

Attachment 2. Modified Proposed Regulation Order

The following text shows the Board-approved modifications to the originally proposed regulatory text for section 2011, title 13, California Code of Regulations. The modifications to the regulatory language approved at the March 24, 2004 public hearing are shown in underline to indicate additions and ~~strike through~~ to indicate deletions. No other regulatory sections affected by the March 24, 2004 approval are proposed for modification herein.

Adopt new section 2011, title 13, California Code of Regulations to read as follows:
(Note: the entire text of section 2011 as set forth below is new language proposed to be added to the California Code of Regulations.)

§ 2011. Software Upgrade for 1993 through 1998 Model Year Heavy-Duty Trucks.

- (a) Applicability. This section 2011 applies to Low NO_x Rebuild Engines, as defined, operating in the State of California that are either;
- (1) registered in California; or
 - (2) registered outside of California, as defined.
- (b) Definitions. The definitions in section 1900 (b), Chapter 1, title 13 of the California Code of Regulations apply, with the following additions:
- (1) "Driver" has the same meaning as title 13, California Code of Regulations, section 2180.1 (a)(7).
 - (2) "HHDDE" means a heavy-duty diesel engine certified as a motor vehicle heavy heavy-duty engine in accordance with title 13, California Code of Regulations, section 1956.8.
 - (3) "Incentive project" means a project conducted under applicable provisions in part IX.C of the Heavy Duty Diesel Engine Settlement Agreements with California and Consent Decrees with the United States Environmental Protection Agency. The California Settlement Agreements and federal Consent Decrees are identified in title 13, California Code of Regulations, section 1956.8 (a)(2)(A), footnote 1.
 - (4) "Low NO_x Rebuild Kit" means an engine manufacturer's software and/or minor hardware upgrade that results in lower emissions of oxides of nitrogen (NO_x) when installed on the engine control module of heavy-duty diesel engines requiring such kits. Such engines are identified in plans implementing a Low NO_x Rebuild Program under both Heavy Duty Diesel Engine Settlement Agreements with California and Consent Decrees with the United States Environmental Protection Agency, and are listed in

(b)(5). The California Settlement Agreements and federal Consent Decrees are identified in title 13, California Code of Regulations, section 1956.8 (a)(2)(A), footnote 1.

- (5) “Low NOx Rebuild Engine” means a 1993 through 1998 model year heavy-duty diesel engine for which a Low NOx Rebuild Kit must be available for installation. The complete list of Low NOx Rebuild Engines is:

