

Updated Informative Digest

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

Sections Affected: The amendments affect sections 2701, 2702, 2703, 2704, 2705, 2706, 2707, and 2709, title 13, California Code of Regulations (CCR).

Background: In 1998, the Air Resources Board (ARB or Board) identified diesel particulate matter emissions from diesel-fueled engines as a toxic air contaminant (title 17, CCR, section 93000). The ARB adopted the Diesel Risk Reduction Plan (DRRP or Plan) in 2000, which established a goal of reducing emissions and the resultant health risk from virtually all diesel-fueled engines and vehicles within the State of California by the year 2020. The Plan envisioned that diesel particulate matter emissions should be reduced by 75 percent in 2010 and 85 percent in 2020. To achieve those goals, the Plan identified various methods including more stringent standards for all new diesel-fueled engines and vehicles, the use of diesel emission control strategies on in-use engines, and the use of low-sulfur diesel fuel.

To carry out the component of the DRRP that concerns implementation of in-use emission control strategies, ARB staff developed a procedure to verify emissions reductions achieved by strategies, which also includes warranty and in-use compliance requirements (the Procedure). The Board approved the Procedure at the May 16, 2002 public hearing.

Both during and after periods of public comment, staff has maintained a dialogue with stakeholders. As a result of this on-going dialogue, staff determined that changes could be made to improve the Procedure and better enable ARB to meet the goals of the Plan. Thus, staff initiated the present rulemaking activity and proposed amendments as described in the next section.

Description of Regulatory Action: Amendments to the Procedure were adopted by the Board at the February 26, 2004 public hearing. Changes to the amendments as originally set forth in the Initial Statement of Reasons were made available to the public in the Notice of Public Availability of Modified Text on April 8, 2004. The modifications and the rationale behind them are documented in that notice.

Summarized below are the four most significant amendments to the Procedure. Additional amendments include minor definitional changes and clarifications, which are shown in the Initial Statement of Reasons and the attachments thereto.

- (1) Warranty requirements: In developing the warranty requirements for verification, staff tried to strike a balance between the interests of the end-users and the manufacturers of diesel emission control systems. While some manufacturers perceived that the required warranty presented them with too great a liability to participate in the verification process, some end-user groups perceived it as providing insufficient consumer protection.

The mandatory warranty for verified diesel emission control systems originally included coverage of damage to the engine and vehicle or equipment that is proximately caused by the control system. It was primarily the inclusion of the vehicle or equipment in the warranty coverage that prevented some manufacturers of emission control systems from agreeing to participate in the verification process. Their primary concern was the potential for end-users to make spurious claims with the goal of obtaining new vehicles or equipment. Manufacturers were also dissatisfied with having to cover the engine for the same reason, but to a somewhat lesser degree.

The California Trucking Association (CTA), representing end-users, had repeatedly stated that the duration of warranty coverage was insufficient and requested that engine and vehicle coverage be retained. Even without coverage of vehicle/equipment damage, however, staff points out that the warranty affords far more protection than that required under the United States Environmental Protection Agency's (U.S. EPA) Urban Bus Retrofit/Rebuild program, which was another mandatory emission control effort directed at in-use fleets. As with warranties offered by engine manufacturers, the U.S. EPA's required warranty did not include coverage of vehicle/equipment damage. In addition, it has been staff's experience that the potential for a verified emission control strategy to cause non-engine related damage is minimal. In the unlikely event that such damage should occur, however, all the standard avenues for relief from secondary damages remain intact. Therefore, even without warranty coverage of vehicle/equipment damage, staff does not believe that end-users would be left without relief.

In an effort to achieve the goals of the DRRP while still maintaining a reasonable degree of consumer protection, the Board therefore adopted a number of amendments to the warranty. To enable greater manufacturer participation, the Board removed warranty coverage of damage to the vehicle or equipment, but retained coverage of the engine. To better protect end-users with newer long-haul trucks that typically accumulate over 100,000 miles per year, the Board adopted a new warranty period of 2 years, unlimited miles. The Board also adopted an amendment which leaves the burden of proof for denying a warranty claim to be determined according to existing legal authority, instead of explicitly placing the burden of proof on the manufacturer.

