

California Environmental Policy Council

Multimedia Evaluation of Amendments to the California Diesel Fuel Regulations

April 30, 2004

California Environmental Protection Agency



Air Resources Board

Requirements

- ✦ **Health and Safety Code, Section 43830.8 states that:**
 - before the ARB can adopt any regulation related to a specification for motor vehicle fuel, a multimedia evaluation must be conducted and reviewed by the California Environmental Policy Council (CEPC)
 - after initial evaluation, if CEPC determines the regulation will not have any significant adverse impact on public health and environmental, ARB may adopt it without being subject to a multimedia evaluation.

Current Diesel Fuel Specifications

- ✦ **Implemented in 1993, CA Diesel Regulations requires:**
 - Sulfur Limit: 500 ppmw
 - Aromatic Hydrocarbon: 10% vol. for large refinery and 20% vol. for small refinery.
- ✦ **Significant Emission Reduction:**
 - 80% SO_x
 - 25% PM
 - 7% NO_x

Governor's Diesel Fuel Task Force

- ✦ **In 1994, Governor's Diesel Fuel Task Force recommended a voluntary Diesel fuel lubricity standard**
 - California refining industry has adhered to the voluntary standard since 1994

Risk Reduction Plan

- ✦ **In 2001, ARB adopted the Diesel Risk Reduction Plan to reduce exposure to Diesel PM, a Toxic Air Contaminant.**
 - Reduce diesel PM emissions and associated health risks by 85% by 2020
 - Establish more stringent emission standards for new diesel engines
 - Establish particulate trap retrofit requirements
 - Require 15-ppmw sulfur limit for California diesel fuel for successful implementation

New Diesel Fuel Specifications

- ✦ **In July 2003, ARB approved proposed amendments to the California Diesel Regulations**
 - Sulfur Limit: 15 ppmw
 - Add a set of Alternative Equivalent Limits as another option for meeting the 10% aromatic hydrocarbon standard.
 - Establish a diesel fuel lubricity standard of 520 microns wear scar diameter (WSD).

Amended Sulfur Specification

- ✦ **Reduce Sulfur Limit from 500 to 15 ppmw**
- ✦ **Impacts:**
 - In 2006, reduce emissions, 0.4 tpd SO_x (or 90%) and 0.6 tpy PM (or 4%)
 - Reduce atmospheric deposition of sulfuric acid, sulfates and other diesel emissions related compounds into water bodies.
 - Additional processing to produce low sulfur diesel may increase Greenhouse Gases emissions. However, this will be offset by the effect of CO₂ reduction from the use of low sulfur diesel

Alternative Equivalent Limits

- ✦ A new set of fuel specifications provided as an additional alternative to meeting the 10% aromatics hydrocarbon standard
- ✦ **Impact:**
 - No increase in emissions, because equivalent limits are based on an average of existing certified alternative formulations

New Diesel Lubricity Standard

- ✦ **New fuel lubricity standard for CA diesel fuel starting August 1, 2004:**
 - High Frequency Reciprocating Rig (HFRR) maximum wear scar diameter (WSD) of 520 microns.
- ✦ **Impact:**
 - no significant impacts on public health and environmental.
 - Identical to standard proposed by ASTM.
 - Sunsets if ASTM adopts standard
 - At least as stringent as current voluntary standard.
 - Additives used since 1994

External Scientific Peer Review for the July, 2003 ARB Hearing

✦ Peer Review Panel:

- Dr. Wayne Miller - UC Riverside
- Dr. Robert Sawyer - UC Berkeley
- Dr. Don Lucas - UC Berkeley
- Dr. Larry Caretto - CSU, Northridge

✦ The panel concurs with ARB's conclusion regarding:

- Scientific basis
- Estimation of emissions benefits
- No significant adverse impact on public health and environment.

Environmental Evaluation Policy Council Workgroup

- ✦ **ARB Staff's initial evaluation of the amended regulations was reviewed by Interagency Multimedia Fuels Workgroup:**
 - Air Resources Board
 - Office of Environmental Health Hazard Assessment
 - Department of Toxic Substances Control
 - State Water Resources Control Board

Environmental Policy Council Workgroup

- ✦ **Found that the diesel sulfur limit, equivalent alternative limits, and lubricity standard have no significant adverse impact on public health and the environment compared to the current diesel fuel regulations.**

Recommendation

- ✦ **The ARB's Staff recommends that:**
 - the CEPC find that the proposed amendments to the California Diesel Regulations will not have any significant adverse impact on public health and the environment.
 - the CEPC determine that no further multimedia evaluation is necessary.