Low NOx Rebuild Engines		
Make and Year	Engine Model	Notes
Caterpillar 1993 – 1998	3406E	Engine Serial Number (ESN) 5EK05767 and up
Caterpillar 1993 – 1998	3406E	ESN: 6TS00097 and up
Caterpillar 1993 – 1998	3406E	ESN: 1LW00001 through 1LW33262
Caterpillar 1993 – 1998	3406E	ESN: Reman 4AS00001 through 4AS00385
Caterpillar 1993 – 1998	3126	ESN: 1WM00210 through 1WM26819
Caterpillar 1993 – 1998	3126	ESN: 4ES000226 through 4ES00454
Caterpillar 1993 – 1998	3126	ESN: Reman 6RW00001 and up
Caterpillar 1993 – 1998	3126B	ESN: 7AS00001 through 7AS37588
Caterpillar 1993 – 1998	3116	ESN: 8WL00297 through 8WL07351
Caterpillar 1993 – 1998	3176B	ESN: 9CK00647 through 9CK32795
Caterpillar 1993 – 1998	3176B	ESN: Reman 3LZ00001 and up
Caterpillar 1993 – 1998	C-10	ESN: 2PN01000 through 2PN07278
Caterpillar 1993 – 1998	C-10	ESN: 8YS00449 through 8YS07060
Caterpillar 1993 – 1998	C-10	ESN: Reman AKB00001 and up
Caterpillar 1993 – 1998	C-12	ESN: 1YN01200 through 1YN12844
Caterpillar 1993 – 1998	C-12	ESN: 9NS00372 through 9NS19786
Caterpillar 1993 – 1998	C-12	ESN: Reman ALS00001 and up
Cummins 1993 – 1998	ISB	Critical Parts List Number (CPL) 2446 through 2451
Cummins 1993 – 1998	M11	CPL 1855, 1856, 1857, 2036, 2037, 2370, and 2371
Cummins 1993 – 1998	N14	CPL 1573, 1574, 1807, 1809, 1844, 1987, 2025, 2026, 2027, 2389, 2390, and 2391
Detroit Diesel Corp. 1994 – 1998	6067-GK60	ESN 6R157655 through 6R472018
Detroit Diesel Corp. 1994 – 1998	6067-GK28	ESN 6R157655 through 6R472018
Detroit Diesel Corp. 1994 – 1998	6067-TK60	ESN 6R157655 through 6R472018
Detroit Diesel Corp. 1994 – 1998	6067-TK28	ESN 6R157655 through 6R472018
Detroit Diesel Corp. 1994 – 1998	6067-PK60	ESN 6R157655 through 6R472018
Detroit Diesel Corp. 1994 – 1998	6067-PK28	ESN 6R157655 through 6R472018
Detroit Diesel Corp. 1994 – 1998	6067-WK60	ESN 6R157655 through 6R472018
Detroit Diesel Corp. 1994 – 1998	6067-WK28	ESN 6R157655 through 6R472018
Detroit Diesel Corp. 1994 – 1998	6067-SK60	ESN 6R157655 through 6R472018
Detroit Diesel Corp. 1994 – 1998	6067-SK28	ESN 6R157655 through 6R472018
Detroit Diesel Corp. 1994 – 1998	6067-EK60	ESN 6R157655 through 6R472018
Detroit Diesel Corp. 1994 – 1998	6067-EK28	ESN 6R157655 through 6R472018
Mack 1994 – 1998	EM7-275	ESN 4B through 8R
Mack 1994 – 1998	EM7-300	ESN 4B through 8R
Mack 1994 – 1998	E7-300	ESN 4B through 8R
Mack 1994 – 1998	E7-310/330	ESN 4B through 8R
Mack 1994 – 1998	E7-330/350	ESN 4B through 8R
Mack 1994 – 1998	E7-350	ESN 4B through 8R
Mack 1994 – 1998	E7-355/380	ESN 4B through 8R
Mack 1994 – 1998	E7-375	ESN 4B through 8R

Mack 1994 – 1998	E7-400	ESN 4B through 8R
Mack 1994 – 1998	E7-427	ESN 4B through 8R
Mack 1994 – 1998	E7-454	ESN 4B through 8R
Mack 1994 – 1998	E7-460	ESN 4B through 8R
Renault 1993 –1998	MIDR06.02.26	
Navistar/International 1998	DT 466E	Engine Family Number (EFN) WNVXH0466FNA
Navistar/International 1998	DT 466E	EFN: WNVXH0466CCB, WNVXH0466FNC
Navistar/International 1998	DT 466E	EFN: WNVXH0466CCD
Navistar/International 1998	530E	EFN: WNVXH0530FNA, WNVXH0530CCB
Navistar/International 1998	530E	EFN: WNVXH0530FNC, WNVXH0530CCD
Volvo 1994 – 1998	VE D12	Engine Family Name (EFNa) RVT12.EJDBRA
Volvo 1994 – 1998	VE D12	EFNa: SVT12.EJDBRA, TVT12.EJDBRA
Volvo 1994 – 1998	VE D12A	EFNa: VVT12.EJDBRA
Volvo 1994 – 1998	VE D12B-345 EPG	EFNa: WVTXH12.150S
Volvo 1994 – 1998	VE D12B-385 EPG	EFNa: WVTXH12.150S
Volvo 1994 – 1998	VE D12B-425 EPG	EFNa: WVTXH12.150S
Volvo 1994 – 1998	VE D12B-345 VEB	EFNa: WVTXH12.150S
Volvo 1994 – 1998	VE D12B-385 VEB	EFNa: WVTXH12.150S
Volvo 1994 – 1998	VE D12B-425 VEB	EFNa: WVTXH12.150S
Volvo 1994 – 1998	VE D7C-275	EFNa: WVTXH07.350S
Volvo 1994 – 1998	VE D7C-300	EFNa: WVTXH07.350S

