State of California
AIR RESOURCES BOARD

**Final Statement of Reasons for Rulemaking,
Including Summary of Comments and Agency Response**

PUBLIC HEARING TO CONSIDER TECHNICAL STATUS AND PROPOSED REVISIONS TO MALFUNCTION AND DIAGNOSTIC SYSTEM REQUIREMENTS AND ASSOCIATED ENFORCEMENT PROVISIONS FOR 2004 AND SUBSEQUENT MODEL YEAR PASSENGER CARS, LIGHT-DUTY TRUCKS, AND MEDIUM-DUTY VEHICLES AND ENGINES (OBD II)

Public Hearing Date: April 25, 2002
Agenda Item No.: 02-3-2

I. GENERAL

The Staff Report: Initial Statement of Reasons for Rulemaking (ISOR or "Staff Report"), entitled "Technical Status and Revisions to Malfunction and Diagnostic System Requirements for 2004 and Subsequent Model Year Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles and Engines (OBD II)", released March 8, 2002, is incorporated by reference herein.

Following a public hearing on April 25, 2002, the Air Resources Board (the Board or ARB) by Resolution 02-17 approved, with modifications, the adoption of sections 1968.2 and 1968.5, title 13, California Code of Regulations (CCR). Upon becoming operative, section 1968.2 would establish OBD II requirements for 2004 and subsequent model year vehicles; section 1968.5 would establish an OBD II-specific in-use enforcement protocol. Resolution 02-17 is incorporated by reference herein. Within the resolution, the Board directed the Executive Officer to adopt the proposed regulations after making available for public comment all changes specifically directed by the Board and any other necessary changes to the regulatory language as originally proposed in the Staff Report released on March 8, 2002. The changes directed by the Board, in addition to other changes initiated due to comments received during the hearing and the 45-day period prior to it, were made available for public comment in the ARB's Notice of Public Availability of Modified Text (First 15-Day Notice) on October 10, 2002. Descriptions of and rationales for the modifications were provided in the attachments to the First 15-Day Notice. On January 15, 2003, the ARB issued a Second 15-Day Notice to address additional public comments. Both 15-Day Notices are incorporated by reference herein.

In the 45-Day Notice for this rulemaking, the ARB referenced that several Society of Automotive Engineers (SAE) and International Organization of Standards (ISO) documents would be incorporated by reference in title 13, CCR section 1968.2. Staff subsequently revised and updated the titles and publication dates of some of these documents in the First 15-Day Notice. The SAE and ISO documents that are incorporated by reference in the regulation are:

SAE J1930 "Electrical/Electronic Systems Diagnostic Terms, Definitions, Abbreviations, and Acronyms – Equivalent to ISO/TR 15031-2:April 30, 2002", April 2002;
SAE J1939 APR00-“Recommended Practice for a Serial Control and Communications Vehicle Network” and the associated subparts included in SAE HS-1939, “Truck and Bus Control and Communications Network Standards Manual”, 2001 Edition;
SAE J1962 "Diagnostic Connector – Equivalent to ISO/DIS 15031-3:December 14, 2001", April 2002;
SAE J1978 "OBD II Scan Tool – Equivalent to ISO/DIS 15031-4:December 14, 2001", April 2002;
SAE J1979 "E/E Diagnostic Test Modes – Equivalent to ISO/DIS 15031-5:April 30, 2002", April 2002;
SAE J1850 "Class B Data Communications Network Interface", May 2001.
SAE J2012 "Diagnostic Trouble Code Definitions – Equivalent to ISO/DIS 15031-6:April 30, 2002", April 2002;
ISO 9141-2:1994 "Road Vehicles-Diagnostic Systems-CARB Requirements for Interchange of Digital Information", February 1994;
ISO 14230-4:2000 "Road Vehicles-Diagnostic Systems-KWP 2000 Requirements for Emission-related Systems", June 2000;
ISO 15765-4:2001 "Road Vehicles-Diagnostics on Controller Area Network (CAN) - Part 4: Requirements for emission-related systems", December 2001.

Additionally, the following documents have also been incorporated by reference in sections 1968.2 and 1968.5:

Speed Versus Time Data for California’s Unified Driving Cycle, December 12, 1996;
Air Resources Board (ARB) Manufacturers Advisory Correspondence (MAC) No. 99-06, “Certification of Direct Ozone Reduction Technologies,” December 20, 1999;
ARB Mail-0ut #95-20, “Guidelines for Compliance with On-Board Diagnostics II (OBD II) Requirements”, May 22, 1995;
EMFAC2000 “Public Meeting to Consider Approval of Revisions to the State’s On-Road Motor Vehicle Emissions Inventory: Technical Support Document, Section 7.1, ‘Estimation of Average Mileage Accrual Rates from Smog Check Data,’” May 2000.

Existing administrative practice of the ARB has been to have technical recommended practices, such as the above, incorporated by reference rather than printed in the CCR. These procedures are highly complex and technical documents. They include “nuts and bolts” engineering protocols and detailed inventory data and have a limited audience. Because the ARB has never printed these types of documents in the CCR, the affected public is accustomed to the incorporation format utilized in sections 1968.2 and 1968.5. Moreover, printing portions of the documents in the CCR when the bulk of the procedures are incorporated by reference would be

unnecessarily confusing to the affected public. The full documents are instead available for public inspection from the Clerk of the Board at 1001 “I” Street, 23rd floor, Sacramento, California 95814.

Economic and Fiscal Impacts. The businesses to which the regulations are principally addressed and for which compliance would be required are the 34 domestic and foreign corporations that manufacture California-certified passenger cars, light-duty trucks, and medium-duty gasoline and diesel fueled vehicles that are equipped with second generation on-board diagnostic systems (OBD II). There is only one plant in California – the NUMMI facility in Fremont – that produces California certified motor vehicles. Other businesses that would be directly affected by the regulations are businesses licensed by the Bureau of Automotive Repair as inspection and maintenance (I/M) facilities that perform smog check tests using OBD II systems.

The new and modified requirements involve development and verification of software already incorporated into OBD II systems. Because manufacturers would be provided sufficient lead time to incorporate the proposed changes when redesigning vehicles to comply with the Low Emission Vehicle II (LEV II) program, incorporation and verification of the revised OBD II software would be accomplished during the regular design process at virtually no additional cost. Any additional engineering resources needed to comply with the program would be small, and when spread over several years of vehicle production, these costs would be negligible.

