

State of California
AIR RESOURCES BOARD

Addendum to the Final Statement of Reasons for Rulemaking

PROPOSED REVISIONS TO THE ON-BOARD DIAGNOSTIC SYSTEM
REQUIREMENTS AND ASSOCIATED ENFORCEMENT PROVISIONS FOR
PASSENGER CARS, LIGHT-DUTY TRUCKS, AND MEDIUM-DUTY VEHICLES
AND ENGINES

Public Hearing Date: September 24-25, 2015

Agenda Item No.: 15-7-8

Addendum Prepared: July 21, 2016

I. GENERAL

A. BACKGROUND

On June 10, 2016, the Air Resources Board (ARB or Board) submitted the Final Statement of Reasons (FSOR) for the rulemaking action entitled "Technical Status and Proposed Revisions to On-Board Diagnostic System Requirements and Associated Enforcement Provisions for Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles and Engines (OBD II)" to the Office of Administrative Law (OAL) for its review and approval.

In the course of its review, OAL noted several issues. Those issues and ARB's response to those issues are presented below.

B. CODE OF FEDERAL REGULATION SECTIONS INCORPORATED BY REFERENCE IN RULEMAKING ACTION

OAL stated that the sections of the Code of Federal Regulations (CFR) that are incorporated by reference in the rulemaking action need to indicate a version date, and the CFR sections also need to be listed in the Updated Informative Digest and the Final Statement of Reasons.

ARB is therefore updating the Final Statement of Reasons to reflect that the documents incorporated by reference in this rulemaking action expressly include:

Documents Incorporated by Reference

- Title 40, Code of Federal Regulations section 86.1869-12, as it existed on August 5, 2015
- Title 40, Code of Federal Regulations 600 Subpart B, as it existed on August 5, 2015
- Title 40, Code of Federal Regulations section 1066.840, as it existed on August 5, 2015
- Title 40, Code of Federal Regulations section 600.111-08, as it existed on August 5, 2015
- Title 40, Code of Federal Regulations section 600.116(d), as it existed on August 5, 2015
- Title 40, Code of Federal Regulations section 86.004-28(i), as it existed on August 5, 2015
- Title 40, Code of Federal Regulations section 86.1811-04, as it existed on August 5, 2015
- Title 40, Code of Federal Regulations section 86.1811-17, as it existed on August 5, 2015
- Title 40, Code of Federal Regulations section 1066.635, as it existed on August 5, 2015

C. REMOVAL OF ARB TEST DOCUMENTS FROM THE LIST OF DOCUMENTS INCORPORATED BY REFERENCE IN RULEMAKING ACTION

OAL noted that two specific documents that were identified as being incorporated by reference in this rulemaking action should in fact not be identified as being incorporated by reference in this rulemaking action, because those documents were adopted by ARB in separate rulemaking actions, approved by OAL, and filed with the Secretary of State, and because those documents are not being amended in this rulemaking action.

Consequently, ARB is removing the following two documents from the list of documents incorporated by reference in this rulemaking action:

- “California 2015 and Subsequent Model Criteria Pollutant Exhaust Emission Standards and Test Procedures and 2017 and Subsequent Model Greenhouse Gas Exhaust Emission Standards and Test Procedures for Passenger Cars, Light Duty Trucks, and Medium Duty Vehicles,” as last amended December 6, 2012; and
- “California Exhaust Emission Standards and Test Procedures for 2018 and Subsequent Model Zero-Emission Vehicles and Hybrid Electric Vehicles, in the Passenger Car, Light-Duty Truck and Medium-Duty Vehicle Classes,” as last amended May 30, 2014.

D. REVISING DEFINITION OF “EMISSIONS NEUTRAL DIAGNOSTIC” IN SECTION 1968.2(c) TO CITE FULL TITLE OF INTERNATIONAL ORGANIZATION FOR STANDARDIZATION (ISO) STANDARD 26262-5 INCORPORATED BY REFERENCE THEREIN

OAL noted that the proposed definition of “emissions neutral diagnostic” in section 1968.2(c) specifies “...level C or D specifications as defined in International Organization for Standardization (ISO) 26262-5 (November 15, 2011)...”, but does not specify the full title of ISO 26262-5 or expressly indicate that the ISO document is incorporated by reference in that section. OAL further noted that section 1968.2(g)(1.13) does list the full title of the ISO document (26262-5:2011 “Road vehicles – Functional Safety – Part 5: Product development at the hardware level”, November 15, 2011).

ARB is therefore amending the definition of “emissions neutral diagnostic” in section 1968.2(c) to expressly include the full title of ISO 26262-5 (“26262-5:2011 “Road vehicles – Functional Safety – Part 5: Product development at the hardware level”, November 15, 2011), and to indicate that the November 15, 2011 version of that document is incorporated by reference in the above mentioned definition of “emissions neutral diagnostic.”

