STATE OF CALIFORNIA
AIR RESOURCES BOARD

Amendments to California's Small	**)**	
Off-Road Engine and Tier 4 Off-Road	**)**	**Hearing Date:**
Compression-Ignition Engine Regulations	**)**	**December 16, 2011**
and Test Procedures	**)**	**Agenda Item: 11-10-4**

COMMENTS OF THE TRUCK AND ENGINE MANUFACTURERS ASSOCIATION

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The Truck and Engine Manufacturers Association ("EMA") appreciates the opportunity to submit these comments to the California Air Resources Board ("CARB") regarding the proposed "Amendments to California's Small Off-Road Engine and Tier 4 Off-Road Compression-Ignition Engine Regulations and Test Procedures," which CARB published for public review and comment on October 26, 2011. EMA is the trade association that represents the world's leading manufacturers of the off-road (nonroad) engines that will be tested and certified pursuant to the proposed regulatory amendments at issue, and EMA has actively participated in the developments of the proposed amendments. EMA strongly supports and greatly appreciates CARB's efforts to harmonize its certification requirements and test procedures for nonroad engines with the current corollary nonroad regulations promulgated by the U.S. Environmental Protection Agency ("EPA"). EMA also can support the additional proposed engine labeling modifications to facilitate the implementation of California's various in-use fleet modernization programs.

1. Amendments to California's Tier 4 Off-Road Compression-Ignition Engine Regulations and Test Procedures

As a general matter, full harmonization of the requirements and test procedures for the emissions-related certification of engines is critical to any viable and cost-effective regulatory program to control engine emissions, including the regulatory program to implement the near-zero, Tier 4 emission standards that are currently phasing-in for nonroad engines, both in California and nationwide. The costs and complexities of engine certification testing are simply too great for engine manufacturers to comply with more than one set of emissions test procedures and related regulatory requirements.

There are a number of ways to achieve the requisite regulatory harmonization for nonroad engines. One way to ensure the full harmonization between the CARB and EPA certification test procedures applicable to nonroad engines is for CARB simply to adopt and incorporate by reference the relevant EPA regulations contained in Parts 1039, 1065 and 1068 of the Code of Federal Regulations ("CFR"). Moreover, such an adoption and incorporation by reference could cite the adopted EPA regulations "as they may be amended from time to time" to alleviate the need for CARB to undertake future regulatory amendments to track any

additional amendments that EPA may make to its certification test procedures from time to time.

In that regard, it should be noted that technical advancements and improvements to the relevant engine certification test procedures are a continuing project, as evidenced by the ongoing and collaborative work of the Emissions Measurement and Testing Committee ("EMTC"), a group of technical experts from industry and the regulatory agencies (including CARB) that convenes on a regular (often monthly) basis to research and explore potential ways to improve the accuracy and efficiency of the governing regulatory provisions that set forth the relevant engine certification test procedures. In fact, additional EMTC-sponsored technical amendments to EPA's certification test procedures are currently pending and included in EPA's recent rulemaking to adopt GHG emission standards for heavy-duty on-highway engines and vehicles. Unfortunately, as it stands now, CARB's proposed modifications will not pick up those pending EPA amendments, since CARB's harmonization efforts are premised on the EPA regulations in effect as of June 28, 2011. An "incorporation by reference" approach would accommodate the ongoing nature of the technical amendments at issue, and so would help to ensure that the work of the EMTC, when included in EPA's regulations (as in the case of the recent GHG rulemaking) would be regularly incorporated into CARB's test procedures as well, thereby maintaining full regulatory harmonization, not just now, but into the future as well.

