

Amendments to Verification Procedure Public Workshop

October 3, 2006



California Environmental Protection Agency

Air Resources Board

Verification Procedure Background

- **Adopted May 2002**
- **Ensures that technology achieves emissions reductions of diesel PM and NO_x that are real and durable**
- **Requires warranty coverage and in-use compliance testing**
- **Amendments adopted February 2004 and March 2006**
 - **Most recent change includes the requirement that verified systems must not increase NO₂ emissions by more than 30% beginning January 1, 2007 and 20% in 2009**

Outline of Proposed Amendments

- Conditional Extension
- Alternative Diesel Fuel Definition
- Other Proposed Modifications:
 - In-Use Compliance
 - Verification Transfers
 - Acceptance of existing data
 - Record keeping

Conditional Extension

- **Conditional Verifications already allowed for off-road and stationary applications (Section 2704(j))**
- **Conditional extensions would allow applicants to apply for conditional extensions for their verified systems for on-road applications**
- **Expedites the verification process for reliable systems that can be applied to a broader range of applications**
- **Provides the opportunity to sell systems while obtaining data and information required for a full verification**
- **Will satisfy fleet rules**

Conditional Extension Requirements

- Must be a verified system (on-road, off-road, stationary)
- Can extend to on-road applications only
- Must be supported by sound science, engineering, and data

Conditional Extension

What Applicants Must Do

- Must apply for a conditional extension
- Application must include information per Section 2702 of the Procedure including a plan for meeting the requirements of Section 2703-2706

Examples

- Diesel Particulate Filter verified for off-road engines with PM emissions of 0.4 g/bhp-hr extended to on-road engines with PM emissions of 0.1 g/bhp-hr
- Temperature sensitive flow through filter verified for on-road engines extended to other on-road engines

Fuel Based Strategies

- Proposed amendment changes the definition of alternative diesel fuels
- Proposed amendment changes testing requirements of fuel additive based systems

Fuel Based Strategies

Current Definition

- **Section 2701(a)(2)**

“An emission control strategy using a fuel additive will be treated as an alternative diesel fuel based strategy unless:

- (A) The additive is supplied to the vehicle or engine fuel by an on-board dosing mechanism, or**
- (B) The additive is directly mixed into the base fuel inside the fuel tank of the vehicle or engine, or**
- (C) The additive and base fuel are not mixed until vehicle or engine fueling commences, and no more additive plus base fuel combination is mixed than required for a single fueling of a single engine or vehicle.”**

Fuel Based Strategies

Modified Definition

- An emission control strategy using a fuel additive will be treated as an alternative diesel fuel based strategy
- Proposed change will treat all fuel based strategies as alternative diesel fuel based strategies
- Requires fuel additives to comply with the requirements of Section 2710

Fuel Based Strategies Testing Modifications

- All fuel based strategies will comply with testing per Section 2710
- FTP cycle for on-road applications
- Off-road and stationary applications must adhere to the appropriate test cycles per Section 2703(e)(2) and 2703(e)(3)

In-Use Compliance Modifications

- Clarifies in-use compliance requirements
- Adds deadline requirements and testing proposal requirements

In-Use Compliance Overview

- When 50 units are sold in-use compliance requirements must be met
- Applicant must submit Phase 1 testing proposal for approval
- Applicant must test at least 4 units
- Applicant must submit Phase 1 report

In-Use Compliance Overview

- Applicant must submit Phase 2 testing proposal for approval
- Applicant must test at least 4 units
- Applicant must submit Phase 2 report
- If all requirements are met, Executive Officer will issue a letter of compliance

In-Use Compliance Modifications

Testing Proposal Deadlines

- Testing proposals for phase 1 and phase 2
 - Must be submitted no later than 90 days after 50th unit sold (phase 1)
 - Must be submitted no later than 3 years after 50th unit sold (phase 2)
- Both proposals must include information required in Section 2709(h), a test plan, a test engine/vehicle description, and a list of candidate test systems

In-Use Compliance Modifications

Test System Selection

- Phase 1:
Select from control systems than have been operated at least 25% of the minimum warranty period or 1 year, whichever comes first
- Phase 2:
Select from control systems than have been operated between 60-80% of the minimum warranty period

In-Use Compliance Modifications

Phase 1 and Phase 2 Reports

- Phase 1 Report
 - Must be submitted no later than 18 months after the 50th unit is sold
- Phase 2 Report
 - Must be submitted no later than 4 years after the 50th unit is sold

Demonstrating In-Use Compliance

- Section 2709 of the Procedure
- 4 units must be tested in each phase and reduce emissions by at least 90% of the lower bound of the emission reduction level for which the system was verified and meet NO₂ requirements
- Tested systems must not increase NO₂ :
 - by more than 33% beginning January 1, 2007
 - by more than 22% beginning January 1, 2009

In-Use Compliance Modifications

Test System Failure

- If any of the first 4 units fail, 2 additional units must be tested, a maximum of 10 units can be tested for each phase
- For each test unit that fails, a test proposal for 2 additional units must be submitted within 30 days after failure
- If more than 4 units tested, at least 70% of all test units must meet emission reduction requirements

Verification Transfers

- Applies to applicants who wish to market another manufacturer's previously verified system
 - Applicants must submit an application per Section 2702(b) of the regulation
 - Applicants must get written permission from the verified manufacturer allowing them to market the product

Verification Transfers

- Applicants must get written permission from the verified device manufacturer to use data/information submitted for the original verification
- Applicants must demonstrate a thorough understanding of how the product relies on sound principles of science and engineering to achieve emissions reductions

Verification Transfers

- Applicants who wish to expand the scope of the verification or extend the conditions of a verification must provide any and all additional information and/or data requested by ARB

Pre-existing Data

- Pre-existing data and/or verifications from other programs (e.g. EPA, VERT, etc.) can be submitted for review
- Pre-existing data may support conditional or full verifications
- Applicants with pre-existing data are encouraged to apply

Record Keeping

- **Ensures applicants can obtain control systems for in-use compliance testing**
- **Supports compliance with fleet rules**
- **Reduces the risk of companies being penalized due to non-compliance with in-use and warranty requirements**

Record Keeping

- **Proposed changes added to Section 2702**
- **Applicants would be required to keep updated end user contact information and vehicle/engine information for each installed system**
- **Records must be kept until the in-use compliance requirements are completed**

NO₂ Requirements

- Effective 1/1/2007, all diesel retrofits must not increase emissions of NO₂ by more than 30% of the baseline NOx emissions level
- Compliance deadline applies to the date of installation, not date of sale
- Retrofit systems not in compliance as of 1/1/2007 will be de-verified
- No provision for a “sell-through” period

Next Steps

- Provide comments on proposed amendments by October 27, 2006
- Public Hearing scheduled in Spring 2007
- Contact Information:

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<http://www.arb.ca.gov/diesel/verdev/home/regact.htm>

Questions/Comments