It is anticipated that licensed I/M service stations will experience a one time cost of approximately $500 to upgrade existing equipment to test vehicles equipped with the Controller Area Network (CAN) OBD II communication protocol. There are approximately 10,000 I/M stations in California; the total cost resulting from allowing the use of the CAN protocol in the initial years of the regulation (CAN is not required on all vehicles until 2008) would be approximately $5 million.

The Board has determined that this regulatory action will not result in a mandate to any local agency or school district the costs of which are reimbursable by the state pursuant to Part 7 (commencing with section 17500), Division 4, Title 2 of the Government Code.

Alternatives. For the reasons stated in the Staff Report and the agency’s response to comments in this Final Statement of Reasons, the Board has determined that no alternative considered by the agency would be more effective in carrying out the purpose for which the regulatory action was proposed or would be as effective and less burdensome to affected private persons than the action taken by the Board.

Alternatives considered include the adoption of higher MIL illumination thresholds for many of the major monitors. However, staff’s analysis showed that the use of higher thresholds would provide reduced emission benefit without improving the cost-effectiveness of the program. Further, the lost emission benefits would not be

recoverable through any other program in a more cost-effective manner than staff's proposed MIL illumination thresholds.

Staff also considered the adoption of the enforcement regulation (section 1968.5) without the requirements for mandatory recall in the most egregious situations. However, to meet California's clean air goals, the ARB is dependent on the OBD II program to ensure the emission benefits of the Low Emission Vehicle (LEV) II program are achieved. Allowing substantial violations of the OBD II regulation to go uncorrected through recall would increase the possibility of significant reductions in the emission benefits of the LEV II program. The mandatory recall provisions also make certain that the integrity of the OBD II program is maintained, and encourage vehicle manufacturers to commit sufficient resources to ensure that vehicles comply with the regulation and that OBD II and emission systems are more durable.

Staff also considered the suggested alternative that, on average, tailpipe and evaporative fleet emissions be considered in ordering recall. This alternative was rejected for several reasons. First, the OBD II requirements serve a very different purpose than the exhaust and evaporative emission standards, and compliance with the latter should not excuse noncompliance with the former. The program is not intended to flag pattern emission-related problems. That is the purpose of the exhaust/evaporative in-use enforcement program. The intent of the OBD II program is to build on top of that program to ensure that individual vehicles driven in-use achieve the increasingly lower emission reductions to which they have been certified. The OBD II program, which has become a part of the State I/M Program, is necessary to guard against high emissions from individual vehicles. Second, projections of vehicle fleet emissions 15, 20, or even more years into the future is speculative and cannot be done with any accuracy.

II. SUMMARY OF COMMENTS AND AGENCY RESPONSE

At the April 25, 2002 hearing, oral testimony was received in the following order from:

Mr. Greg Dana, Alliance of Automobile Manufacturers / Association of International Automobile Manufacturers (Alliance/AIAM)*
Mr. David Ferris, Alliance/AIAM
Mr. Grant Nakayama, Alliance/AIAM
Mr. Richard Kozlowski, Toyota
Mr. Frank Krich, DaimlerChrysler
Ms. Lisa A. Stegink, Engine Manufacturers Association (EMA)*
Mr. Eric T. Swenson, International Truck and Engine Corporation (ITEC)*
Mr. John Trajnowski, Ford Motor Company (Ford)

Those names above noted with an asterisk also submitted written comments. Most of these written comments were received during the 45-day comment period prior to the hearing.

Other written comments were received by the hearing date from:

Mr. Michael McCormick, Citizen
Mr. Mark Stepper and Mr. Robert Jorgensen, Cummins, Inc. (Cummins)
Mr. Michael J. Conlon, Automotive Engine Rebuilders Association / Automotive Parts Rebuilders Association; Mr. Aaron Lowe, Automotive Aftermarket Industry Association; and Ms. Deanne Ottaviano, Motor and Equipment Manufacturers Association (Aftermarket Group)
Mr. William A. Leasure, Jr., Truck Manufacturers Association (TMA)
Ms. Julia C. Becker and Mr. Charles H. Lockwood, II, Alliance/AIAM

Late written comments sent after the 45-day comment period were received from:

Mr. Greg Dana and Mr. John Cabaniss, Alliance/AIAM
Mr. Stephan Schlaefli, Porsche AG, and Mr. H. Kipp, Robert Bosch GmbH (Porsche)

Written comments in response to the First 15-Day Notice were received during the First 15-day comment period from:

Ms. Julia C. Becker and Mr. Charles H. Lockwood, II, Alliance/AIAM
Ms. Lisa A. Stegink, EMA

Written comments in response to the Second 15-Day Notice were received during the Second 15-day comment period from:

Ms. Julia C. Becker and Mr. Charles H. Lockwood, II, Alliance/AIAM
Dr. Michael Hafner and Douglas Janzen, Mercedes-Benz (Mercedes)
Mr. Frank Krich, DaimlerChrysler
Ms. Donna R. Black, DaimlerChrysler Manufacturing International LLC (DCMI)
Mr. Wolfgang Groth, Volkswagen of America, Inc. (VW)

Late written comments sent after the Second 15-Day comment period were received from:

Mr. Stephan Schlaefli, Porsche

No comments were submitted by the Office of Small Business Advocate or the California Trade and Commerce Agency.

Below is a summary of each objection or recommendation made regarding the specific regulatory actions proposed, together with an explanation of how the proposed action was changed to accommodate each objection or recommendation, or the reasons for making no change. The comments have been grouped by topic wherever possible. Comments not involving objections or recommendations specifically towards the rulemaking or to the procedures followed by the ARB in this rulemaking are not summarized below.

45-DAY COMMENTS

SECTION 1968.2 COMMENTS

GENERAL

1. Comment: Section 1968.2 includes many new monitoring requirements, so it is essentially a "technology-forcing" regulation. There are concerns about the technical feasibility of some of these new requirements. Many of these monitoring strategies have not been evaluated yet. (Alliance/AIAM)(DaimlerChrysler)(Ford)

2. Comment: The malfunction thresholds, which are tied to the very low Low Emission Vehicle II emission standards, are too stringent. There is concern about how reliable and cost-effective, in terms of emission benefits, OBD II–related repairs will be. They should instead be tied to the Ultra-Low Emission Vehicle I (ULEV I) standards. ( )(DaimlerChrysler)

3. Comment: If not tied to ULEV I standards, the malfunction thresholds for Low Emission Vehicle II applications should be an appropriate additive standard (i.e., a numerical value above the standard) instead of a multiplicative standard. (Alliance/AIAM)

4. Comment: The ARB has not shown that the thresholds are "necessary, cost-effective, and technologically feasible," as required by Health and Safety Code section 43013. (Alliance/AIAM)

5. Comment: The ARB should review industry progress towards meeting these requirements and should revise the OBD II regulations as needed at the biennial review (Alliance/AIAM)(EMA).