- (6) “MHDDE” means a heavy-duty diesel engine certified as a motor vehicle medium heavy-duty engine in accordance with title 13, California Code of Regulations, section 1956.8.
- (7) “Offset project” means a project conducted under applicable provisions in part IX.C of the Heavy Duty Diesel Engine Settlement Agreements with California and Consent Decrees with the United States Environmental Protection Agency. The California Settlement Agreements and federal Consent Decrees are identified in title 13, California Code of Regulations, section 1956.8 (a)(2)(A), footnote 1.
- (8) “Owner” has the same meaning as title 13, California Code of Regulations, section 2180.1 (a)(21).
- (9) “Registered outside of California” means any of the following:
- (A) A heavy-duty diesel-powered vehicle operating in California under the terms of Interstate Reciprocity Agreements as authorized by Article 3 (commencing with section 8000), Chapter 4, Division 3 of the Vehicle Code and which belongs to a fleet that is not based in California;
 - (B) A heavy-duty diesel-powered vehicle operating in California under the terms of any other apportioned registration, reciprocity, or bilateral prorate registration agreement between California and other jurisdictions and which belongs to a fleet that is not based in California; or

- (C) A heavy-duty diesel-powered vehicle operating in California under a short-term vehicle registration or permit of 90 days or less (including but not limited to 90-day temporary registrations and 4-day permits under Vehicle Code section 4004).

(c) Standards.

- (1) On and after the applicable implementation date in subsection (d), and, except as provided in (e)(2), a vehicle propelled by a Low NOx Rebuild Engine must not operate on highways within the State of California without a Low NOx Rebuild Kit installed that meets the following emission requirements:

Software Upgrade Requirements					
Option A (1994 – 1998)			Option B (1993 – 1998)		
	MHDDE	HHDE		MHDDE	HHDE
Euro III	6.0 g/bhp-hr	7.0 g/bhp-hr	Euro III	6.5 g/bhp-hr	7.5 g/bhp-hr
NTE	7.5 g/bhp-hr	8.75 g/bhp-hr	NTE	8.1 g/bhp-hr	9.38 g/bhp-hr

Manufacturer Option for Software Upgrade		
Company	Option	MY Year
Caterpillar	B	1993 - 1998
Cummins	B	1993 - 1998
Detroit Diesel Corporation	A	1994 – 1998
Mack	A	1994 – 1998
Navistar	not applicable	1998 (only)
Volvo	A	1994 – 1998
Renault	B	1993 - 1998

- (2) A Low NOx Rebuild Engine manufacturer's authorized dealers, distributors, repair facilities, and rebuild facilities must:
- (A) provide upon request and at no added cost a Low NOx Rebuild Kit to the owner or driver of a vehicle with a Low NOx Rebuild Engine, and to any non-affiliated rebuilder or other person; and
- (B) install the Low NOx Rebuild Kit within a reasonable amount of time.
- (3) Low NOx Rebuild Engine manufacturers must reimburse authorized dealers, distributors, repair facilities, and rebuild facilities for costs incurred to meet the requirement in (2) to ensure that those identified in (2) pay no added cost.

- (34) No person may install on a Low NOx Rebuild Engine any engine software containing electronic control strategies, other than a Low NOx Rebuild Kit.
- (45) Any person installing a Low NOx Rebuild Kit must affix a label to each engine at time of installation. The label must do all of the following:
- (A) The label must contain an identifiable characteristic allowing the ARB to determine whether a Low NOx Rebuild Engine has had the appropriate Low NOx Rebuild Kit installed. This identifiable characteristic may be a unique part number or other marking on the engine control module;
 - (B) The label must contain a statement with appropriate blank spaces for the individual performing the installation to indicate when and by whom the Low NOx Rebuild Kit was installed on the engine;
 - (C) The label must be placed in such a location as approved by the ARB consistent with California law;
 - (D) The label must be fabricated of a material suitable for the location in which it is installed; and
 - (E) The label must not be readily removable intact.
- (56) The owner of a vehicle cited for violating (c)(1) of this section must submit proof of Low NOx Rebuild Kit installation, as identified in title 13, CCR, section 2186, within 45 days of personal or certified receipt of the citation.
- (7) Any Low NOx Rebuild Manufacturers' authorized dealers, distributors, repair facilities, or rebuild facilities refusing to install a Low NOx Rebuild Kit upon request, or failing to install a Low NOx Rebuild Kit within a reasonable amount of time from that request, shall be subject to a civil penalty of \$500 per incident.

