

October 20, 2014

Clerk of the Board
Air Resources Board
1001 I Street
Sacramento, California 95814

Subject: LEV III Criteria Pollutant Requirements and Test Procedures – 2014 Update

Air Resources Board Members:

We are writing on behalf of the Alliance of Automobile Manufacturers (Alliance)¹ and Association of Global Automakers (Global Automakers)² representing nearly every car and light-truck manufacturer. Together our members represent about 99% of the new vehicle market in California. Subject to the recommendations provided in this letter and the attachments, we support the proposed LEV III criteria regulations and test procedures.

Due to the hard work and innovation of automotive engineers around the world and the standards adopted by this Board, criteria emissions from light-duty vehicles are approaching zero. In fact, today's cleanest vehicles produce about the same smog-forming emissions as an electric vehicle (EV), or rather the same emissions as a clean utility will produce charging an EV. According to the ARB staff, when fully phased in, the average LEV III vehicle emission level "approaches the very low power plant emissions associated with the recharging of battery electric vehicles."³ (emphasis added)

As these ultra-clean vehicles replace older higher-emitting vehicles, the inventory of smog-forming emissions from vehicles will continue to diminish. Under the existing LEV II regulations, light-duty vehicles will be reduced to just seven percent of California's total smog-forming emissions by 2030. LEV III regulations further reduce the light-duty vehicle contribution.

As noted previously, the Advanced Clean Cars regulations (which includes LEV III Criteria, greenhouse gas (GHG), and zero emission vehicle (ZEV) regulations) touch every regulation and

¹ Alliance members are BMW Group, Chrysler Group LLC, Ford Motor Company, General Motors, Jaguar Land Rover, Mazda, Mercedes-Benz USA, Mitsubishi Motors, Porsche, Toyota, Volkswagen, and Volvo.

² Global Automakers' members include Aston Martin, Ferrari, Honda, Hyundai, Isuzu, Kia, Maserati, McLaren, Nissan, Subaru, Suzuki, and Toyota.

³ See "Staff Report: Initial Statement of Reasons for Proposed Rulemaking, Public Hearing to Consider the "LEV III" Amendments to the California Greenhouse Gas and Criteria Pollutant Exhaust and Evaporative Emission Standards and Test Procedures and to the On-Board Diagnostic System Requirements for Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles, and to the Evaporative Emission Requirements for Heavy-Duty Vehicles", December 7, 2011, Page 43

requirement affecting light-duty vehicles and the driving public for the next decade and a half. This period will witness the most dramatic changes in the automobile and its emission control system in history. During the 2015 to 2025 timeframe, regulations require manufacturers to:

- Reduce criteria emissions by 75% or more;
- Extend durability to 150,000 miles;
- Ensure all vehicles meet zero evaporative emission standards;
- Use the on-board diagnostic (OBD) system to monitor, diagnose, and report on all of these emission control technologies;
- Reduce greenhouse gas (GHG) emissions by an average of 4.5 percent each year to achieve a 163 g/mi CO₂ average that would be equivalent to an average fuel economy of 54.5 miles per gallon if reductions came only from fuel economy technology;
- Design, develop, produce, and sell over 1.4 million plug-in hybrid electric vehicles, battery electric vehicles, and fuel cell vehicles (in California alone, and over 3 million nationwide) while carefully monitoring the infrastructure needed for these vehicles;
- Upgrade test procedures and facilities.

All of these requirements must be met with limited resources, both in industry and at the agencies. In March, 2011, recognizing the challenges faced with the resources available, the Associations requested the U.S. EPA and the Air Resources Board (ARB) harmonize their criteria regulations.

Before discussing more specific comments, we would again acknowledge the ARB staff's willingness to work with industry in an open, transparent, and cooperative process. This was true during the original LEV III rulemaking and is true with the current regulatory proposal. As ARB staff developed the regulatory changes, they made themselves available for countless meetings, phone calls, and web meetings, and responded to hundreds of emails. ARB staff's professionalism and willingness to meet and discuss the issues with an open mind and in a cooperative manner directly contributed to noticeable improvements in the regulations. These improvements further harmonize with the federal regulations and streamline the California regulations recognizing the need to balance cleaner, more efficient vehicles with the realities of consumer demand and vehicle technology development, validation, certification, production, and use.

The remainder of this letter provides a few general recommendations on the LEV III criteria pollutant regulations and test procedures. We have attached more detailed recommendations on the test procedures.