- (2) NO₂ Limit: Another component of the Procedure that was in need of amendment related to the nitrogen dioxide (NO₂) emission limit. The Procedure originally stated that beginning on January 1, 2004, post-control NO₂ emissions from an engine using a diesel emission control strategy must not exceed 20 percent of the baseline (pre-control) emissions of all oxides of nitrogen. After that date, systems that did not meet the limit would not be verified and could not be installed. To date, no verified Level 3 systems have been able to meet the NO₂ limit. Therefore, retaining the limit would have caused California to lose valuable early field experience and PM reductions that can be gained prior to the implementation of fleet rules that involve retrofit. Furthermore, significant questions have arisen surrounding the accuracy of the assumptions that led to selection of the 20 percent limit and the nature of engine-out NO₂ emissions. For those reasons, the Board moved the effective date of the NO₂ limit from January 1, 2004 to January 1, 2007. The three-year delay should give staff the time it needs to gather additional data and develop a better understanding of the questions surrounding the NO₂ issue. It will also give manufacturers more time for product development aimed at reducing NO₂ emissions. To prevent possible negative side-effects of higher NO₂ emissions, the delay ends before widespread implementation of diesel emission control strategies is expected to occur.
- (3) Proposed Verification Testing Protocol: Section 2702(b) of the Procedure describes the requirements for the Proposed Verification Testing Protocol that the applicant must prepare. One of the subsections of the protocol requires that the applicant describe its system's principles of operation. Staff must develop a good understanding of the system for several reasons, principal among them being the need to determine whether additional analyses for other harmful pollutants are necessary. The Procedure lacked a formal process for handling those control systems that appear to rely on principles not generally understood or accepted by the scientific world. To fill that need, the Board adopted an amendment which requires the applicant to demonstrate that its product relies on sound principles of science and engineering to achieve emission reductions. If the Executive Officer determines that the applicant has not made a satisfactory demonstration after two attempts, the application may be suspended. If an application has been suspended, it may only be reactivated at the discretion of the Executive Officer. Staff also proposes that if at any point in the verification process the Executive Officer has reason to doubt the scientific or engineering soundness of a product, the Executive Officer can require the applicant to provide further substantiation or risk suspension of the application or revocation of an existing verification.
- (4) Harmonization of Durability Requirements: The Procedure originally required that the applicant conduct emissions testing with the diesel emission control

strategy both before and after the service accumulation period. The verification protocol used to support the U.S. EPA Voluntary Diesel Retrofit Program calls for testing of both a pre-conditioned (or “de-greened”) unit and an aged unit at the same point in time, with testing of a single unit at two different times (before and after service accumulation) left as an option. The primary advantages of the first option are that it reduces the cost of testing and minimizes test condition variability to the extent that the two units are indeed identical. To further harmonize with U.S. EPA’s program and to offer more flexibility to applicants, the Board adopted an amendment which allows the applicant to request that the Executive Officer consider the testing of two identical units, one that has been pre-conditioned and another that has completed the service accumulation period. In reviewing the request, the Executive Officer may consider all relevant information, such as whether a system causes any changes in engine operation over time and the quality of the evidence the applicant can provide to support that the two units are identical.

Comparable Federal Regulations: The U.S. EPA has published a draft document, “General Verification Protocol for Diesel Exhaust Catalysts, Particulate Filters, and Engine Modification Control Technologies for Highway and Nonroad Use Diesel Engines,” but has not promulgated formal regulations for this verification protocol. The protocol is intended to support the voluntary retrofit programs initiated by the U.S. EPA, while the Procedure amended in the present rulemaking is used to support the ARB’s Diesel Risk Reduction Plan.