PUBLIC WORKSHOP TO DISCUSS POSSIBLE REGULATORY APPROACHES TO REDUCE EMISSIONS FROM STATIONARY DIESEL-FUELED ENGINES

Proposed Airborne Toxic Control Measures to Reduce Diesel Particulate Matter Emissions from In-Use and New Stationary Diesel-Fueled Engines

September 4, 2002

California Environmental Protection Agency

Air Resources Board

Stationary Diesel-Fueled Engine Impacts

- **Statewide Emissions**
  - **16,000 stationary diesel fueled engines (11,000 emergency standby / 5,000 prime)**
  - **1.5 tons of diesel PM emitted per day**
- **Near Source Risk**
  - **Typical emission rate of in-use engine (0.5-0.6 g/bhp-hr)**
  - **Typical horsepower ranges from 400-600 hp**
  - **Near source risk can be >100/million**

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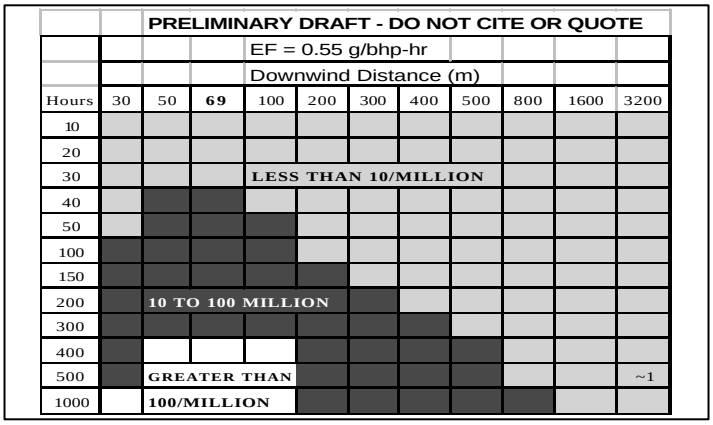
Potential Near Source Risk

- **Diesel Exhaust PM Risk**
  Potential Cancer Cases in a Million for a 550 hp Engine



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ATCM Development Process

- **Held Public Workshops**
  - **February 2001 - Discussed Risk Reduction Plan**
  - **January 2002 - Presented regulatory concepts**
  - **April 2002 - Presented proposed draft regulatory language**
- **Coordination with CAPCOA Working Group**
- **Ongoing consideration of verbal and written comments on regulatory concepts and draft regulatory language**

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ATCM Development Process (continued)

- Control Equipment Demonstration Program
  - CEC/UCR Bug Demonstration
  - ARB PM Control Technology Demonstration
- Emission Inventory Improvement

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Basic Control Approach to Developing Air Toxic Measures (ATCMs)

- Establish diesel PM emission standards that are based on the use of best available diesel PM control technologies and lowest-emitting diesel-fueled engines
- Consider contribution to overall ambient PM and risk levels, potential near source risk, and the cost of controls when establishing emission standards

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Key Elements of the September 2002 Proposed ATCMs

- Applicability of Emission Standards
- Definitions
- PM Emission Standards
- Fuel Requirements
- Initial Recording Requirements
- Initial Demonstration of Compliance
- Exemptions
- Compliance Schedule
- PM Emission Testing

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Applicability of Emission Standards

- In-Use Stationary Diesel ATCM
  - Applies to any person who owns or operates a stationary prime or emergency standby diesel engine greater than or equal to 50 hp
- New ATCM
  - Applies to any person who sells, leases, purchases, owns, or operates a new stationary prime or emergency standby diesel engine greater than or equal to 50 hp
  - Applies to any person who sells a new stationary prime or emergency standby diesel engine less than or equal to 50 hp
- Does not apply to Agricultural Engines

