

## **TITLE 13. CALIFORNIA AIR RESOURCES BOARD**

### **NOTICE OF PUBLIC HEARING TO CONSIDER 2007 AMENDMENTS TO THE PHASE 3 CALIFORNIA REFORMULATED GASOLINE REGULATIONS**

The Air Resources Board (ARB or Board) will conduct a public hearing at the time and place noted below to consider adoption of amendments to the California Reformulated Gasoline (CaRFG) Regulations. The proposed amendments would: (1) help preserve the benefits of the Phase 2 CaRFG standards and update the Predictive Model to reflect the current motor vehicle fleet and new data on how fuel properties affect motor vehicle emissions, (2) lower the sulfur cap limit from 30 parts per million by weight (ppmw) to 20 ppmw, (3) restore the 7.00 pounds per square inch (psi) Reid vapor pressure (RVP) flat limit when the evaporative emissions portion of the Predictive Model is used to certify ethanol blends, (4) add provisions allowing for the use of alternative emission reduction plans to mitigate emissions associated with permeation, (5) add provisions to allow the option of using short term averaging to address emissions occurring when sulfur levels unintentionally exceed applicable flat or averaging limits, and (6) include other miscellaneous changes to improve consistency, flexibility, and enforceability.

DATE: June 14, 2007

TIME: 9:00 a.m.

PLACE: San Joaquin Valley Air Pollution Control District  
1990 East Gettysburg Avenue  
Fresno, California 93726

or Via Videoconference (2 Locations)  
District Northern Region Office  
4230 Kiernan Avenue, Suite 130  
Modesto, California 95356

District Southern Office  
2700 M Street, Suite 275  
Bakersfield, California 93301

This item will be considered at a one-day meeting of the Board, which will commence at 9:00 a.m. on Thursday, June 14, 2007. The agenda for the meeting will be available at least 10 days before June 14, 2007.

For individuals with sensory disabilities, this document is available in Braille, large print, audiocassette or computer disk. Please contact ARB's Disability Coordinator at (916) 323-4916 by voice or through the California Relay Services at 711, to place your request for disability services. If you are a person with limited English and would like to request interpreter services, please call ARB's Bilingual Manager at (916) 323-7053.

## **INFORMATIVE DIGEST OF PROPOSED ACTION AND POLICY STATEMENT** **OVERVIEW**

**Sections Affected:** Proposed amendments to sections 2261, 2262, 2262.3, 2262.4, 2262.5, 2262.9, 2263, 2263.7, 2264.2, 2265 (and the incorporated “California Procedures for Evaluating Alternative Specifications for Phase 3 Reformulated Gasoline Using the California Predictive Model”), 2266, 2266.5, 2270, 2271, and 2273, and proposed new sections 2260(a)(0.5), (0.7), (7.5), (8.5), (10.5), (10.7), (19.7), (23.5), and (23.7), 2262.3(d), 2264.2(a)(3), (b)(5), and (d), 2265(c)(4), 2265.1, 2265.5, and 2266(b)(3), (4), and (5) of Title 13, California Code of Regulations (CCR).

### **Background**

The ARB administers the CaRFG regulations, which have applied to all California gasoline since March 1996; the Phase 3 CaRFG standards have applied since December 31, 2003. The CaRFG regulations establish specifications for the following eight gasoline properties: sulfur, benzene, olefin, aromatic hydrocarbon, and oxygen contents, 50 percent distillation temperature (T50), 90 percent distillation temperature (T90), and summertime RVP. The Phase 3 CaRFG regulations also prohibit the use of oxygenated compounds (oxygenates) other than ethanol in CaRFG, and regulate the composition of denatured ethanol that can be blended with California reformulated gasoline blendstock for oxygenate blending (CARBOB) to produce CaRFG.

The CaRFG regulations allow refiners to use a “Predictive Model” to certify alternative formulations. The Predictive Model is a set of mathematical equations that relate emissions rates of exhaust and evaporative hydrocarbons and carbon monoxide (CO), oxides of nitrogen (NO<sub>x</sub>), and potency-weighted toxics for four toxic air contaminants (benzene, 1,3-butadiene, formaldehyde, and acetaldehyde) to the values of the eight regulated gasoline properties. An alternative gasoline formulation based on the Predictive Model is acceptable if emissions of reactivity-weighted hydrocarbons and CO (total ozone forming potential), NO<sub>x</sub>, and potency-weighted toxics resulting from this formulation are no greater than emissions from gasoline having the specifications set forth in the CaRFG standards. Currently, most of the gasoline sold in California complies with the CaRFG regulations through the use of the Predictive Model.