1. Regulatory and Test Procedure Changes:

We identified a number of improvements and/or technical corrections to the proposed regulations soon after the ISOR was published on 2-Sep-2014 and met with ARB staff to review these changes. We have included these changes as Attachments 1 (general regulatory recommendations) and 2 (detailed test procedure recommendations) to this document.

The test procedures are critically important to the development, validation, and certification of vehicles. Manufacturers spend considerable resources on the test procedures and the results of the test procedures are the basis for compliance. Consequently, it is important that ARB, EPA, and industry work together to develop robust test procedures that are practicable to implement in a high-volume vehicle test lab setting.

In reviewing the LEV III regulations alongside the final EPA Tier 3 regulations, automakers found several instances where changes to the LEV III test procedures for consistency with Tier 3 would significantly reduce the testing burden without jeopardizing test results. For example, for the past several decades automakers have conducted an ethanol retention calibration of the sealed housing for evaporative determination (SHED).⁴ The ethanol retention calibration is required monthly (or quarterly) in addition to when the SHED is initially commissioned and after major maintenance. This calibration places a high-volume SHED out of commission for at a minimum of a day and sometimes several days.

The purpose of this test is to ensure that materials in the SHED are not adsorbing ethanol from the fuel (or E85). Automakers have performed thousands of ethanol retention calibrations and never has it resulted in any corrective action. As a result, EPA eliminated the periodic ethanol retention calibrations but retained the requirement for SHED commissioning and major maintenance. Based on our discussions with ARB staff, they would also support this approach with minor modifications. However, they are unable to make the change without issuing a 45-Day Notice (i.e., the change cannot be made in the current rulemaking). There are other examples of changes where industry and ARB agree to a streamlined approach, but changes cannot be made in the current rulemaking.

These changes would significantly and materially improve vehicle testing and certification.

We recommend the Board authorize the ARB staff to make the changes identified in Attachments 1 and 2.

We recommend incorporating test procedure changes that have the agreement of industry and ARB staff into a regulatory package for the board's review and approval as soon as possible, but no later than the next light-duty vehicle regulatory change (likely the On-Board Diagnostic rulemaking in early 2015).

2. **Harmonization**: The proposed regulations contain a number of changes to harmonize with Tier 3. These changes ensure the identical standards throughout the United States, and allow automakers to produce a single vehicle for sale nationwide. This significantly increases efficiency and does so without jeopardizing environmental benefits. However, we were disappointed that ARB does not propose harmonization in two specific areas – 50-State Pooling for fleet averages and phase-ins, and interim 8-year carryover of NMOG+NOx credits.

⁴ A SHED is similar to a garage. The vehicle to be tested is driven into the SHED, the SHED is then sealed and the evaporative emissions are measured over a period of several days as the temperature in the SHED is varied according to a specified schedule.

- a. 50-State Pooling: The Tier 3 regulations use the pooled 50-state sales to determine compliance with the NMOG+NOx fleet average and the various phase-in requirements in their regulations. The LEV III regulations, however, use the pooled California plus Section 177 State (CA+177 States) sales to determine compliance with the same. The lack of harmonization will result in automakers managing two fleets – a 50-state fleet and a CA+177 State fleet. Admittedly, this difference in the regulations is primarily an administrative burden and pooling the CA+177 States fleets (adopted in LEV III) dramatically reduced the administrative burden (prior to LEV III, automakers were required to track and manage 13 fleets – CA, eleven 177-State fleets, and the federal fleet). Nonetheless, harmonizing with Tier 3 by adopting 50-state pooling is unlikely to have an appreciable environmental impact. In fact, to the extent California's fleet is composed of smaller passenger cars than the national fleet, 50-state pooling could result in a marginal benefit to California emissions.
- b. 8-Year NMOG+NOx Credit Life: Both the criteria and GHG standards rapidly decline in the 2020-2025 timeframe resulting in substantial risk and uncertainty for automakers. Recognizing this, Tier 3 provides an up-to-8-year life (with some restrictions) for FTP and SFTP NMOG+NOx credits earned in the 2017-2024 model years (MY). This provides automakers flexibility to earn credits in the early years to address market and technology uncertainties in the later years. LEV III does not provide this extension (LEV III allows credits to be carried over for 5 years), and the proposed regulations do not harmonize with Tier 3's extension. The extended carryover would not affect overall emissions since emission reductions would be the same in both cases, only earned earlier if the longer carryover is allowed. We understand the staff's concern regarding technology development and appreciate the staff plans to review this as part of the Mid-Term Review; however, this is an extraordinarily challenging time for both criteria and GHG emission reductions, and the timing for the Mid-Term Review would not allow automakers sufficient time to both earn credits and use them.

