

UPDATED INFORMATIVE DIGEST

ADOPTION OF AMENDMENTS TO THE VERIFICATION PROCEDURE, WARRANTY AND IN-USE COMPLIANCE REQUIREMENTS FOR IN-USE STRATEGIES TO CONTROL EMISSIONS FROM DIESEL ENGINES

Sections Affected: Proposed amendment to title 13, California Code of Regulations (CCR), section(s) 2700, 2701, 2702, 2703, 2704, 2705, 2706, 2708, 2709, and 2710.

Background:

In 1998, ARB identified diesel particulate matter (PM) as a toxic air contaminant (title 17, CCR, section 93000). In 2000, ARB adopted the Diesel Risk Reduction Plan (DRRP) with the goal of reducing PM emissions and their associated health risks by 85 percent by the year 2020. The DRRP identified a number of key measures to achieve this goal: more stringent standards for all new diesel-fueled engines and vehicles, retrofitting in-use diesel engines with diesel emission control systems, and the use of low-sulfur diesel fuel.

To support the DRRP, staff developed a verification procedure (Procedure) for in-use diesel emission control systems (DECS) that was adopted by the Board in May 2002. The Procedure is used by staff to ensure that in-use diesel emission control systems achieve real and durable PM emissions reductions. It specifies test procedures, warranty requirements, and in-use compliance testing requirements. Systems that meet all of the Procedure's requirements are verified and thus become candidate compliance options for the ARB fleet regulations that require the control of diesel emissions from in-use fleets.

In-use fleet regulations both adopted by the Board and currently under development, rely on having verified diesel emission control systems available to fleet owners as compliance options. Diesel vehicles and equipment for which regulations have already been adopted include transit buses, solid waste collection vehicles, vehicles that belong to public agencies and utilities, mobile cargo handling equipment at ports and intermodal rail yards, transport refrigeration units, and off-road construction equipment. A far-reaching in-use regulation is currently under development to control emissions from private on-road heavy-duty diesel vehicles. These regulations provide several paths to compliance, one of which is the installation of verified diesel emission control systems. To support the successful implementation of these regulations, it is therefore critical for the Procedure to be an effective and efficient means to evaluate diesel emission control systems. However, as the verification program has matured, staff has found that a number of amendments to the Procedure are necessary to better serve the needs of the in-use fleet regulations.

Approved Amendments: A complete description of the proposed regulatory action and its rationale are contained in the Staff Report and the Notice of Modified Text. The Final

Statement of Reasons (FSOR) updates the Staff Report by identifying and explaining the modifications made to the text of the originally proposed regulatory language by the supplemental 15 day comment period. The most significant amendments are summarized below:

Conditional Extensions

The Board approved an amendment to create a conditional extension period during which verified diesel emission control systems may be quickly deployed for use with a greater range of on-road applications. The conditional extension allows applicants with a verified system to apply to extend their verification to include additional on-road vehicles without having to submit all the necessary additional information and data up front. If an applicant is granted a conditional extension, the applicant would be able to sell the system immediately as verified and have one year to formally complete the extension. Conditional extensions would accelerate the verification of proven technologies for additional on-road applications and provide regulated fleet owners with additional compliance options more quickly.

Systems that Only Reduce Oxides of Nitrogen (NOx) Emissions

Previously, the Procedure could not verify systems intended to reduce emissions of NOx only. The adopted changes broaden the scope of the Procedure to allow for the verification of systems that reduce emissions of NOx, but not PM, for certain diesel engines. This helps to address the need for additional reductions in emissions of NOx from in-use diesel engines.

Testing Requirements for Off-Road Applications and Fuel-Based Strategies

The Board approved the modification of the Procedure to require applicants seeking verification of a diesel emission control system intended for use with variable speed off-road applications to perform emission testing using the transient test procedures outlined in the 2006 California Code of Regulations, Title 13, section 2423 and the incorporated California Exhaust Emissions Standards and Test Procedures for New 2008 and Later Tier 4 Off-Road Compression-Ignition Engines, Part I-C (New 2008 Off-Road Test Procedures). All systems intended for variable speed off-road engines would be required to undergo three hot-start tests using the Nonroad Transient Cycle (NRTC) as prescribed in the above procedures. The transition to a transient test cycle is important because most off-road engines and equipment have transient duty cycles that are not well characterized by the steady state test cycle currently required. As a result, the current test cycle provides a very limited means for evaluating the performance of many kinds of emission control systems. To assist applicants in the transition to the NRTC, the changes to the procedure allow applicants to continue to use the existing steady-state test procedures outlined in the current ARB off-road regulations until December 31, 2008, provided certain criteria are met.