Since 1995, most of the State’s gasoline has contained about 2 percent oxygen by weight. From 1995 to 2002, methyl tertiary-butyl ether (MTBE) was the oxygenated compound used in most California gasoline. Since December 31, 2003 – the Phase 3 CaRFG compliance deadline – ethanol has been the only oxygenate allowed in California gasoline. The widespread use of oxygenated compounds in California gasoline has primarily resulted from two programs mandated by the federal Clean Air Act – the federal reformulated gasoline (RFG) program administered directly by the U.S. Environmental Protection Agency (U.S. EPA) in the smoggiest areas of the country, and the wintertime oxygenates program which is ultimately administered by the states. The federal Energy Policy Act of 2005 directed U.S. EPA to lift the federal

oxygen content requirement for federal RFG and set a renewable fuels standard (RFS) which requires an increasing use of renewable transportation fuel nationwide. In February 2006, U.S. EPA lifted the federal oxygen content requirement for federal RFG. The federal wintertime oxygen content requirement for carbon monoxide nonattainment areas is still in effect for wintertime gasoline sold in the South Coast Air Basin and Imperial County. Almost all gasoline marketed in California today contains ethanol.

### **The Proposed Amendments**

Health and Safety Code 43013.1 requires that the Phase 3 CaRFG regulations preserve the emissions and air quality benefits of the Phase 2 CaRFG program. The ARB staff has determined that the use of ethanol in Phase 3 CaRFG increases evaporative emissions, relative to Phase 2 CaRFG, through a process known as permeation. Permeation occurs in both on-road vehicles and off-road engines and portable fuel containers.

The staff is proposing amendments to the CaRFG regulations and an update to the Predictive Model to mitigate the excess emissions associated with permeation from on-road motor vehicles. Under the proposed amendments, starting December 31, 2009, a fuel formulation cannot be treated as fully complying with the Phase 3 CaRFG standards unless the excess emissions associated with permeation from on-road vehicles are fully mitigated.

At this time, staff does not have adequate data to design amendments to the CaRFG3 rules to ensure that the increase in evaporative emissions due to the use of ethanol in off-road engines and portable fuel containers is fully mitigated. Staff is initiating additional test programs to evaluate the effect of ethanol in gasoline on both exhaust and evaporative emissions and plans to propose appropriate mitigation strategies as soon as practical.

To mitigate the excess emissions associated with permeation from on-road vehicles, the refiners can choose one of two options. First, they can use the Predictive Model to develop an alternative fuel formulation. Using this approach will likely require the use of a very low sulfur fuel content and ethanol amounts approaching 10 percent by volume. As such, refinery modifications are needed to produce the very low sulfur fuels and rebalance the production to accommodate the higher ethanol contents. Therefore, the staff is proposing a second option, referred to as an alternative emissions reduction plan (AERP).

The AERP would allow a producer, or an importer that produces gasoline, to mitigate the excess emissions associated with permeation by obtaining emission reductions from combustion or other gasoline-related sources. The producer or importer must still comply with the default flat limits, averaging limits, a test-certified alternative gasoline formulation, or the non-permeation portion of the Predictive Model. All alternative emissions reduction plans sunset on December 31, 2011, unless the Executive Officer approves an extension in advance.

The need to address excess emissions associated with permeation caused by the use of ethanol will make it more difficult and costly for refiners to comply with the amended Phase 3 CaRFG regulations as proposed. Therefore, the staff is also proposing to provide some additional flexibility to the producers and importers to address the expected ongoing difficulties in meeting the very low sulfur content requirements. This option allows producers and importers to specifically offset a batch of gasoline that does not meet CaRFG3 standards due to an unintentionally high sulfur content. In this case, the producer or importer would be permitted to offset any increased emissions by producing a series of subsequent batches that are cleaner than the Phase 3 CaRFG standards. In no event could any batch exceed the cap limit for sulfur. This option would apply beginning December 31, 2009.

The Phase 3 CaRFG regulations added provisions allowing gasoline producers or importers to elect to use a new evaporative emissions element of the Predictive Model. In this Predictive Model evaporative emissions element, the Phase 3 CaRFG standard for RVP was set at 0.10 psi below the regular Phase 3 CaRFG flat limit for RVP in order to compensate for an expected increase in volatility due to the commingling of California gasolines blended with ethanol and California gasoline blended without ethanol. Since the use of the evaporative portion of the Predictive Model is voluntary, there is no assurance that any increase in emissions associated with commingling is actually being offset. The vast majority of gasoline now sold in California is produced with ethanol, and it is expected this will continue in the future given the federal RFS. Therefore, an emissions increase from commingling ethanol blended gasolines and non-ethanol blended gasolines in the fuel tanks of motor vehicles will only occur when non-ethanol blends are introduced in the California market. Staff is accordingly proposing that all non-ethanol blends of gasoline be certified based on a flat limit of 6.90 psi RVP, while the normal Phase 3 CaRFG flat limit of 7.00 psi RVP be used for ethanol blends using the evaporative emissions element of the Predictive Model.