(d) Implementation Dates.

- (1) 1993 and 1994 model year Low NOx Rebuild Engines must have a Low NOx Rebuild Kit installed by April 30, 2005.
- (2) 1995 and 1996 model year Low NOx Rebuild Engines must have a Low NOx Rebuild Kit installed by August 31, 2005.
- (3) 1997 and 1998 model year Low NOx Rebuild Engines other than MHDDE must have a Low NOx Rebuild Kit installed by December 31, 2005.

- (4) 1997 and 1998 model year MHDDE Low NOx Rebuild Engines must have a Low NOx Rebuild Kit installed by December 31, 2006.
- (e) Exemptions.
- (1) A Low NOx Rebuild Engine receiving a software upgrade performed as part of an approved incentive or offset project prior to the adoption of Section 2011 is exempt from the requirements in (c).
- (2) Low NOx Rebuild Engines identified in (b)(5) as a make and year of Detroit Diesel Corp. (DDC) are exempt from the requirements in (c), provided that DDC voluntarily installs Low NOx Rebuild Kits at the following rate:
- (A) Low NOx Rebuild Kits must be installed on 60 percent of DDC's Low NOx Rebuild Engines no later than May 31, 2005;
- (B) Low NOx Rebuild Kits must be installed on 80 percent of DDC's Low NOx Rebuild Engines no later than January 31, 2006; and
- (C) Low NOx Rebuild Kits must be installed on 100 percent of DDC's Low NOx Rebuild Engines no later than January 1, 2008.
- (3) A Low NOx Rebuild Engine manufacturer subject to the provisions in (e)(2) shall report the number of Low NOx Rebuild Kit installations with the dealership name and address, the date of installation, vehicle identification number, engine make and model year, and ESN for each installation. Reports shall be submitted electronically to the Executive Officer or designated representative on the following schedule:
- (A) Submit a report on June 7, 2005, of Low NOx Rebuild Kits installed from October 28, 2004, through May 31, 2005.
- (B) Submit a report on February 7, 2006, of Low NOx Rebuild Kits installed from June 1, 2005, through January 31, 2006.
- (C) Submit a report on January 7, 2008, of Low NOx Rebuild Kits installed from February 1, 2006, through December 31, 2007.
- (4) The Executive Officer shall review each report in (3), applying the criteria in Appendix A, to determine if a Low NOx Rebuild Engine manufacturer has met the next installation rate in (e)(2), if any, and to consider whether the manufacturer's installation progress is sustainable toward meeting the next installation rate in (e)(2), if any.

- (A) If the Executive Officer determines that a Low NOx Rebuild Engine manufacturer has not met the installation rate in (e)(2), an Executive Officer public hearing shall be convened to consider removing the exemption for that manufacturer's engines.
- (B) If the Executive Officer hearing results in the Low NOx Rebuild Engine manufacturer's engines being subject to the requirements in (c) within the date range below, the compliance schedule requiring installation of Low NOx Rebuild Kits on the manufacturer's 1994 through 1998 model year Low NOx Rebuild Engines is as listed here:

<u>Date Range</u>	<u>Compliance Schedule</u>
<u>April 30, 2005 – September 30, 2005</u>	<u>December 31, 2005</u>
<u>October 1, 2005 – September 30, 2006</u>	<u>December 31, 2006</u>
<u>October 1, 2006 – July 1, 2007</u>	<u>December 31, 2007</u>

- (C) Any determination under (A) that results in subjecting a manufacturer's engines to a compliance schedule in (B) will be communicated to affected persons and published in the California Regulatory Notice Register.

- (f) Severability.

If any provision of this section or the application thereof to any person or circumstances is held invalid, such invalidity shall not affect other provisions or applications of the section that can be given effect without the invalid provision or application, and to this end the provisions of this section are severable.

- (g) The requirements in (c)(2) and (c)(3) are a declaration of existing legal obligations.

NOTE: Authority Cited: Sections 39600, 39601, 43013, 43018, and 43701, Health and Safety Code. Reference: Sections 39001, 39003, 43000, 43013, 43016, and 43018, Health and Safety Code.

Appendix A

Voluntary Software Upgrade Program Discussion Paper (March 16, 2004)