Approved changes also require that all fuel-based control systems follow the verification procedures specified in section 2710. This will ensure similar emissions testing for all fuel-based strategies and require appropriate testing that ensures real and durable

emissions reductions from applications subject to emissions requirements in the fleet rules.

Requirements for NOx Reduction Systems

Approved changes allow verification of NOx reduction systems using five levels, called Marks, defined by the lower bounds of NOx reduction performance. The lower bounds are equally spaced apart in 15 percent increments. Systems that achieve NOx reductions of less than 25 percent would not be verified. These changes address the growing need for NOx reductions by providing broadly defined verifications that complement existing technologies.

To assist in the evaluation of the in-use performance of aftertreatment-based NOx emission control systems, approved changes require that NOx emissions both upstream and downstream of the NOx device be measured and recorded during durability and field demonstrations. These data provide a record of activity as well as insight into the functioning of a system while in actual use.

Adopted changes also remove the requirement to test an on-road NOx emission control system under conditions that generate off-cycle emissions. One fundamental issue with the current requirement is that there is no standard method or test cycle which is guaranteed to trigger off-cycle NOx emissions for all engine makes and models. Staff has had only limited success with emissions test conditions that reliably result in off-cycle emissions. The changes should reduce verification costs and simplify the overall process.

Requirements to Prevent Reverse-flow Installation

The Board instructed staff to include language in the regulation to prevent DECS from being installed in a reverse-flow direction. This language includes implementation deadlines for DECS manufacturers to install a label indicating exhaust flow in the near future and a different implementation deadline requirement for manufacturers to redesign DECS in such a fashion that reverse-flow installation would not be possible. Additionally, manufacturers are to provide detailed explanations of the measures taken to address these concerns as part of the verification process.

Component Swapping and System Redesignation

The Board approved amendments for staff to include language in the regulation to provide a pathway for end-users to swap specific DECS components within vehicles in its fleet. This flexibility allows the end-user to keep additional DECS units in order to significantly lower vehicle downtime during routine maintenance of the DECS. Additional language clarifies the steps an end-users and applicants must follow in order to properly redesignate an in-use DECS from a vehicle at the end of its life cycle to another vehicle. Language allowing the Redesignation of a DECS does not affect the original device warranty and further includes instructions for installation warranty coverage.

Language Adoption for Replacement DECS Label

The Board approved amendments for staff to include language in the regulation allowing DECS manufacturers to issue a replacement label for an in-use DECS whose label has been damaged or destroyed. The original label as well as the replacement label must be appropriately designed based on instructions provided by the regulation.

Other Amendments

The Board approved amendments to add additional clarifications of the current requirements. These include deadlines for submitting in-use compliance information, a requirement for specific information to be kept for each diesel emission control system sold, a requirement that verified systems actually be sold in California, and specific requirements regarding verification transfers, acceptance of pre-existing data, system labeling, and sales and installation. These amendments will aid applicants by clarifying the intent of existing requirements.

Fiscal and Economic Impacts and Consideration of Alternatives

The determinations of the Board's Executive Officer concerning the costs or savings necessarily incurred by public agencies, private persons and businesses in reasonable compliance with the proposed regulations are presented below.

Pursuant to Government Code sections 11346.5(a)(5) and 11346.5(a)(6), the Executive Officer has determined that the proposed regulatory action will not create costs or savings to any state agency or in federal funding to the State, costs or mandate to any local agency or school district whether or not reimbursable by the State pursuant to Part 7 (commencing with section 17500), Division 4, Title 2 of the Government Code, or other non-discretionary savings to State or local agencies.