The staff is also proposing that the enforcement caps for sulfur content in gasoline be lowered from 30 parts per million by weight (ppmw) to 20 ppmw (21 ppmw for CARBOB). Based on its analysis of projected complying formulations using the Predictive Model, staff believes that refiners will generally not be able to produce complying California gasoline with sulfur limits higher than 20 ppmw. The proposed lower sulfur cap will not significantly affect flexibility to make complying fuels. It will, however, increase the enforceability of the CaRFG program by making it easier to detect noncomplying gasoline and help to protect the performance of sulfur-sensitive emission control components.

The staff is proposing other amendments to the CaRFG regulations to improve consistency, flexibility, and enforceability. This includes proposed amendments to section 2262.9 and section 2266.5 that would change the maximum allowed denaturant content in denatured ethanol, consistent with the current standards of the American Society of Testing and Materials.

## **COMPARABLE FEDERAL REGULATIONS**

The federal RFG regulations apply to about 80 percent of California's gasoline and are contained in 40 CFR §§ 80.40 and following. The CaRFG regulations apply to all gasoline sold, supplied, or offered in California. All CaRFG meets or exceeds the requirements of the federal RFG regulations resulting in significant additional emission reductions. Under 40 CFR § 80.81, gasoline meeting the Phase 3 CaRFG standards is exempt from several of the enforcement requirements of the federal RFG regulations.

The RFS standard of the Energy Policy Act of 2005 requires the use of renewable transportation fuels nationwide in an increasing amount annually. On April 10, 2007, the U.S. EPA Administrator announced the adoption of regulations for an RFS program for 2007 and beyond, contained in 40 CFR §§ 80.1100 and following.

## **AVAILABILITY OF DOCUMENTS AND AGENCY CONTACT PERSONS**

The ARB staff has prepared a Staff Report: Initial Statement of Reasons (ISOR) for the proposed regulatory action, which includes a summary of the environmental and economic impacts of the proposal and supporting technical documentation. The report is entitled "Proposed 2007 Amendments to the Phase 3 California Reformulated Gasoline Regulations."

Copies of the ISOR and the full text of the proposed regulatory language, in underline and strikeout format to allow for comparison with the existing regulations, may be accessed on the ARB's web site listed below, or may be obtained from the Public Information Office, Air Resources Board, 1001 I Street, Visitors and Environmental Services Center, First Floor, Sacramento, CA 95814, (916) 322-2990 at least 45 days prior to the scheduled hearing (by April 26, 2007).

Upon its completion, the Final Statement of Reasons (FSOR) will also be available and copies may be requested from the agency contact persons in this notice, or may be accessed on the ARB's web site listed below.

Inquiries concerning the substance of the proposed amendments may be directed to the designated agency contact persons, Mr. Dean C. Simeroth, Chief, Criteria Pollutants Branch, Stationary Source Division, at (916) 322-6020, or Mr. Steven Brisby, Manager, Fuels Section, (916) 322-6019.

Further, the agency representative and designated back-up contact persons to whom nonsubstantive inquiries concerning the proposed administrative action may be directed are Alexa Malik, Manager, Board Administration & Regulatory Coordination Unit, (916) 322-4011, or Amy Whiting, Regulations Coordinator, (916) 322-6533. The Board staff has compiled a record for this rulemaking action, which includes all the information upon which the proposal is based. This material is available for inspection upon request to the contact persons.

This notice, the ISOR and all subsequent regulatory documents, including the FSOR, when completed, will be available on the ARB Internet site for this rulemaking at <http://www.arb.ca.gov/regact/2007/carfg07/carfg07.htm>.

## **COSTS TO PUBLIC AGENCIES AND TO BUSINESSES AND PERSONS AFFECTED**

The determinations of the Board's Executive Officer concerning the costs or savings necessarily incurred by public agencies, private persons and businesses in reasonable compliance with the proposed regulations are presented below.

In developing this regulatory proposal, ARB staff evaluated the potential economic impacts on representative private persons or businesses. The only entities in California that would incur significant compliance costs would be 12 large petroleum refineries and one small refinery. The potential total annualized cost would be about \$100 million per year, or less than 1 cent per gallon of CaRFG produced.