   Agency Response to Comments 1-5: As discussed in the Staff Report on pp. 88-90, the ARB staff believes that the proposed malfunction thresholds are necessary to ensure that manufacturers design durable emission control systems and to achieve the potential emission benefits of the Low Emission Vehicle II program. Though manufacturers believe that higher malfunction thresholds would result in more cost-effective repairs in terms of emission benefits (since less repairs would occur), the ARB believes that may not be the case, since higher thresholds may encourage manufacturers to use less robust components to maximize cost savings, and thus would result in more frequent repairs. Further, the staff's analysis has shown that proposing higher malfunction thresholds than those proposed by the ARB would be less cost-effective (see Appendix III of the Staff Report). To wait for further emission consequences before making repairs would not necessarily lower costs, but could damage other expensive components, requiring more costly repairs.

Concerning technical feasibility of meeting these requirements, the staff identified likely monitoring strategies and existing data and/or strategies that meet the proposed monitoring requirements in sections III. and IX. of the Staff Report. In summary, many of the new monitoring requirements are currently being satisfied by manufacturers on a portion of their California or European models, including several certified to the most stringent tailpipe standard known as SULEV. For some of the requirements, analysis by the staff, technical papers, and/or testing performed by automotive suppliers have demonstrated the feasibility of meeting the requirements. For still others, the new monitoring requirements simply reflect improvements to existing monitoring requirements that reflect the level of monitoring performance that current technology has been able to satisfy. The staff has further addressed manufacturers' concerns by providing leadtime and phase-in plans for many of these new requirements so that manufacturers can develop new strategies or modify existing strategies to incorporate these changes across all vehicle models. This leadtime also allows manufacturers to meet the new requirements in the most cost-effective manner by implementing changes at the same time they are implementing substantial software changes to meet the Low Emission Vehicle II standards. Additionally, as the Board directed during the hearing and in Resolution 02-17, the staff will come back in two years during its biennial review to modify the OBD II regulation, including the malfunction thresholds, where necessary.

6. Comment: The "purpose" sections of sections 1968.2(a) and 1968.5(a) state that the intent of the regulations is to establish "emissions standards and other requirements" for OBD systems that would apply "for the actual life of the vehicle" and "under normal driving conditions." The cited language of the two sections raises a number of controversial legal issues that appear to be extraneous to the stated goals of the rulemaking and should be removed from the proposed regulations. (Alliance/AIAM)

7. Comment: We have reservations about monitoring emission systems in-use "for the actual life of the vehicle." Developing a performance standard beyond a vehicle's useful life would not meet the tests of "necessity" and "cost effectiveness" of HSC section 43013. (Alliance/AIAM)

   Agency Response to Comments 6-7: The commenters initially made this comment in a letter submitted to the ARB on August 21, 2001. The regulations noticed by the ARB for 45-day public comment were different from the preliminary drafts to which the August 21 comments were directed. First, section 1968.5(a)(2), as initially noticed and adopted, does not reference the terms mentioned in the comment. Second, the purpose clause of the OBD II requirements, section 1968.2(a), as noticed and adopted, does not include the reference "under normal driving conditions."

   Section 1968.2(a), as adopted, continues to state that a purpose of the regulation is to "establish emission standards" and that OBD II systems "shall monitor emission systems in-use for the actual life of the vehicle." This language

continues to be included in the regulation for the simple reason that it reflects the purpose and intent of the regulation. See Agency Response to Comments 55-57, infra. as to whether OBD II emission threshold requirements are emission standards. Specifically, the purpose and intent of the reference "for the actual life of the vehicle" is to make it clear that OBD II monitors are expected to operate for the actual life of the vehicle (See Staff Report: Initial Statement of Reasons for the 1989 rulemaking, at p. 4 and for 1991 rulemaking at p. 4.) As stated in the 1991 Staff Report:

> Although [other programs are] aimed at assuring compliance of the vehicle fleet, on average, with emission standards over 100,000 mile interval, there is still a need to better identify excess emissions from the relatively small number of malfunctioning vehicles in this group. Further, there is an even greater need to address excess emission from vehicles beyond 100,000 miles, the time when emission components are most likely to fail. When coupled with California's Smog Check Program, OBD II is aimed at assuring effective emission control from vehicles over their total lives. (*Id.*)

As indicated, it is beyond dispute that as vehicles age, their emissions' performance tends to deteriorate and that the greatest emission reduction benefits from OBD II systems will be likely be achieved from older vehicles. In adopting requirements for OBD II systems that are expected to perform for the actual life, the Board repeatedly found in all Board hearings between 1989-1996 that the requirements were necessary and cost-effective. After review of the record, the Board similarly found the newly proposed requirements, which contain express language that OBD II systems be designed to operate, without any required scheduled maintenance, for the actual life of the vehicle, to be cost-effective and necessary. (See section 1968.2(d)(1.3).)

It should be noted, however, that a vehicle manufacturer's liability for performance of the OBD II system beyond the full useful life is fairly limited. Enforcement testing and verification that a manufacturer has met the required emission thresholds are limited to full useful life. Beyond the full useful life, manufacturers are solely prohibited from intentionally designing their system to stop working or work in a different manner (e.g., desensitized, etc.). Given that the majority of the OBD II system is comprised of software routines within the vehicle's on-board computer and that software neither ages nor deteriorates with time, designing a system that ensures the software continues to work for the actual life of the vehicle is not an overbearing task.

8. Comment: More leadtime should be given for 2004 model year vehicles, since most manufacturers have already finalized 2004 model year designs and have not developed the software modifications needed to implement the new requirements of the 2004 model year. (Alliance/AIAM)

Agency Response: Staff agreed with this comment and added sections 1968.2(d)(2.5), (e)(18.9), and (f)(7.2) to provide additional leadtime for 2004 model year vehicles in implementing certain requirements of section 1968.2 that are substantively different from those of section 1968.1 of title 13, CCR, provided manufacturers produce data and/or engineering evaluation demonstrating the need for the leadtime, which may include software or hardware change. These changes were incorporated in the First 15-Day Notice.

9. Comment: Section 1968.2(d)(1.3) states that the OBD II system shall be designed to work for the "actual life" of the vehicle. There is concern over the usage of the phrase "actual life", which seems to indicate that enforcement extends beyond a vehicle's useful life, which the ARB has indicated it did not intend. Thus, the language "This section is not intended to alter existing law and enforcement practice regarding a manufacturer's liability for a vehicle beyond its useful life, except where a vehicle has been programmed or otherwise designed so than an OBD II system deactivates based on age and/or mileage of the vehicle" should be added to section 1968.2(d)(1.3). (Alliance/AIAM)

   Agency Response: The staff agreed with this comment and language was added as suggested in the First 15-Day Notice.