E. ADDITIONAL JUSTIFICATION OF NONSUBSTANTIAL MODIFICATIONS TO REGULATORY TEXT

OAL indicated that the explanations provided by ARB regarding specific nonsubstantive modifications to the final version of the regulatory text of section 1968.2 did not fully explain why such modifications did not materially alter the requirements, rights, responsibilities, conditions, or prescriptions of contained in the regulatory text as set forth in the 15-day public comment period released on March 21, 2016.

ARB is therefore providing the following additional explanation why each of the following modifications only constitute nonsubstantial modifications of the regulatory text as set forth in the 15-day public comment period, released on March 21, 2016.

Section 1968.2(e)(8.2.4): Made clarifying changes to the section. The language that was proposed as part of the 15-day notice stated:

“Manufacturers may request Executive Officer approval to not detect the failure or deterioration if monitoring is not possible because the vehicle has immediately stalled during idle conditions. Executive Officer approval shall be based on data or engineering analysis demonstrating that the failure or deterioration of the EGR system is detected under all other driving conditions. If the failure or deterioration can only be detected under idle conditions, the manufacturer must provide data or engineering analysis demonstrating that the failure or deterioration cannot be detected under other driving conditions.”

This section specifies the malfunction criteria for exhaust gas recirculation (EGR) system monitors, and specifically exempts manufacturers from detecting EGR system high flow faults if the vehicle stalls immediately at idle due to the EGR system fault, as long as the OBD II system is able to detect EGR system high flow faults during non-idle conditions. However, if the manufacturer is unable to detect this failure during non-idle conditions, the language further allowed manufacturers to be exempt from monitoring of this failure altogether, if the vehicle stalls during idle due to this fault. Industry subsequently recognized that the 15-day language did not precisely convey this requirement, so staff therefore modified this section to more clearly explain this requirement to:

“Manufacturers may request Executive Officer approval to be exempt from monitoring for this failure or deterioration. The Executive Officer shall approve the request upon determining that the manufacturer has submitted data and/or engineering evaluation that demonstrate that (1) the failure or deterioration cannot be detected during off-idle conditions, and (2) the failure or deterioration causes the vehicle to immediately stall during idle conditions.”

In light of the fact that these provisions only apply to EGR system monitor malfunction criteria, the phrases “because the vehicle has immediately stalled during idle conditions” (15-day language) and “(2) the failure or deterioration causes the vehicle to immediately stall during idle conditions” (final regulation order) can only pertain to EGR system failures that cause a vehicle to stall during idle conditions. Staff merely moved the condition related to the vehicle immediately stalling during idle conditions due to the failure of an EGR system from the first sentence to the second sentence to group it with the other condition related to driving conditions other than idle (i.e., off-idle conditions). In both the 15-day notice and final regulatory language, Executive Officer approval of the exemption will only be granted if the vehicle immediately stalls during idle conditions due to the fault, and a failure of the EGR system is detected during all other driving conditions. Both of the conditions contained in the 15-day notice language still exist in the final regulatory text but are merely grouped together in the same sentence for better readability. Therefore, as explained above, the above-mentioned changes merely clarify, but do not materially alter the requirements, rights, responsibilities, conditions, or

prescriptions contained in the regulatory text as set forth in the 15-day public comment period released on March 21, 2016.

Sections 1968.2(e)(15.2.3)(I)(ii)b. and (f)(15.2.3)(I)(ii)b.: Corrected the phrases regarding the units of energy to be used. The original text stated “All tests shall be run with a fully charged high voltage battery, with integrated net energy watt-hours measured at the electric drive system inlet. If measuring the electric drive system’s inlet net energy watt-hours is not feasible, the Executive Officer may approve an alternative method based on the ability of that method to measure net watt-hours of energy delivered to the powertrain.”

Because “net watt-hours” is not a standard unit of energy, and vehicle manufacturers are a diverse group from many different countries, ARB staff determined that the more general “net energy” terminology was more appropriate. “Watt hours”, “net watt hours”, and “net hours of energy” refer to units of energy. For the purposes of this regulation (section 1968.2), the units of measure for net energy are not material given that it is the relative amount of energy used, and not the absolute value, that is of importance (i.e., manufacturers are using the measured net energy to calculate a percent change that is reported), which may be accomplished regardless of the unit of energy used by the manufacturers. As such, as part of the 15-day modified text, staff changed the terms “net watt-hours” and “net watt-hours of energy” to “net energy” in sections 1968.2(e)(15.2.3)(I)(iv) and (f)(15.2.3)(I)(iv), but staff mistakenly did not make these changes to these other sections noted above. The requirement in sections 1968.2(e)(15.2.3)(I)(ii)b. and 1968.2(f)(15.2.3)(I)(ii)b is to measure the net energy at the electric drive system inlet throughout the applicable test cycle; the units used to measure the net energy are not material to the results of the test. Therefore, as explained above, the above-mentioned changes merely clarify, but do not materially alter the requirements, rights, responsibilities, conditions, or prescriptions contained in the regulatory text as set forth in the 15-day public comment period released on March 21, 2016.

