Proposed Emergency Regulatory Amendment Delaying the January 1, 2005 Implementation Date for the Diesel Fuel Lubricity Standard

November 24, 2004
Overview

- Background
- Issues
- Proposal
- Impacts
- Recommendation
Diesel Fuel Lubricity

- Ability of diesel fuel to provide surface contact lubrication
- Required to protect fuel pumps and injection systems from excessive wear
- Dependent on presence of trace components that provide surface-active molecules
- Hydrotreating to reduce sulfur levels also reduces components that provide lubricity
Diesel Fuel Lubricity Standard

In 2003, the Board approved a lubricity standard to assure adequate diesel fuel lubricity as 15 ppm sulfur implementation date approaches.
ARB Diesel Fuel Lubricity Standard

- Maximum wear scar diameter of 520 microns based on High Frequency Reciprocating Rig (HFRR) test
- January 1, 2005 implementation date
- Provision to sunset standard if Division of Weights and Measures (DMS) enforces a standard at least as stringent
ASTM Diesel Fuel Lubricity Standard

- Identical to ARB standard
- Effective date January 1, 2005
- ASTM currently balloting to modify effective date to 1/1/06
California Diesel Fuel Lubricity

- Lubricity recognized as concern with ARB 1988 approval of diesel fuel sulfur and aromatic hydrocarbon statewide standards
1993 Governor’s Diesel Fuel Task Force

1994 recommendation:
- minimum lubricity level of 3000 grams scuffing load per Scuffing Load Ball-on-Cylinder Lubricity Evaluator (SLBOCLE) test
Since 1993, refiners have voluntarily maintained a minimum lubricity level
- 3100 grams scuffing load based on SLBOCLE test
Current California Lubricity Additive Use

11 of 15 California refineries producing CARB diesel use lubricity additives to some degree

- Existing additization rates are 30 to 200 ppm
- Expected additization rates to increase by 25 to 50 ppm to meet January 1, 2005 ARB standard
Future California Lubricity Additive Use

- 2006 15 ppm sulfur standard will likely require a significant increase in additization rates
United States Lubricity Additive Use

- Less hydrotreating required for EPA diesel compared to CARB diesel
- Lubricity additive use not as prevalent
- ASTM lubricity standard may require estimated 30 - 40% of current production to be additized
- With 2006 15 ppm sulfur standard all fuel may require additization
Other Standards

- Both Europe and Canada have a more stringent lubricity standard than ARB standard
  - Maximum WSD of 460 microns
Jet Fuel Contamination Concern with Lubricity Additive in Pipeline

- Diesel fuel has historically been additized at the refinery then shipped through the common carrier pipeline.
- Two instances of jet fuel contamination in California in last 10 years.
- No change in pipeline policy was expected until 2006.
Recent Increased Level of Concern Led to Pipeline Additive Ban

✦ Joint Subcommittee E / Subcommittee J Task Force met 10/22/04

- Expected increase in additive use due to implementation of ARB and ASTM lubricity standards brought issue to forefront
- Studies presented on possible effects of contamination on jet fuel
- Increased level of concern regarding possible lubricity additive contamination in jet fuel
Change in Kinder Morgan Pipeline Policy

- Kinder Morgan notification to shippers on pipeline on 10/26/04:
  - No additized diesel permitted in pipeline
  - Effective immediately
Disruption of California Diesel Fuel Supply Imminent

- Refiners, pipeline operators, and state agencies held teleconferences to discuss impacts and options
- Nearly 50% of diesel supply impacted
- Terminal additization not available
- Work arounds not feasible:
  - Trucking: limited by driver and truck availability
  - Splash blending at terminals: safety concerns
Interim Pipeline Protocol

- Interim pipeline protocol worked out between Kinder Morgan, refiners, and government agencies
Interim Pipeline Protocol

- Temporary protocol to allow time for installation of additization injection equipment at the terminals
  - Lubricity additization rates will remain at historical levels until terminal additization can be implemented
  - Kinder Morgan will coordinate shipments to assure that jet fuel will not immediately follow lubricity additized diesel fuel
Kinder Morgan Requested a Delay to January 1, 2005 Implementation Date

- Implementation of 520 micron maximum WSD standard is expected to increase additization levels
- Increased risk of downstream contamination
- Terminal additization will not be installed and operational for most terminals by the 1/1/05 effective date
Contamination Issue a National Concern

- Some Pipeline Operators Outside California Banning Lubricity Additives
- Terminal additization not available in majority of locations
Possible Delay of National Lubricity Standard

- Twenty-one states have adopted newest version of ASTM D 975 as of 10/18/04
  - North Carolina is first to issue letter suspending enforcement of standard until 10/1/05
  - California DMS will extend enforcement discretion if requested by letter of application

- Delay of ASTM effective date to 1/1/06 currently being balloted
Proposal
Requirement for Adopting Emergency Amendment

- Agency authorized to amend a regulation on emergency basis upon finding that:
  - Amendment is necessary for the immediate preservation of the public health and safety or general welfare
Emergency Amendment Limitation

- Amendment adopted on an emergency basis remains in effect no more than 120 days
Proposal: Delay Implementation for 120 Days

- Delay all 2005 phase-in dates for lubricity standard until May 1, 2005
- Some form of terminal additization projected to be in place by that date
- Delay does not apply to vehicular diesel fuel represented as having a sulfur content not exceeding 15 ppm
Rationale for Proposal

- Delay necessary to avoid disruption of supplies if refiners are unable to ship fuel additized to meet lubricity standard through pipeline
Potential Impacts of Proposal

✧ Impact on production of diesel fuel
  – No adverse impact

✧ Environmental impact
  – No increase in emissions since historic lubricity levels will be maintained

✧ Economic impact
  – No adverse economic impacts
Staff recommends that:

- Finding of emergency be made based on disruption of diesel supplies if lubricity standard is implemented before terminal additization is in place

- Implementation dates of the diesel fuel lubricity standard, with the exception of 15 ppm sulfur diesel, be delayed until May 1, 2005