10. Comment: Sections 1968.2(d)(2.2), (e)(3.4), and (e)(6.4) - Requiring "freeze frame" conditions to be erased in conjunction with the erasure of the pending fault code in section 1968.2(d)(2.2) could confuse service technicians. This also applies to section 1968.2(e)(3.4) for the misfire monitor and section 1968.2(e)(6.4) for the fuel system monitor. ( )

    Agency Response: The staff eliminated references to storage and erasure of "freeze frame" conditions in conjunction with storage and erasure of pending fault codes in these sections. Additionally, sections 1968.2(d)(2.2.4), (e)(3.4.3), and (e)(6.4.4) now allow storage and erasure of "freeze frame" conditions in conjunction with storage and erasure of either a pending or confirmed fault code. These changes were incorporated in the First 15-Day Notice.

11. Comment: Section 1968.2(d)(2.2.3) – For manufacturers who employ alternate statistical MIL illumination and fault code storage protocols, the limitation of the maximum number of driving cycles should be increased from six to ten. This would allow for more accurate detection of intermittent faults, thus causing less frustration for repair technicians and improving the cost-effectiveness of repairs. (Alliance/AIAM)

    Agency Response: The staff disagrees with this comment, and thus did not change this language in the regulation. As stated previously in the FSOR for the 1994 Board Hearing, while the ARB believes that statistical algorithms can be used effectively as alternate MIL illumination protocols and thus, allows their usage, the staff believes it is necessary to limit the "run-length" of these algorithms to six on average in order to ensure the timely detection of

malfunctions in a manner equivalent to the standard MIL illumination protocol referred to as “two-in-a-row”. Even with a limit of six on average, some malfunctions will not be detected until 10 or more trips due to the variation associated with the algorithm. Should the limit be further extended to 10 on average, the variation will also increase, causing malfunction detections to be delayed until 20 or more trips in some cases, which is not reasonably timely nor equivalent to the standard MIL illumination protocol.

IN-USE MONITOR PERFORMANCE

12. Comment: Regarding the in-use performance ratio requirements, there is concern over the feasibility of OBD II systems identifying defects in two weeks. The ARB has not demonstrated why “two weeks” is superior to either longer or shorter periods. Additionally, the ARB has not demonstrated what the emission consequences are if a monitor takes longer than two weeks to identify a defect. If there are no discernable emission consequence associated with a monitor requiring somewhat longer than two weeks, there is no air quality basis for requiring expensive repairs to be performed to an OBD II system to achieve an arbitrary goal set by the staff. ( )

13. Comment: Basing the minimum required in-use monitor performance ratios on a malfunction detection rate required to ensure 90 percent of all vehicles illuminate the MIL in two weeks (two weeks/90 percent) is not appropriate and yields little emission benefits. (Alliance/AIAM)

Agency Response to Comments 12-13: The ARB believes that the “two weeks” criterion is the appropriate standard based on many factors. As discussed in the Staff Report (pp. 54-59), OBD II is designed to ensure that vehicles meet the increasingly stringent tailpipe and evaporative emission standards throughout their entire lives. If OBD II monitors run less frequently and emission-related malfunctions are not readily corrected, the maximum emission benefits of the Low Emission Vehicle II program will not be achieved. Furthermore, because the two week criterion targets only 90% of the population, a segment of the vehicle fleet will indeed take longer to detect a malfunction. Thus, if the two week criterion for 90% of the population is extended, vehicles in the other 10% of the fleet may require several months to detect malfunctions. This delay in detection would consequently result in a delay in the vehicle owner seeking repairs and extend vehicle operation with an emission-related malfunction. In addition to the increased emissions that occur during this time, continued operation of the vehicle with some malfunctions can cause accelerated deterioration or subsequent damage to other emission-related components. Additionally, monitors with overly restrictive enable conditions (i.e., that are unable to detect a malfunction within “two weeks”) could hinder vehicle repair services, since technicians generally exercise the OBD II monitor after an OBD II-related repair is conducted to verify that the repair was successful. In fact, this validation testing is required in order to pass an OBD II-based I/M (Smog Check) inspection. Taking these and other factors discussed in the Staff Report into

account, “two weeks” is the appropriate time period in which the MIL should illuminate. Further, based on the staff’s experience and current data, the vast majority of manufacturers should be able to meet these proposed ratios with their current monitoring strategies.

14. Comment: Also, we have significant issues about the method the ARB used to develop the in-use monitor performance ratios, including the ARB’s usage of a “nonrandom” sample of vehicles and drivers, as indicated by Sierra Research’s analysis. There are three significant problems with data from the “29 vehicle” test fleet as well as the ARB’s analysis of the in-use driving data in the Staff Report. First, not all vehicles were tested for all monitors. Second, the majority of the monitors were not tested in a “fail” condition. Many manufacturers require a longer monitoring time period in making “fail” determinations than “pass” determinations. Third, since the vase majority of the driving was by five or six ARB employees, the ARB should have ensured that the in-use driving demonstrated in the “29 vehicle” database reflects typical operation, which it did not. (Alliance/AIAM)

    Agency Response: As already discussed in the Staff Report (p. 58), the ARB staff did not intend the 29-vehicle data to be representative of actual population sample data, but rather to show that current OBD II monitors exist that are very likely able to meet the ARB’s proposed ratios. Further, the data were not derived from vehicles in a test program specifically designed to determine the in-use monitoring ratios—historical data from vehicles tested by the staff for various reasons over the last few years were analyzed to determine what the observed estimated monitoring frequency would be. Thus, the test data are not as ideal as those that would be generated from a specific test program designed to measure in-use performance ratios. Nonetheless, the staff believes the data are meaningful and do provide an indication that current monitoring strategies can meet the monitoring frequency proposed by the staff. As more in-use data become available during the first few years of in-use performance ratio implementation, the ARB staff will revisit the required in-use performance ratios and modify them accordingly if necessary.