We recommend harmonizing LEV III with Tier 3 for both of these issues.

3. IUVP High-Mileage and IUCP Trigger:

- a. IUVP: EPA and ARB both have in-use verification program (IUVP) requirements. Under the IUVP program, manufacturers obtain and test a specified number of customer vehicles with low mileage and then again with high mileage. Currently the high mileage vehicles are required to be tested within a one year period which begins four years after the end of production. Recognizing that typical vehicles driven in-use would not normally have accumulated much more than 50,000 miles during the four years following production, the "high mileage" requirement has historically been set at a minimum of 50,000 miles for each test vehicle. However, to gather data at higher mileage, the program has required one test vehicle from this high mileage sample to have accumulated at least 75% of the useful life mileage or for LEV III vehicles 105,000 miles. In reviewing the LEV III requirements, automakers noticed a difference between the new high-mileage IUVP testing requirements for Tier 3 and LEV III.

- i. LEV III High-Mileage: The LEV III program requires that ALL test vehicles from actual LEV III test groups must have a minimum odometer mileage of at least 105,000 miles; whereas the previous requirement was retained for vehicles that remain designated as LEV II vehicles (i.e., minimum of 50,000 miles for all of the test vehicles except one with a minimum mileage of 75 percent of the full useful life mileage).
- ii. Tier 3 High-Mileage: Tier 3 retains the minimum mileage requirement of 50,000 miles for all of the test vehicles and then only requires that at least one vehicle in each test group have a minimum odometer mileage of 105,000 miles or 75 percent of the full useful life mileage, whichever is less.

Obtaining a vehicle with over 105,000 miles in the relatively short time after production is difficult. By limiting the number of vehicles required to have 105,000 miles, the results of the test program can be obtained mainly from in-use vehicles that have accumulated mileage at a typical or normal rate. Hence, Tier 3 continues to require only one vehicle to have the extra high mileage. But the LEV III requirement that all of the vehicles must have at least 105,000 miles would be very difficult or near impossible to achieve within the required four to five year period after the end of production.

- b. IUCP: EPA and ARB also have in-use compliance program (IUCP) requirements. The agencies conduct IUCP testing based on data obtained from IUVP testing. The vehicles tested in IUVP are tested “as received” without screening for proper maintenance. If the results from IUVP testing for a given test group exceed certain specified limits, then the manufacturer is required to run an IUCP test for that test group. The vehicles procured for IUCP testing are screened for proper maintenance. In the current program design the one “extra high mileage” IUVP vehicle is excluded from this IUCP “trigger” computation given there would only be one such vehicle and given it would have accumulated mileage at an abnormal rate (in excess of 20,000 miles annually).

Both the EPA Tier 3 and original LEV III regulations contain this original exclusion of the extra high mileage vehicle. However, in both cases, the language in the regulations still refers to this vehicle as being the one with a mileage of at least 75% of the useful life. In the case of Tier 3, EPA has recognized that they need to amend this section to read 105,000 miles or 75% of the useful life, whichever is less, to make this requirement consistent with the changes it has made to the IUVP extra high mileage provision. EPA has said it will make the correction in its upcoming Tier 3 correction/amendment rulemaking.

The proposed amendments to the LEV III program do not address this IUCP trigger requirement. Hence if not amended the regulation would continue to refer only to excluding the vehicle having a minimum mileage of 75% of the useful life and would not mention the 105,000 mile limitation. This change to ARB’s regulation is suggested to align with the original intent of how IUCP testing is conducted and ultimately be aligned with EPA’s provisions, once EPA completes its correction/amendment rulemaking.

For IUVP, we recommend ARB harmonize the LEV III requirements with Tier 3. For the determination of IUCP test groups, ARB should exclude the one extra high mileage IUVP vehicle that would have either 75 percent of full useful life mileage or 105,000 miles, whichever is lower.

We appreciate your consideration and look forward to working with you and the ARB staff to implement these ambitious regulations.

Sincerely,

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Attachments