

UPDATED INFORMATIVE DIGEST

ADOPTION OF A PARTICULATE MATTER EMISSION MEASUREMENT ALLOWANCE FOR CALIFORNIA'S HEAVY-DUTY DIESEL IN-USE COMPLIANCE REGULATION

Sections Affected: Amendments to title 13, California Code of Regulations, section 1956.8, and the following document incorporated by reference therein: "California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Diesel Engines and Vehicles," as last amended September 27, 2010.

Background: Health and Safety Code section 43104 directs the Air Resources Board (ARB or Board) to adopt test procedures to ensure compliance with emission standards for new heavy-duty motor vehicles. In 2006, ARB adopted a new in-use compliance test procedure that allows for a more efficient and cost-effective test method to conduct in-use compliance testing for heavy-duty diesel engines (HDDE).¹ This new testing program, called the manufacturer-run heavy-duty diesel in-use testing program (HDIUT), requires the manufacturers to test a set number of their certified engine families each year using portable emission measurement systems (PEMS). Because testing will be conducted in the field during normal day-to-day operation rather than in an environmentally controlled laboratory, ARB, the United States Environmental Protection Agency (U.S. EPA), and the impacted HDDE manufacturers agreed to determine a "measurement allowance" for each pollutant to account for any potential difference in measurement accuracy. The Southwest Research Institute (SwRI), in San Antonio, Texas, and the University of California's (at Riverside) Center for Environmental Research and Technology (CE-CERT) were contracted to develop PEMS measurement allowances for gaseous and particulate matter emissions. This development work was performed under the direction of a measurement allowance steering committee comprised of members from ARB, U.S. EPA and the HDDE manufacturers. After a successful completion of a test program to determine gaseous measurement allowances in 2007, the gaseous measurement allowances were adopted by the Board in December 2007.² Following the December 2007 Board hearing, the development work with SwRI and CE-CERT focused on developing an appropriate measurement allowance for particulate matter. Based on this development effort (completed in November 2010), staff recommended that the Board adopt a particulate matter measurement allowance value of 0.006 grams per brake horsepower-hour. This value was agreed upon by ARB staff, U.S. EPA, and the HDDE manufacturers. When adopted, this value would be added to the particulate matter emissions measured by

¹ See Air Resources Board Resolution 06-27, September 28, 2006, *available at* <http://www.arb.ca.gov/regact/inuse06/res0627.pdf> and Final Regulation Order, California's Heavy-Duty Diesel In-Use Compliance Regulation, California Code of Regulations, title 13, sections 1956.1 and 1956.8, *available at* <http://www.arb.ca.gov/regact/inuse06/fro.pdf>,

² See Air Resources Board Resolution 07-56, December 6, 2007, *available at* <http://www.arb.ca.gov/regact/2007/hdiuc07/res0756.pdf> and Final Regulation Order, Gaseous Pollutant Measurement Allowances for California's Heavy-Duty Diesel In-Use Compliance Regulation, California Code of Regulations, title 13, section 1956.8, *available at* <http://www.arb.ca.gov/regact/2007/hdiuc07/hdiucfro07.pdf>.

PEMS to compensate for testing uncertainties when performing compliance testing in the field.

Description of Regulatory Action: At its June 23, 2011 public hearing, ARB staff proposed and the Board considered regulatory amendments to California's HDDE test procedures that were similar and consistent with the federal requirements for testing 2007 and newer HDDEs with PEMS. Staff proposed the adoption of the particulate matter measurement allowance value through amendments to section 1956.8, title 13, California Code of Regulations, and the incorporated "California Exhaust Emission Standards and Test Procedures for 2004 and Subsequent Model Heavy-Duty Diesel Engines and Vehicles," as last amended September 27, 2010.

Staff also proposed other minor amendments to the above test procedures to correct an oversight in a previous rulemaking. Specifically, staff proposed to add language to the test procedures for the exemption of armored vehicles and workover rigs from the engine shutdown system requirements. In December of 2008, the Board adopted these exemptions but they were inadvertently omitted from the incorporated test procedures.³ The proposed action will rectify this oversight.

At the conclusion of the hearing, the Board adopted Resolution 11-19, approving the proposed amendments to the regulation. U.S. EPA has adopted the same measurement allowance for its essentially identical HDIUT program through a Direct Final Rule on November 8, 2010.⁴

The adopted particulate matter measurement allowance will be used for conducting heavy-duty diesel in-use compliance testing of 2007 and newer HDDEs. The HDIUT program becomes enforceable for particulate matter emissions in 2011.

COMPARABLE FEDERAL REGULATIONS

On November 8, 2010, U.S. EPA adopted an identical particulate matter measurement allowance for their HDIUT compliance program through a direct final rulemaking.⁵ For U.S. EPA, the regulation became effective on January 7, 2011. ARB's HDIUT regulation amendments are essentially identical to U.S. EPA's program.

³ See Air Resources Board Resolution 08-43, December 12, 2008, *available at* <http://www.arb.ca.gov/regact/2008/truckbus08/res0843.pdf> and Final Regulation Order, Exhaust Emission Standards and Test Procedures – 1985 and Subsequent Model Heavy-Duty Engines and Vehicles, California Code of Regulations, title 13, section 1956.8, *available at* <http://www.arb.ca.gov/regact/2008/truckbus08/regpart7.pdf>.

⁴ Revisions to In-Use Testing for Heavy-Duty Diesel Engines and Vehicles; Emissions Measurement and Instrumentation; Not To Exceed Emission Standards; and Technical Amendments to Off-Highway Engines, Direct Final Rule. Title 40, Code of Federal Regulations, Parts 86, 1033, 1039, 1042, 1045, 1054, and 1065. United States Environmental Protection Agency. November 8, 2010. *Available at* <http://edocket.access.gpo.gov/2010/pdf/2010-27892.pdf>

⁵ See footnote 4 above