The Executive Officer has made an initial determination that the proposed regulatory action will not have a significant statewide adverse economic impact directly affecting businesses, including the ability of California businesses to compete with businesses in other states, or on representative private persons.

In accordance with Government Code section 11346.3, the Executive Officer has determined that the proposed regulatory action will not affect the creation or elimination of jobs within the State of California, the creation of new businesses or elimination of existing businesses within the State of California, or the expansion of businesses currently doing business within the State of California. A detailed assessment of the economic impacts of the proposed regulatory action can be found in the ISOR.

The Executive Officer has also determined, pursuant to title 1, CCR, section 4, that the proposed regulatory action will not significantly affect small businesses because the affected refineries are not small businesses.

In accordance with Government Code sections 11346.3(c) and 11346.5(a)(11), the Executive Officer has found that the reporting requirements of the CaRFG regulations which apply to businesses are necessary for the health, safety, and welfare of the people of the State of California.

Pursuant to Government Code sections 11346.5(a)(5) and 11346.5(a)(6), the Executive Officer has determined that the proposed regulatory action will not create significant costs or savings to any state agency or in federal funding to the state, costs or mandate to any local agency or school district whether or not reimbursable by the state pursuant to Part 7 (commencing with section 17500), Division 4, Title 2 of the Government Code, or other nondiscretionary cost or savings to state or local agencies.

Before taking final action on the proposed regulatory action, the Board must determine that no reasonable alternative considered by the Board or that has otherwise been

identified and brought to the attention of the Board would be more effective in carrying out the purpose for which the action is proposed or would be as effective and less burdensome to affected private persons than the proposed action.

### **SUBMITTAL OF COMMENTS**

The public may present comments relating to this matter orally or in writing at the hearing, and in writing or by e-mail before the hearing. To be considered by the Board, written submissions not physically submitted at the hearing must be received **no later than 12:00 noon, June 13, 2007**, and addressed to the following:

Postal mail: Clerk of the Board, Air Resources Board  
1001 I Street, Sacramento, California 95814

Electronic submittal : <http://www.arb.ca.gov/lispub/comm/bclist.php>

Facsimile submittal: (916) 322-3928

Please note that under the California Public Records Act (Govt. Code section 6250 et. seq.), your written and oral comments, attachments and associated contact information becomes part of the public record and can be released to the public upon request. This includes your personal information, such as your home address, your home phone number, and your personal email address. Additionally, your comments, attachments and associated contact information may become available to Google or other search engines.

The Board requests but does not require that 30 copies of any written statement be submitted and that all written statements be filed at least 10 days prior to the hearing so that ARB staff and Board Members have time to fully consider each comment. The ARB encourages members of the public to bring to the attention of staff in advance of the hearing any suggestions for modification of the proposed regulatory action.

### **STATUTORY AUTHORITY AND REFERENCES**

This regulatory action is proposed under that authority granted in sections 39600, 39601, 43013, 43013.1, 43018, and 43101, Health and Safety Code, and *Western Oil and Gas Ass'n. v. Orange County Air Pollution Control District*, 14 Cal.3d 411, 121 Cal.Rptr. 249 (1975). This regulatory action is proposed to implement, interpret, and make specific sections 39000, 39001, 39002, 39003, 39010, 39500, 39515, 39516, 41511, 43000, 43013, 43013.1, 43016, 43018, 43101, and 43830.8, Health and Safety Code, and *Western Oil and Gas Ass'n. v. Orange County Air Pollution Control District*, 14 Cal.3d 411, 121 Cal.Rptr. 249 (1975).

## **HEARING PROCEDURES**

The public hearing will be conducted in accordance with the California Administrative Procedure Act, Title 2, Division 3, Part 1, Chapter 3.5 (commencing with section 11340) of the Government Code.

Following the public hearing, the Board may adopt the regulatory language as originally proposed or with nonsubstantial or grammatical modifications. The Board may also adopt the proposed regulatory language with other modifications, if the text as modified is sufficiently related to the originally proposed text that the public was adequately placed on notice that the regulatory language as modified could result from the proposed regulatory action. In such event, the full regulatory text, with the modifications clearly indicated, will be made available to the public for written comment at least 15 days before it is adopted.

The public may request a copy of the modified regulatory text from the ARB's Public Information Office, Air Resources Board, 1001 I Street, Visitors and Environmental Services Center, 1<sup>st</sup> Floor, Public Information Office, Sacramento, CA 95814, (916) 322-2990.

CALIFORNIA AIR RESOURCES BOARD

Catherine Witherspoon  
Executive Officer

Date: April 17, 2007