15. Comment: The ARB failed to demonstrate the technical feasibility of the proposed ratios for monitors requiring cold starts. If the ARB modified the definition of the filtered Evap trip (for monitors requiring cold starts) to consider the difference between the engine coolant temperature and ambient temperature, the fraction of the vehicles from the Tri-City database that did not meet this trip definition would be 10%. Additionally, obtaining the 0.520 ratio for the 0 .040 inch leak check simply by multiplying the 0.260 ratio of the 0.020 inch leak check by two does not demonstrate technical feasibility of the proposed ratio. (Alliance/AIAM)

    Agency Response: The staff’s methodology for determining the minimum ratios for the evaporative system monitors is specifically detailed in pages 60-61 and Appendix IV and V of the Staff Report. In summary, the requirements setup by

the ARB do not accumulate denominator trips in the evaporative system monitor ratios unless engine coolant temperature and ambient temperature are indeed within a certain tolerance of each other. And the staff, using all available resources, took this into consideration when analyzing the data in the Tri-City database to determine the appropriate ratios. And yes, using that data, about 10% of the vehicles did not encounter any cold starts meeting this definition in the week or so of data collected during the Tri-City testing. With the ARB requirements, those vehicles would thus not increment the denominator at all during the week and analysis of the ratio would show that the vehicle was not operated at all. Thus, even if the evaporative system monitor did not run at all, the numerator would be zero, the denominator would be zero, and the manufacturer would be in compliance with the in-use performance ratio and would not be held liable for infrequent monitoring based on that vehicle.

Further, the fact that the database had short periods of vehicle operation (e.g., one to two weeks) and that 10% of the vehicles never met the criteria for a denominator trip was one of the very reasons staff constructed the required ratio around the target of 50% of the vehicles illuminating the MIL within two weeks (instead of 90% of the vehicles like other monitors require). Thus, the staff accounted for the limits of the database (and in fact specifically cited it) by modifying the minimum ratios appropriately.

Regarding the technical feasibility of the 0 .040 inch leak check minimum ratio versus the 0.020 inch leak check ratio, the staff believes its calculation was indeed appropriate. The denominators for the two ratios are incremented in the exact same manner, so they will increment at the exact same rate on cars. Therefore, the only difference will be the rate at which the numerators increment. In the staff's experience, the 0.040 inch leak checks easily run twice as often, if not even more often, as the 0.020 inch leak monitors, which does indeed equate to a ratio that is twice that of the 0.020 inch leak monitor ratio. The staff will, however, continue to monitor manufacturer progress with compliance as more data become available and address the issue at the biennial review, if necessary.

16. Comment: While industry agrees that basing the ratio for the cold start monitors on MIL illumination for 50 percent, not 90 percent, of the vehicles within a two-week period is acceptable (due to the uncertainty caused by the limitations of the Tri-City database), it believes this uncertainty is independent of the target frequency. Thus, the ratio values for all cold start-related monitors should be calculated based on the "one time per two weeks (three weeks for 0.020" leak)" target, meaning a MIL illumination within four weeks (six weeks for 0.020" leak). The relative stringency of the monitor conditions should not be relevant at all. (Alliance/AIAM)

    Agency Response: The staff disagrees with the commenters' assertion that the uncertainty cited by the staff as justification for the evaporative system target ratio is also applicable to other cold start monitors. The reason is the fundamental difference between the way the denominators (and thus, the ratios)

are incremented for evaporative system monitors versus the other cold start monitors. For the evaporative system monitor, there is less of a direct link between incrementing of the denominator and incrementing of the numerator because the denominator criteria does indeed verify a cold start but does not identify any of the other criteria most often used to enable an evaporative system monitor such as fuel level, a sustained idle period, a sustained cruise, lack of fuel slosh, etc. This uncertainty, combined with the fairly constrained monitoring requirements for evaporative system monitors, makes it appropriate to target 50% of the vehicle population.

The other cold start monitors, however, have a very different denominator incrementing strategy. For these monitors, one of the criteria that has to be satisfied to increment the denominator on a trip is that the component or system being monitored was actually commanded "on" for more than 10 seconds or on two or more occasions. While there is not a requirement for the monitors of such components to complete within the 10 seconds, there is a much stronger link between trips that increment the denominator and those where the monitor may indeed run because the manufacturer can be assured that the monitored component actually functioned for some amount of time on that trip. This means that the denominator criteria will better account for differences in vehicle owner habits and only accumulate denominator trips when the actual components functioned. The result is that the uncertainty that exists in the database is nearly completely accounted for with the different denominator criteria. The staff will, however, continue to monitor manufacturer progress with compliance as more data become available and address the issue at the biennial review, if necessary.

17. Comment: Section 1968.2(d)(3.2) - The phase-in requirement of 50/75/100 percent for in-use performance ratio monitoring beginning with the 2005 model year involves significant manufacturer workload and should be relaxed to allow manufacturers to update software and make necessary changes. (Alliance/AIAM)

18. Comment: The phase-in requirement should be changed from 50/75/100 percent to 30/60/100 percent. ( )

    Agency Response to Comments 17-18: The staff agreed with the above comments and changed the phase-in requirement to 30/60/100 percent as suggested in the First 15-Day Notice.

19. Comment: An interim, less stringent certification requirement for in-use performance ratio should be used, since manufacturers do not have sufficient time to collect data to confirm that their vehicles meet the minimum certification requirements. (Alliance/AIAM)

20. Comment: A monitoring frequency ratio of 0.1 should be implemented for certification during the first two years of a vehicle's implementation. (EMA)

Agency Response to Comments 19-20: The staff agreed with the above comments and added section 1968.2(d)(3.2.1)(D), which allows manufacturers to certify new vehicles up to the 2007 model year to an in-use performance ratio of 0.100 for the first two model years. This modification was added in the First 15-Day Notice.

21. Comment: Since the current monitoring frequency requirements extend beyond the five major monitors that the ARB originally proposed at the 2001 workshop, manufacturers need more time to gather and analyze data to confirm compliance with the requirements. Therefore, it is extremely difficult to implement the ratio requirements before the 2007 model year. (Alliance/AIAM)

    Agency Response: As indicated above, the staff agreed to relax both the phase-in percentages and the required in-use performance ratios for the earlier model year applications. Additionally, the monitors that the requirements were extended to include are generally much less complex than the major monitors and consequently, run much more frequently than the major monitors. Accordingly, manufacturers should be able to comply with the requirements as modified in the First 15-Day Notice. The staff will continue to monitor progress in compliance with these requirements and will report its findings to the Board at the next biennial review.

22. Comment: Reopen the regulation at a later date to reconsider the final ratio requirements based on manufacturers' data. (Alliance/AIAM)(EMA)

    Agency Response: As the Board directed during the hearing and in Resolution 02-17, the staff will come back in two years during its biennial review to modify the OBD II regulation, including the final ratios, where necessary.