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Definitions

- **Emergency Standby Engine**
  - **A stationary CI engine used only as follows**
    - **emergency use (power, water pumping, etc.)**
    - **maintenance and testing (limited number of hours)**
- **New Engine**
  - **Installed, relocated, reconstructed after the effective date of the New Engine ATCM**
  - **Exact replacement installed on a temporary basis for maintenance of existing engine is <u>not</u> considered new.**

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Proposed PM Emission Standards

- **In-Use Stationary Diesel ATCM**
  - **E/S: Tiered approach**
  - **Prime: 0.01 g/bhp-hr, or 85% reduction, or replace new (0.01) engine**
- **New Stationary Diesel ATCM**
  - **E/S (≥50 hp): 0.15 g/bhp-hr**
  - **Prime(≥50 hp): 0.01 g/bhp-hr**
  - **< 50 hp: Applicable Off-Road Standard**

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Proposed Change in Approach from the April 2002 In-Use ATCM Based on Cost and Risk Consideration

- Cost of retrofit anticipated to be high
- Near source risk dependant on hours of operation
- Recommend a tiered approach to establishing diesel PM standards for in-use emergency stand-by engines

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Proposed Tiered Approach for PM Emission Standards for In-Use E/S Engines

- E/S engines that operate 15 hours/year or less (non-emergency) would be in compliance
- E/S engines that operate more than 15 hours/year would be required to meet a tiered schedule. See example below:

PM EMISSION RATE (g/bhp-hr)	MAXIMUM ALLOWABLE ANNUAL HOURS OF OPERATION (Maintenance and Testing)
0.50	30
0.40	40
0.15	100

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Proposed Fuel Requirements

- Owners opting to use diesel fuel in meeting the emission requirements must use "vehicular diesel fuel"
  - CARB diesel
  - Low-sulfur CARB diesel fuel
- Owners opting to use fuel other than diesel fuel are limited to ARB verified fuels

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Initial Recordkeeping Requirements

- In-Use and New Stationary Diesel ATCM
  - Requires information be submitted to district 6 months after effective date
  - Applies to any person who owns or operates a stationary prime or emergency standby CI engine greater than or equal to 50 hp
- New Stationary Diesel ATCM Dealer Notification Requirement

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Monitoring Requirements

- **In-Use and New Stationary Diesel ATCM**
  - **Hour meters for E/S engines**
  - **Backpressure monitor if DPF installed**
  - **Other**

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Initial Demonstration of Compliance

- **The owner or operator is required to provide District with emissions data to show compliance, such as:**
  - **emission test data on engine**
  - **emission test data on similar engine**
  - **off road certification data**
  - **verification data**
  - **manufacturers data**
- **We are proposing that a default value of 1.0g/bhp-hr be substituted for baseline emission levels, if baseline test information is unavailable and is required for compliance**

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Exemptions

- **Both New and In-Use ATCMs**
  - **Agricultural engines**
  - **"True Fidelity" military engines**
- **In-Use ATCM, only**
  - **In compliance with *Guidance***
  - **San Clemente and San Nicholas Islands**
  - **Delay in compliance until 2010 for engines located 2 miles from receptor and operating over 500 hours/year**

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Compliance Schedule

- **In-Use ATCM**
  - **Pre-1989: July 1, 2005**
  - **1990 thru 1995: July 1, 2006**
  - **Post 1995: July 1, 2007**
  - **Compliance Plan Option for owners of four or more engines**
- **New ATCM**
  - **120 days after effective date of ATCM (~early 2004)**

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PM Emission Testing

- ATCMs proposes:
  - ARB Method 5 and 100, carried out under steady state operation in accordance with ISO 8178 loading cycles
  - Alternative method approved by the District
- Test method evaluation underway
  - Method 5/100
  - Off-road Certification Method (ISO 8178)
  - Industry/ARB/District Workgroup established to evaluate and propose appropriate test method

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Next Steps

- Continue informal regulatory process
- Next Workshop tentatively scheduled for November
- Staff plans to present ATCMs to Board in first-half of 2003

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