

State of California  
AIR RESOURCES BOARD

Notice of Public Availability of Modified Text

AMENDMENTS TO REGULATIONS REGARDING ON-BOARD DIAGNOSTIC SYSTEM  
REQUIREMENTS FOR 1994 AND LATER PASSENGER CARS, LIGHT-DUTY TRUCKS, AND  
MEDIUM-DUTY VEHICLES AND ENGINES (OBD II)

Public Hearing Date: December 12, 1996

Public Availability Date: July 10, 1997

Deadline for Public Comment: July 25, 1997

At a public hearing held on December 12, 1996, the Air Resources Board (the "Board") considered amendments to California's On-Board Diagnostic II (OBD II) regulation (Section 1968.1, Title 13, California Code of Regulations ("CCR")). The amendments were proposed to address manufacturers' implementation concerns, clarify the regulations where necessary, and improve the effectiveness of the regulations for future model year vehicles.

The Board adopted Resolution 96-60 approving the proposed amendments with modifications. Modifications to the amendments were noticed between February 3-18, 1997 (ARB Mail-Out #97-01).

At this time, the staff is proposing additional amendments to clarify the MIL illumination requirements for misfire detection. Principally, sections (b)(3.4.1)(A) and (b)(3.4.2)(A) have been modified to clarify that a temporary misfire code can be cleared no earlier than completion of the driving cycle immediately following the cycle in which the code is set. Language to clarify this requirement was adopted by the Board in December of 1994. However, with the extensive modifications to other aspects of the regulatory language for misfire detection that were adopted at the December, 1996, Hearing, the clarity of the language with respect to temporary code clearing was inadvertently diminished. The intent of the requirements has been for the MIL to illuminate if misfire is detected either on the driving cycle that immediately follows the cycle in which misfire initially occurs or on the next driving cycle in which similar conditions are encountered and misfire is again detected. If misfire is not detected on the driving cycle immediately following the cycle in which the code is set, and is also not detected upon encountering similar conditions, the temporary code may be erased.

The modified portions of Section 1968.1, Title 13, CCR, are attached. Comments regarding the modifications must be submitted to the Board Secretary, Air Resources Board, P.O. Box 2815, Sacramento, California 95812, no later than July 25, 1997, for consideration by the Executive Officer. Questions regarding this mail-out may be directed to Allen Lyons, Manager, Advanced Engineering Section, at (626) 575-6833.

Sincerely,

Robert H. Cross, Chief  
Mobile Source Control Division

Attachment

## Attachment I

### Modifications to Section 1968.1, Title 13, California Code of Regulations

These are amendments to section 1968.1, Title 13, CCR. Amendments adopted by the Board on December 12, 1996, are shown in underline to indicate additions and ~~strikeout~~ to indicate deletions. Amendments noticed for comment between February 3, 1997, and February 18, 1997, are indicated by double underline for additions and *italics with strikeout* to indicate deletions. Amendments noticed for comment between July 10, 1997, and July 25, 1997, are indicated by double underlined italics for additions and ~~bracketed bold text with strikeout~~ to indicate deletions.

### 1968.1 Malfunction and Diagnostic System Requirements--1994 and Subsequent Model-Year Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles and Engines

#### Section (b):

#### (3.4) MIL Illumination and Fault Code Storage:

(3.4.1) ~~Except as provided below, u~~ Upon detection of the level of misfire specified in subsection (3.2) (A), the following criteria shall apply for MIL illumination and fault code storage:

(A) A temporary fault code shall be stored and the MIL shall blink once per second during actual misfire conditions no later than after the third exceedance of the specified misfire level when operating in the region bound by the maximum engine speed and load conditions encountered during the FTP cycle and no later than after the first exceedance of the specified misfire level when operating at any other engine speed and load condition during a single driving cycle. While a temporary fault code is stored, ~~FT~~ the MIL shall blink during every subsequent exceedance during the driving cycle but may remain extinguished when misfire is not present. If the level of misfire is exceeded again (a single exceedance) during the following driving cycle or the next driving cycle in which similar conditions are encountered (~~see~~ as defined in section (3.4.3)) any subsequent driving cycle or while a temporary fault code for the level of misfire specified in subsection (3.2)(B) is present, the MIL shall blink as specified above, a fault code shall be stored, and the MIL shall ~~and~~ remain continuously illuminated, even if the misfire ceases otherwise. ~~unless similar conditions have been encountered without an indication exceedance of the specified misfire level, in which case the initial temporary code and stored conditions may be erased. Further,~~ The initial temporary code and stored conditions may be erased if misfire is not detected during the following driving cycle and similar conditions have been encountered without an exceedance of the specified misfire level. The code and conditions may also be erased if similar driving conditions are not encountered during 80 driving cycles subsequent to the initial detection of a malfunction, ~~the initial temporary code and stored conditions may be~~

~~erased].~~

(B) ~~Notwithstanding, in~~ vehicles which provide fuel shutoff and default fuel control to prevent overfueling during misfire conditions, the MIL need not blink, ~~and may~~ Instead, the MIL may illuminate continuously in accordance with the requirements for continuous MIL illumination in section (3.4.1)(A) above upon detection of misfire provided that the fuel shutoff and default fuel control shall be activated as soon as misfire is detected. Fuel shutoff and default fuel control may be deactivated only to permit fueling outside of the misfire range.

(3.4.2) Upon detection of the misfire levels specified in subsection (3.2) (B) ~~or (C)~~, the following criteria shall apply for MIL illumination and fault code storage:

(A) A temporary fault code shall be stored no later than after the fourth exceedance of the specified misfire level during a single driving cycle and the MIL shall be illuminated and a fault code stored no later than the end of the following driving cycle or the next the next ~~any subsequent~~ driving cycle in which similar conditions are encountered (see as defined in section (3.4.3)) if the level of misfire is again exceeded four times detected. ~~If misfire is not detected during the second driving cycle, the MIL shall be illuminated and a fault code stored no later than the next driving cycle in which misfire is detected, unless driving conditions similar to those under which misfire was originally detected have been encountered (see section (3.4.3)) without an indication exceedance of the specified misfire level, in which case the initial temporary code and stored conditions may be erased. Furthermore,~~ The initial temporary code and stored conditions may be erased if misfire is not detected during the following driving cycle and similar conditions have been encountered without an exceedance of the specified misfire level. The code and conditions may also be erased if similar driving conditions are not encountered during 80 driving cycles subsequent to the initial detection of a malfunction~~, the initial temporary code and stored conditions may be erased].~~