23. Comment: In determining when the denominator is incremented (section 1968.2(d)(4.3.2)(B)), the ARB should specify *when* the 30-second idle period is to occur in the drive, since some monitors require an idle period after the car is fully warmed up and other monitors require an idle period at the start of a trip. (Alliance/AIAM)

    Agency Response: Drive cycles that meet the criteria necessary to increment the denominator are not intended to be special drive cycles where all monitors run. The denominator concept is simply a measure of vehicle operation to gauge how often a vehicle has been driven. The minimum enable criteria were included primarily to filter out drivers who often make frequent short trips or who operate their vehicles in a very constrained or limited manner that could preclude several monitors from running. As such, the denominator criteria were not added in a manner that would construct a driving cycle where all monitors were guaranteed to run nor should they be. The purpose of in-use performance ratios is to ensure adequate in-use monitoring frequency for all drivers, not just those who drive in a pre-defined manner that meets the denominator enable criteria. Accordingly, the

current idle criteria ensures simply that drive cycles that encounter no or very minimal idle operation will be discarded.

24. Comment: Section 1968.2(d)(4.2.2)(A) – The reference to (d)(4.2.2)(F) is incorrect, since this section does not exist. (Alliance/AIAM)

    Agency Response: The staff corrected this to (d)(4.2.2)(E) in the First 15-Day Notice.

25. Comment: There should be an escape clause for particular monitors, such as the particulate matter trap monitor, that require special driving conditions to enable monitoring and thus run less frequently than other monitors. (Alliance/AIAM)(EMA)

    Agency Response: The staff added section 1968.2(d)(4.3.2)(G) to the denominator criteria to limit the number of times the denominator would be incremented for the following monitors: engine coolant system input components, air conditioning system input components, direct ozone reduction systems, particulate matter traps, other emission control or source devices, and comprehensive component input components that require extended monitoring evaluation. These specific diagnostics were identified by the staff as special cases where such relief is warranted and, accordingly, the language allows relief from the in-use performance ratios used for other monitors and instead allows separate in-use performance criteria to be developed on a case-by-case basis for each. As mentioned before, the staff will continue to monitor industry's progress in meeting the in-use ratios, especially as more data become available, and will revisit the requirements in two years to make any necessary adjustments. This change was incorporated in the First 15-Day Notice.

26. Comment: Section 1968.2(d)(5.5.2)(B) – The requirement for incrementing the ignition cycle counter is unclear with regards to how long the vehicle is required to meet the engine start definition. (Alliance/AIAM)

    Agency Response: The staff clarified this provision by adding a tolerance to the requirement. It now requires the engine start definition to be met for "two seconds plus or minus one second." This modification was incorporated into the regulation in the First 15-Day Notice.

COMMUNICATION PROTOCOL

27. Comment: The regulation should continue to specify SAE J1939 as a diagnostic and communication protocol for medium-duty vehicles. There has been tremendous investment in the implementation of SAE J1939 as a world-recognized protocol in medium-duty and heavy-duty vehicles during the past few years. Forcing manufacturers to use a protocol other than J1939 on these vehicles would result in more cost and more complex systems and would confuse service technicians, who have been using the J1939 protocol for years.

Additionally, J1939 is used not only for OBD purposes but also for non-diagnostic purposes as well. The current regulatory language, which may allow for usage of SAE J1939, depends on whatever protocol is adopted for the future heavy-duty OBD regulation, which has not been proposed yet. This does not provide assurance to manufacturers that J1939 will be the protocol adopted. (Alliance/AIAM)(EMA)(ITEC)(Cummins)(TMA)

Agency Response: The staff modified the language in section 1968.2(f)(7) to allow manufacturers to utilize SAE J1939 for 2004 and 2005 model year medium-duty vehicles. This modification was made in the First 15-Day Notice. Beginning with the 2006 model year, the use of an alternate protocol will be limited to whatever protocol is adopted for heavy-duty OBD (scheduled for Board consideration in 2003). The primary reason for allowing an alternate protocol for this class of vehicles is to accommodate manufacturers who produce both heavy-duty vehicles (which will be subject to the heavy-duty OBD requirements) and medium-duty vehicles (which are subject to these OBD II requirements). Considerable discussion has already begun regarding the appropriate protocol for heavy-duty vehicles. At this time, it is not clear if J1939 will indeed be the protocol selected, so the staff cannot provide the assurance requested by the commenters.

Additionally, the staff added a clause to section 1968.2(f)(7.1) to require the Executive Officer to extend the temporary allowance for SAE J1939 one model year at a time for each year that passes without the ARB adopting a heavy-duty OBD regulation (see Agency Response to Comment 124 in the "First 15-Day Comments" section below). This language was added in the Second 15-Day Notice.

28. Comment: Section 1968.2(f)(3.1) – Manufacturers want to extend the requirement for usage of SAE J1850 by one more year to include the 2008 model year. The current requirement would force manufacturers to hastily phase-out SAE J1850, which would expend resources and increase the risk of noncompliance. Additionally, extending the requirement by one year will have little effect on Inspection and Maintenance (I/M) programs, service facilities, and equipment and tool manufacturers, since they will still have to accommodate SAE J1850 for many years. Extension should also have little adverse effect on ARB's goal of one communication protocol, since most vehicles will have already implemented the new CAN protocol. (Alliance/AIAM)(DaimlerChrysler)

    Agency Response: The staff does not agree with the above comment and, thus, did not extend the requirement. Allowing J1850 to be used through the 2007 model year already provides manufacturers five years of leadtime to phase-out the protocol and replace it with the new required protocol. The staff believes this provides sufficient time to meet the new requirements. Further, concurrent with the phase-in of the new protocol are numerous improvements to the data provided to I/M stations and repair technicians to help fix vehicles in need of repair. Further extension of the J1850 protocol will unnecessarily delay access

to this additional data. The ARB staff, however, have discussed with manufacturers about possible solutions to this issue, such as giving 2008 model year vehicles using SAE J1850 a deficiency for communication protocol, so that these vehicles could still be certified.

29. Comment: Section 1968.2(f)(3.2) – Manufacturers should be able to use ISO 9141-2 through the 2007 model year, which would make it consistent with the usage of the other communication protocols. ( )

    Agency Response: The staff agreed with the above comment and modified the language as suggested in the First 15-Day Notice.

