

**AGENDA ITEM 94-9-1**

**PUBLIC HEARING TO CONSIDER NEW SPECIFICATIONS FOR DIESEL ENGINE CERTIFICATION FUEL, PROPOSED AMENDMENTS TO THE OXYGEN SPECIFICATION FOR NATURAL GAS CERTIFICATION FUEL, AND PROPOSED AMENDMENTS TO THE COMMERCIAL MOTOR VEHICLE LIQUEFIED PETROLEUM GAS FUEL REGULATIONS**

Copies of the slide presentation which supported the Air Resources Board's oral staff presentation given by Mr. Jose Gomez.

Attachments

# **Amendments to the Specifications for Diesel & Natural Gas Engine Certification Fuel, & Commercial Liquefied Petroleum Gas Regulations**

**BOARD HEARING**

**September 22, 1994**

**Hyatt Hotel 6225 West Century Blvd, LA**

**California Environmental Protection Agency**



**Air Resources Board**

# Outline

**Amendments to fuel specifications for:**

- **Diesel Engine Certification Fuel**
- **Oxygen Content Requirement in Natural Gas Certification Fuel**
- **Propene Requirement in Commercial Motor Vehicle LPG Regulations**

# **Why Establish Commercial & Certification Fuel Specifications?**

- **Exhaust standards for motor vehicles**
- **Commercial fuel specifications**
  - **Gasoline**
  - **Diesel fuel**
  - **Alternative fuels**

# Board-Adopted Certification Fuel Specifications

## Fuel

## Date of Adoption

- Diesel 1991, 92, 93
- Phase 2 RFG 1992
- Alternative Fuels\* 1992
  - CNG, LPG,
  - M100, M85

\* Commercial and certification fuels adopted concurrently

# **Proposed Specifications for Diesel Engine Certification Fuel**

# **What Fuels Are Now Used to Certify Diesel Engines?**

- **Federal specifications**
- **California specifications**
  - **Allow use of low-aromatic hydrocarbon diesel fuel to certify certain diesel engines and vehicles**

# **Why Propose Specifications for Diesel Engine Certification Fuel?**

- **Current specifications do not properly define several key properties:**
  - **Aromatic content**
  - **Natural cetane number**
  - **Sulfur content**
- **Engine manufacturers requested a more consistent certification fuel**

# What Are the Proposed Specifications for Diesel Engine Certification Fuel?

| <b>Property</b>                  | <b>Units</b> | <b>Specification</b> |
|----------------------------------|--------------|----------------------|
| <b>Aromatic content</b>          | <b>vol.%</b> | <b>8 - 12</b>        |
| <b>Natural Cetane<br/>Number</b> | <b>--</b>    | <b>47- 55</b>        |
| <b>Sulfur</b>                    | <b>wt.%</b>  | <b>0.01 - 0.05</b>   |
| <b>Nitrogen</b>                  | <b>ppm</b>   | <b>100 - 500</b>     |

# What Are the Proposed Specifications for Diesel Engine Certification Fuel?

Cont.

| <b>Property</b>           | <b>Units</b>    | <b>Specification*</b> |
|---------------------------|-----------------|-----------------------|
| <b>Distillation Range</b> | <b>Degree F</b> | <b>---</b>            |
| <b>API Gravity</b>        | <b>Degree</b>   | <b>40 - 44</b>        |
| <b>Polyaromatic</b>       | <b>wt. %</b>    | <b>1.4</b>            |
| <b>Viscosity</b>          | <b>cSt</b>      | <b>1.6 - 2.0</b>      |
| <b>Flash point (min)</b>  | <b>Degree F</b> | <b>130</b>            |

**Same as current specifications**

# **Test Method Reproducibility**

- **Cetane range incorporates test method reproducibility**

# Summary

- **Represent emission performance of in-use fuels**
- **Cost similar to current certification fuels**
- **Provides narrow ranges to ensure consistent test results**

# **Amendments to the Specifications for CNG Certification Fuel**

# **Why Establish Specifications for CNG Certification Fuel?**

- **Certification specifications were adopted March 1992**
- **Specifications include an oxygen content standard**

# **Why Propose Modifications to the Oxygen Requirement?**

- **Safety concerns with blending required oxygen level**

# What Are the Proposed Modifications to the CNG Certification Fuel?

- Current requirement  $0.5 \pm 0.1$  mole percent
- Proposed oxygen requirement 0.5 mole percent maximum

# Summary

- **Addresses safety concern**
- **Testing indicates no significant impact on emissions**
- **Fuel consistent with commercial fuels**

# **Amendments to the LPG Regulations**

# **What Are the Specifications for LPG Fuel?**

- **Regulations adopted March 1992**
- **Requirements for propene content  
of LPG fuel**
  - **10.0 vol. % effective January 1, 1993**
  - **5.0 vol. % effective January 1, 1995**

# **Why Propose Amendments to the LPG Regulations?**

- Up to 50% of LPG produced at refineries does not meet 5.0 vol. % limit**
- Could require segregated storage and distribution system**
- Effect of the Phase 2 RFG regulations on quality of LPG fuel**

# **What Are the Proposed Amendments to the LPG Regulations?**

- **Continue 10 vol. % propene  
requirement until January 1, 1997**

# **No Significant Adverse Impacts Overall**

- **Most LPG used for vehicle fuel would meet 5.0 vol. % propene**
- **Avoids possible supply problems which would increase emissions**

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# Summary

- **Ensure adequate supplies of LPG**
- **Provide additional time to:**
  - **Evaluate impact of Phase 2 RFG regulations on quality of LPG fuel**
  - **Develop and implement segregated storage and distribution system, if needed**

# **Staff Recommendation**

- **Adopt:**
  - **proposed specifications for diesel engine certification fuel**
  - **proposed modification to the oxygen content of the CNG certification fuel**
  - **proposed modification to the LPG fuel regulation**