Section 1968.2(f)(1.2.2)(B): Deleted two mentions of the phrase “NMHC or NOx” to align with the LEVIII standards structure. As part of the LEVIII regulation (in title 13, California Code of Regulations section 1961.2), NMHC and NOx standards were combined into a single emissions standard. In this action, numerous proposed changes to 1968.2 were made to keep pace with these changing emissions standards, including new thresholds for all pollutants with standards in the LEVIII regulations. The original text of 1968.2(f)(1.2.2)(B) stated:

“Except as provided below in section (f)(1.2.2)(C), if no failure or deterioration of the catalyst conversion capability could result in NMHC or NOx emissions exceeding the applicable malfunction criteria of section (f)(1.2.2)(A), the OBD II system shall detect a malfunction when the catalyst has no detectable amount of NMHC or NOx conversion capability.”

Since there are no longer separate NMHC and NOx thresholds listed in (f)(1.2.2)(A) for LEVIII applications, and since the proposed malfunction criteria for LEVIII applications listed in (f)(1.2.2)(A) include thresholds for all emissions constituents,

the phrase “NMHC or NOX” is no longer applicable and is likely to engender confusion within industry, so staff therefore modified this section to more clearly explain this requirement and to maintain conformity with the LEV III regulation:

“Except as provided below in section (f)(1.2.2)(C), if no failure or deterioration of the catalyst conversion capability could result in emissions exceeding the applicable malfunction criteria of section (f)(1.2.2)(A), the OBD II system shall detect a malfunction when the catalyst has no detectable amount of conversion capability.”

As such, removal of the phrase “NMHC or NOx” is made for clarity, but does not materially alter the requirements, rights, responsibilities, conditions, or prescriptions contained in the regulatory text as set forth in the 15-day public comment period released on March 21, 2016.

Section 1968.2(f)(11.1.4)(A): Corrected the phrase “For vehicles that use a system other than the cooling system and ECT sensor...” to

“For vehicles that use an engine and/or engine component temperature sensor or system in lieu of the cooling system and ECT sensor... ”.

The language in section 1968.2(f)(11.1.4) was modified as part of the 15-day notice to clarify that the engine cooling system monitoring requirement applied to “[v]ehicles that use an engine and/or engine component temperature sensor or system... in lieu of or in addition to the cooling system and ECT sensor for an indication of engine operating temperature for emission control purposes...” Therefore, the subsections to this section (subsections (f)(11.1.4)(A) and (f)(11.1.4)(B)) only apply to “vehicles that use an engine and/or engine component temperature sensor or system in lieu of or in addition to the cooling system and ECT sensor.”

While subsection 1968.2(f)(11.4.1)(B) used the same phrasing as section 1968.2(f)(11.1.4) (i.e., indicated that subsection (B) applied to “vehicles that use an engine and/or engine component temperature sensor or system in addition to the cooling system and ECT sensor”), for subsection 1968.2(f)(11.4.1)(A), staff mistakenly used the phrase “vehicles that use a system other than the cooling system and ECT sensor” that was proposed as part of the 45-day notice. However, as mentioned above, because subsection 1968.2(f)(11.4.1)(A) only applies to the category of vehicles specified in 1968.2(f)(11.4.1) (“vehicles that use an engine and/or engine component temperature sensor or system in lieu of or in addition to the cooling system and ECT sensor”), changing the phrase “For vehicles that use a system other than the cooling system and ECT sensor” to “For vehicles that use an engine and/or engine component temperature sensor or system in lieu of the cooling system and ECT sensor”) does not materially alter the requirement of subsection 1968.2(f)(11.4.1)(A) (i.e., does not change the category of vehicles required to meet the requirements of subsection (A)).

Therefore, as explained above, the above-mentioned changes merely clarify, but do not materially alter the requirements, rights, responsibilities, conditions, or

prescriptions contained in the regulatory text as set forth in the 15-day public comment period released on March 21, 2016.

F. ADDITIONAL JUSTIFICATION OF NONSUBSTANTIAL MODIFICATIONS TO REGULATORY TEXT

A number of nonsubstantial changes were made to the regulation text during OAL review to correct such things as grammar, punctuation, underlining and strikeout, and cross-references.