OTHER REGULATORY LANGUAGE COMMENTS

30. Comment: Section 1968.2(d)(2.3) – "Evaporative systems" should be added to the list of monitors exempt from extinguishing the MIL after three driving cycles during which the malfunction is no longer present, due to the specific diagnostic techniques associated with this monitor. (Alliance/AIAM)

31. Comment: Section 1968.2(d)(6.2) – Retention of all manufacturer test equipment for enforcement testing is too burdensome and costly, considering the vast amount of storage space needed to retain all the equipment. Instead, manufacturers should "make available," not "retain," equipment if requested by the ARB. (Alliance/AIAM)(EMA)

32. Comment: Section 1968.2(f)(4.2.2) – "Manifold air pressure" should be changed to "manifold absolute pressure". (Alliance/AIAM)

33. Comment: Section 1968.2(f)(2.3) – The maximum power requirement of 18.0 Volts should be changed to 20.0 Volts to be consistent with the relevant standard. (Alliance/AIAM)

34. Comment: Section 1968.2(g)(6.1) – Limiting confirmatory testing to vehicles in the "OBD II group" represented by the demonstration vehicle could potentially include a wide variety of vehicle configurations. Thus, the term "OBD II group" should refer instead to "vehicle configuration". (Alliance/AIAM)

35. Comment: Section 1968.2(i)(6.1) – The deadline for granting a deficiency should be extended from 120 days after normal production commences to 180 days (6 months) after normal production commences, since mandatory production vehicle testing may not be done until then. (Alliance/AIAM)

    Agency Response to Comments 30-35: The staff agreed with the above comments. All these changes were incorporated in the First 15-Day Notice.

36. Comment: Section 1968.2(e)(1.5) – The catalyst monitoring requirements for 2010 and subsequent diesel vehicles are unclear, specifically whether or not

these vehicles are required to do “presence detection” regardless of catalyst efficiency. There should be specific language detailing the monitoring requirements for 2010 and subsequent vehicles. (EMA)

Agency Response: The staff believes the requirements are clear and thus did not make any changes to the regulatory language. Sections 1968.2(e)(1.5.2)(C)(i) through (iii) identify the specific monitoring requirements for 2007 and subsequent vehicles, while sections 1968.2(e)(1.5.2)(C)(iv) and (v) provide limited relief from some of these monitoring requirements based on catalyst efficiency only for 2007 through 2009 model year vehicles. Thus, 2010 and subsequent vehicles would have to abide by sections 1968.2(e)(1.5.2)(C)(i) through (iii).

37. Comment: Section 1968.2(e)(3.5.3) - The misfire monitoring requirements for diesels require manufacturers to submit “defined monitoring conditions” for Executive Officer approval. We want to confirm that "defined monitoring conditions” include entry conditions. Additionally, the example described in clause (iii) of section 1968.2(e)(3.5.3) should be taken out of parentheses. (EMA)

    Agency Response: The staff confirms that “defined monitoring conditions” does include entry conditions. The staff, however, did not take the example in clause (iii) out of the parenthesis, since it is solely one example of how a monitoring strategy could meet the monitoring conditions criteria and it does not modify the requirements for the monitoring conditions that are defined outside of the parenthetical. Other strategies exist that would comply with the monitoring requirements but not with the example cited, such as monitors that require a single 15-second continuous idle to make a decision.

38. Comment: Section 1968.2(e)(6.2.4) – When referring to fuel system monitoring, what is the definition of “closed-loop” for a diesel engine? ( )

    Agency Response: This term is not specifically defined for diesel engines, nor does it need to be. Section 1968.2(e)(6.1.2) specifies that for diesel applications, manufacturers shall monitor “the performance of all electronic fuel system components to the extent feasible.” The section the comment specified ((e)(6.2.4)) indicates that the fuel system monitor shall detect malfunctions when the fuel control fails to enter closed-loop operation, but only if closed-loop operation is “employed.” While diesel emission control strategies are currently evolving very quickly, the only “closed-loop” fuel control related strategies that the staff is currently aware of are systems with closed loop control of fuel pressure in high pressure common rail type fuel systems. Manufacturers utilizing these systems are currently monitoring the individual conditions necessary (if any) to begin fuel rail pressure control to satisfy this requirement.

39. Comment: Section 1968.2(e)(7) – Some manufacturers have no circuitry in their powertrain control module to monitor for circuit continuity of the primary oxygen

sensors continuously. They are able to "indirectly" monitor for circuit faults with their other monitors (e.g., "lack of switching"), but only during closed loop conditions and at a smaller sampling rate than required for continuous monitoring. We understand that section 1968.2(e)(7.3.1)(C) will allow ARB to approve monitoring strategies with the limitations described above. (Alliance/AIAM)

Agency Response: Section 1968.2(e)(7.3.1)(C) will only allow manufacturers to disable continuous monitoring during conditions where "an oxygen sensor malfunction cannot be distinguished from other effects," provided the manufacturer submits data demonstrating, among other things, that the "disablement interval is limited only to that necessary for avoiding false detection." This section does not exempt manufacturers from continuous oxygen sensor monitoring altogether. Oxygen sensors are one of the most crucial components on a vehicle for proper emission control. Accordingly, comprehensive and thorough monitoring of these sensors is essential. An important element of this is continuous monitoring for obvious electrical circuit faults. Given that a few manufacturers may have to make hardware changes to accomplish this, such monitoring is not required until the 2006 model year to provide the affected manufacturers with sufficient leadtime to incorporate the necessary changes.

40. Comment: Section 1968.2(e)(7) – Monitoring for out-of-range low values of the primary and secondary oxygen sensors may be problematic, since a properly – working sensor may output the same value as a malfunctioning sensor in some cases. (Alliance/AIAM)

    Agency Response: Sections 1968.2(e)(7.3.1)(C) and (e)(7.3.2)(C) address this issue by allowing manufacturers to disable continuous monitoring during conditions where "an oxygen sensor malfunction cannot be distinguished from other effects." These sections were already present in the regulation made available with the 45-Day Notice.

41. Comment: The wording of the malfunction criteria for the exhaust gas recirculation (EGR) system (section 1968.2(e)(8.2.1)) and particulate matter (PM) trap (section 1968.2(e)(15.2.3)) monitors are not consistent with the other monitors, and should be worded like that of the catalyst monitor. Specifically, references to the OBD II system detecting a malfunction "prior to a decrease" or "an increase" should be deleted and refer instead to "when" such a condition occurs that causes emissions to exceed 1.5 times the applicable standards. (EMA)

    Agency Response: The staff has already harmonized the language as much as possible where it can be done. In other sections, however, the monitoring requirement language could not be revised to use the harmonized language without substantial rewriting of the entire section. To avoid increased confusion that could be caused by the major rewriting solely to accommodate the

harmonized language, the staff did not alter the language. Nonetheless, the monitoring requirements are clear in all sections and are essentially identical in that they require a fault to be detected when a malfunction occurs and tailpipe emissions reach the specified malfunction thresholds (e.g., 1.5 times the applicable standards).