EMA recognizes, however, that CARB has opted for a different approach to pursue certification test procedure harmonization. CARB's approach references and incorporates into CARB's test procedure regulations various specific EPA regulations as they exist on a date certain, in this case June 28, 2011 (the date of EPA's most recent codification of a series of EMTC-recommended technical amendments), and so differs from the EMA-recommended approach of simply adopting and incorporating the corollary EPA regulations as they may be amended from time to time. Under CARB's harmonization approach, the current CARB test procedures (i.e., Part 1-C, adopted as of October 20, 2005) will be phased-out effective with the 2010 model year, and new test procedures will phase-in, presumably effective with the current 2011 model year -- see proposed Part I-D (40 CFR 1039), Part I-E (40 CFR 1065), and Part I-F (40 CFR 1068). CARB also proposes to revise the relevant provisions of Title 13 of the California Code of Regulations to reflect and incorporate the test procedures amendments and the amended tables provided in "Attachment D" of the regulatory package as issue. While CARB's approach certainly will help to ensure the requisite regulatory harmonization for the near-term, and so is fully endorsed by EMA, CARB needs to recognize and understand that this harmonization exercise likely will need to be repeated at regular intervals in the future to ensure that the necessary and sufficient degree of harmonization of test procedures for nonroad engines is maintained over time as the collaborative work of the EMTC moves forward (as in the case of the pending technical amendments included in the GHG rulemaking).

One set of future regulatory amendments that CARB should consider adopting in whole by reference are the additional amendments and revisions that will be made and incorporated into 40 CFR Part 1065. Part 1065 contains the very technical specifications and measurement method protocols for engine certification test procedures, including the regulatory provisions pertaining to the calibration of emissions measurement equipment, the design and set-up of emission test cells, the necessary controls for ambient test conditions and potential time lags in recording emissions-related signals and readings, the best practices for the preconditioning of

CVS systems and related equipment, and other highly technical and state-of-the-art emissions measurement techniques. The technical amendments that relate to those issues and that are included in Part 1065 from time to time reflect the best engineering consensus among the leading industry and regulatory emissions measurement experts, including experts from CARB, and do not involve matters touching upon regulatory policy issues or other issues where CARB's regulatory or enforcement discretion might come into play. Thus, there is simply no reason for CARB not to adopt and incorporate by reference on a routine basis any future technical amendments that may be included in Part 1065 through the ongoing and collaborative work of the EMTC.

Another issue impacting the harmonization of CARB's and EPA's certification test procedures relates to the timing of the proposed regulatory amendments at issue. As things stand today, the proposed test procedure modifications will be presented to the Board for its approval on December 16, 2011. However, final approval by the Office of Administrative Law ("OAL") and formal inclusion of the amendments into Title 13 of the California Code of Regulations likely will not occur until mid-2012, at the earliest. This creates significant potential concerns for engine manufacturers that need to utilize the modified test procedures now in connection with their efforts to test and obtain CARB certification of current and future model year nonroad engines.

The Board needs to recognize and address engine manufacturers' concerns in this regard. Specifically, no one anticipates that there will be any substantive opposition to the Board's adoption of the proposed test procedure modifications, which again are aimed at fostering the critically important objective of regulatory harmonization on these highly technical emissions testing issues. In light of this fact, and in recognition of the real constraints that engine manufacturers are under today to utilize certain of the proposed test procedure modifications, the Board should expressly acknowledge in its adopting resolution that engine manufacturers may utilize the proposed test procedure modifications in connection with the certification of 2012 MY (and later) nonroad engines. Such an acknowledgement will help to ensure that the benefits of the pending regulatory amendments are implemented and realized as soon as possible and as they are needed.

In addition to the foregoing general comments pertaining to the paramount importance of regulatory harmonization, EMA has identified four technical corrections that should be made to certain of the proposed test procedure modifications. Those four specific technical corrections are set forth in detail below.