In developing this regulatory proposal, ARB staff evaluated the potential economic impacts on representative private persons or businesses. The ARB is not aware of any cost impacts that a representative private person or business would necessarily incur in reasonable compliance with the proposed action. Participation in the Procedure is purely voluntary both in its current form and as amended under the proposed action. While it is true that participation in the verification process is voluntary and there is no prohibition on selling diesel emission control strategies in California that have not been verified by the ARB, the ARB has adopted and may in the future adopt regulations to requiring reductions of PM from in-use diesel vehicles through the application of verified, retrofitted diesel emission control strategies in specific situations. Entities subject to these retrofit requirements must use verified diesel emission control strategies to comply with these requirements. Consequently, these entities will only purchase systems from manufacturers that have obtained ARB's verification. In any event, the proposed regulatory action would make the requirements for verification less stringent than they are now, allowing for more systems to become verified and avoiding

the loss of verifications by most currently-verified systems on January 1, 2007. Thus staff does not expect the proposal will result in adverse economic impacts.

The economic impacts of the proposed amendments on the State, affected businesses, and individual fleets are not expected to be significant. Participation in ARB's verification program is voluntary. Applicants electing to have their diesel emission control systems verified under the requirements of the Procedure choose to do so for financial gain. Verification for these participants translates into increased sales and therefore, increased revenues. For individual fleets subject to ARB's fleet rules, accelerating the verification process should result in additional products being available to meet the requirements of the rules. In some cases this should result in lower compliance costs due to increased competition in the retrofit market, as historically this increased competition for market share has had the effect of lowering unit prices and may result in a cost benefit to the regulated fleets.

Staff's analysis of the proposed amendments indicates that some may result in a minor cost increase, a cost savings, or have no economic impact. Since the proposed amendments do not universally apply to all applicants it is not possible to determine the aggregate economic impact of staff's proposal. For example, an applicant with a system intended to control PM emissions from on-road vehicles will not be affected by staff's proposed changes to the NOx emissions testing procedures. However, an applicant with a system designed to control NOx and PM emissions from off-road equipment may be required to perform additional emissions testing under staff's proposal. This could result in a cost increase when compared to the current requirements in the Procedure.

Staff does not expect a noticeable change in employment, business creation, elimination, or expansion, and business competitiveness in California due to the amendments to the regulation.

Though the monetary increase will be minimal, staff expects affected businesses will pass through the costs of these amendments to their customers. This can be achieved, for example, through higher retail prices for verified DECS. However, any increases in retail prices will likely be offset as a result of additional verified DECS being available in the marketplace, increasing pressures to reduce overall retail prices.

The Executive Officer has made an initial determination that the proposed regulatory action will not have a significant statewide adverse economic impact directly affecting businesses, including the ability of California businesses to compete with businesses in other states, or businesses directly affected or on representative private persons.

In accordance with Government Code section 11346.3, the Executive Officer has determined that the proposed regulatory action will not affect the creation or elimination of jobs within the State of California, the creation of new businesses or elimination of existing businesses within California, or the expansion of businesses currently doing

business within California. An assessment of the economic impacts of the proposed regulatory action can be found in the ISOR.

The Executive Officer has also determined, pursuant to title 1, CCR, section 4, that the proposed regulatory action will not affect small businesses because participation in the Procedure is purely voluntary. There are no cost impacts that a representative private person or business would necessarily incur in reasonable compliance with the proposed action.

The Executive Officer has also determined, pursuant to Government Code section 11346.5(a)(8), that the proposed regulation will not have a significant, statewide adverse economic impact directly affecting businesses, including the ability of California businesses to compete with businesses in other states because the proposed regulation will have no regulatory effect on business.

In accordance with Government Code sections 11346.3(c) and 11346.5(a)(11), the ARB's Executive Officer has found that the reporting requirements of the regulation which apply to businesses are necessary for the health, safety, and welfare of the people of the State of California.

For the reasons set forth in the Notice, the Staff Report, in staff's comments and responses at the hearing, and in this FSOR, ARB has determined that no alternative considered by the agency, or that has otherwise been identified and brought to the attention of the agency, would be more effective in carrying out the purpose for which the regulatory action was proposed or would be as effective or less burdensome to affected private persons than the adopted regulation.