

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# Clean Fuel Outlets Program

# Objective

- ✦ To ensure that clean fuels are available for alternative fueled vehicles to operate and achieve the emissions benefits attributed from these vehicles

# Key Points of Program

- ✦ Require certain owners/lessors of gasoline stations to install clean fuel outlets
- ✦ Requirement is triggered when 20,000 vehicles are certified to California LEV standards on a specific fuel

# Considering Program Updates

- ✦ Ensure program considers new fuel/ vehicle technologies
  - hydrogen fuel cells
  - hybrids
- ✦ Ensure program is implemented to realize air quality benefits
  - Vehicles use alternative fuels
  - Dedicated versus flexible-fueled vehicles

# Possible Program Updates

- ✦ Short term & long term changes to incorporate Hydrogen
  - Definitions
  - Stations
  - Throughput
- ✦ Miscellaneous regulation clean up
  - renumbering
  - grammar
  - allow other data to be used when DMV data is unavailable.

# Tentative Schedule

- ✦ Next workshop - August 2004
- ✦ Board Hearing - first half of 2005

# Biodiesel



# Update on Biodiesel Activities

- ✦ Fuel specifications
- ✦ Division of Measurement Standards (DMS) amendments to regulations
- ✦ Verification of biodiesel
- ✦ AB 2899-specify standards for biodiesel and biodiesel blends

# Biodiesel Workgroup Fuel Specifications Recommendations

- ✦ Proposed oxidative and thermal stability specification
- ✦ Proposed the need to have a blend level test method
- ✦ Work through the ASTM process

# Status of Regulations

- ✦ Amendments to DMS regulations to include biodiesel fuel
  - OAL disapproved biodiesel amendments because changes made to labeling requirements needed to be renoticed
  - 15 day renotice underway
- ✦ AB2899: Proposes standards for biodiesel and biodiesel blends
  - Status: in committee

# **Presentations by Others**

# Open Discussion

# Closing Remarks