First, on page 47 of Appendix "T," in the second line of text, the word "that" should be "than." Second, on page 34 of Appendix "M," in subparagraph (g)(2), the sentence "Such distributors must bring engines into their final certified condition" is repeated; the repetition should be deleted. Third, on page 58 of Appendix "B," in the regulatory text pertaining to emission warranty statements, the parenthetical term "(year)" should be "(year(s))." Otherwise, engine manufacturers could be forced to reissue their owner/operator manuals each year, even though no other changes may be warranted, solely to include the current specific model year in the warranty statement, as opposed to allowing the appropriate range of model years to be included in the warranty statement. An annual reissuance of the same warranty statement would

not add any more meaningful information for owner/operators, but instead would cause manufacturers to discard otherwise fully useable owner's manuals each year, thereby resulting in unnecessary and readily avoidable waste. The simple correction proposed by EMA fixes this problem. And fourth, as EPA permits under 40 CFR Section 1065.5(a)(3), CARB should permit manufacturers the option to employ the alternative method of using THC measurements to estimate and report CH_4 and N_2O emissions. Similarly, as EPA also allows, CARB should permit engine manufacturers to meet the N_2O reporting requirements for engine families that utilize NOx aftertreatment by using 5% of measured CO_2 emissions divided by 298 (rounded to the nearest 0.001 g/kW-hr).

2. Amendments to California's Small Off-Road Engine Regulations and Test Procedures

EMA also has a number of specific comments relating to the proposed amendments to California's small off-road engine (SORE) regulations and test procedures. As is the case with respect to the harmonization of the Tier 4 nonroad engine certification requirements and test procedures, EMA strongly supports full alignment and harmonization between the CARB and federal regulations relating to the testing and certification of SORE and the nonroad equipment that they power. EMA also greatly appreciates the efforts that CARB staff has undertaken to ensure such alignment and harmonization.

Notwithstanding CARB's efforts, there are a number of revisions that still need to be made to the proposed amended regulations relating to SORE. These revisions do not impact the stringency of the amended regulations, but will help to ensure full alignment between the federal and California regulatory programs. In particular, the necessary revisions are as follows:

Section 1054.101(a)(1) Table: footnote 3 references 40 CFR Part 90.103(a)(2)(ii), which is incorrect. The correct reference is Part 1054.101(a)(2)(ii).

Section 1054.105(a): The reference to Title 13 CCR Chapter 9, Article 1, Section 2403 is not consistent with the proposed language in Section 1054.103(a), which references Section 1054.101. EMA recommends that Section 1054.105(a) be revised to be consistent with Section 1054.103(a) by referencing Section 1054.101.

Section 1054.115(c): The current language is confusing. EMA recommends that the second sentence be revised to read: "Engines must meet applicable emission standards at all specified atmospheric pressures except: (i) engines ≤80 cc displacement for atmospheric pressures below 96.0 kPa; and (ii) engines >80 cc displacement may rely on an altitude kit for atmospheric pressures below 94.0 kPa if you meet the requirements specified in 1054.205(r)."

Section 1054.235(g): CARB should make it clear that the emissions reporting requirements for CH_4 and N_2O are applicable to new certification testing only. In addition, previously conducted engine family certification testing that did not include measurement of CH_4 and/or N_2O data should be allowed to be utilized for on-going or carry-over certification, as is allowed by U.S. EPA.

Section 1065.701: EMA appreciates the certainty and leadtime that CARB is providing for the proposed change to certification test fuel, which will begin in the 2013 model year and be fully implemented in the 2019 model year. CARB also should ensure that the certification test fuel requirements align with CARB's other regulatory programs for fuels, including the Low Carbon Fuel Standard and the related federal RFS-2. The leadtime and certainty associated with test fuel changes, and the consistency between test and market fuels, are critical both for engine manufacturers and CARB.

3. Conclusion

As noted above, EMA greatly appreciates CARB's work toward fully harmonized nonroad certification test procedures and requirements, and also appreciates the opportunity to submit these comments. CARB staff has done an outstanding job in identifying and drafting the proposed modifications and amendments, and the net result will be a more efficient and effective regulatory program for the control of emissions from nonroad engines. That mutually beneficial result is to CARB's credit.

Respectfully submitted,

TRUCK AND ENGINE
MANUFACTURERS ASSOCIATION

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