42. Comment: Section 1968.2(e)(15) – Given that a particulate matter (PM) trap may require unique conditions for monitoring (e.g., regeneration cycle), the PM trap monitor may require more than two trips and a period longer than the FTP cycle to make a decision. We understand that section 1968.2(d)(3.1.1) has been referred to as the section that gives leniency in allowing for different monitoring requirements. (EMA)

    Agency Response: In addition to section 1968.2(d)(3.1.1), section 1968.2(d)(3.1.3) allows for manufacturers to define monitoring conditions that are not encountered on the FTP cycle.

43. Comment: Sections 1968.2(e)(16.2.1) and (f)(4.4.2) – More leadtime is needed to comply with the requirement to separately detect and store fault codes for rationality and circuit faults since this will require new software. Industry understands that the ARB will negotiate phase-in plans with manufacturers on a case-by-case basis (Alliance/AIAM)

    Agency Response: The staff agreed with allowing manufacturers more leadtime and thus modified the regulation to require separate detection and storage of fault codes, to the extent feasible, on all 2005 and subsequent model year vehicles (sections 1968.2(e)(16.2.1)(B) and (f)(4.4.2)). This language provides flexibility to allow the manufacturers to work out phase-in plans with the Executive Officer to incorporate the changes when feasible. These changes were incorporated in the First 15-Day Notice.

44. Comment: Section 1968.2(e)(16) - The malfunction indicator light (MIL) illumination criterion for comprehensive component faults should be increased from a minimum of 15 percent emission increase to 25 percent for all vehicles. This would improve the cost-effectiveness of repairs. (Alliance/AIAM)

    Agency Response: The staff agreed that the MIL illumination criterion should be increased to 25%, but only for passenger cars and light-duty trucks certified to the Super Ultra-Low Emission Vehicle II (SULEV II) standards, and thus modified the regulation accordingly. This modification was incorporated in the First 15-Day Notice. All other vehicles are still required to illuminate the MIL when a fault causes emissions to increase by 15% or more of the FTP standard. While the 25% criterion is adequate for SULEV II applications, which are certified to very low tailpipe emission standards, the staff believes keeping the percentage for all other applications at 15% is important in achieving the emission benefits of the Low Emission Vehicle II program. As a reminder, manufacturers are only required to design their OBD II systems to detect single component failures.

Manufacturers are not required to test for and detect various combinations of multiple component failures and deterioration. Accordingly, the staff believes the 15% criterion is appropriate for determining the impact of a single component. In the real world, multiple components will be in various stages of deterioration and an increase to 25% could result in partial deterioration of multiple components, creating significantly high tailpipe emissions without detection of any single component as malfunctioning.

45. Comment: Section 1968.2(e)(17) – There is no need to monitor the fuel-fired heaters on Zero Emission Vehicles (ZEVs) and Partial Zero Emission Vehicles (PZEVs). The ARB prohibits fuel-fired heaters on these vehicles from operating at ambient temperatures above 40 degrees Fahrenheit, which is almost always encountered in California. Additionally, most ZEVs will not otherwise need to incorporate a MIL on their instrument panel, so there is no need or cost justification to require this monitoring. We understand that ARB will consider exempting manufacturers from this monitoring requirement if all failure modes for the heater are designed to be "emissions-safe." (Alliance/AIAM)

    Agency Response: Section 1968.2(e)(17) for "other emission control or source system" monitors requires the manufacturer to submit a monitoring plan for Executive Officer approval. In situations such as those cited in the comment above, the staff believes a "fail-safe" design would be appropriate, and the existing requirements provide the Executive Officer with the flexibility to approve such plans.

46. Comment: Section 1968.2(e)(18.5.1) – The language for monitoring systems affected by low vehicle battery or system voltages should be changed to be consistent with the requirements in Mail Out #95-20, which allow exemption from battery/system voltage monitoring if a manufacturer can demonstrate that operation of a vehicle below the disablement criteria for an extended period of time is unlikely. ( )

    Agency Response: The staff agreed with the above comment and modified the language in section 1968.2(e)(18.5.1) to be consistent with Mail-Out #95-20. This modification was incorporated in the First 15-Day Notice.

47. Comment: Section 1968.2(f)(4.7.4) – More leadtime is needed to comply with the Calibration Verification Number (CVN) requirement, since the EPA workgroup has not developed a "standardized electronic format" yet. (Alliance/AIAM)

    Agency Response: The staff agreed and modified the language to require manufacturers to make CVN information available starting with the 2005 model year. This change was incorporated in the First 15-Day Notice.

48. Comment: Section 1968.2(f)(6) – The availability of OBD II information should not be limited to just the aftermarket service and repair industry (e.g., should include any person involved in manufacturing emission-related parts, etc.) to be

consistent with S.B. 1146 and the new service information access rule (section 1969). The word "nondiscrimatory" should be added to references to "fair and reasonable" prices to preserve fair competition between franchised dealers and others. Additionally, the phrase "fair, reasonable, and nondiscriminatory price" should be added in sections 1968.2(f)(6.4) and (f)(6.5) to prevent overpricing of information being made available. Finally, the waiver language specified in section 1968.2(f)(6.2) should specify the applicable model years to prevent any potential gaps in the model years covered by the requirements in section 1968.2 and the other service information regulations and should not include reference to any U.S. EPA rulemaking since it would not impose any requirement on manufacturers to provide access to information for California vehicles. (Aftermarket Group)

Agency Response: The ARB staff believes the current language of section 1968.2(f)(6) is adequate, and thus did not make any of the suggested changes. At this time, a separate ARB Service Information regulation (section 1969) has been approved and became operative on October 1, 2002. By the terms of section 1968.2(f)(6), the provisions of section 1969 supercede the information requirements of section 1968.2.

49. Comment: Section 1968.2(j) – There are conflicting interpretations of the terms "start of production" and "after production begins" by different manufacturers. This should be clarified. (Alliance/AIAM)

Agency Response: Staff changed all references of "production" in section 1968.2(j) to "normal production," which is now defined in section (c) as the time after the start of production when the manufacturer has produced two percent of the projected volume for the test group or calibration of concern. This modification was incorporated in the First 15-Day Notice.

50. Comment: Section 1968.2(j)(3) – Requiring manufacturers to collect thirty vehicles for verification of in-use monitoring performance will impose additional burden and high cost. This is especially a problem for small volume manufacturers. There should be revisions to allow approval of manufacturer plans for collecting and reporting by larger groups, to reduce the minimum sample size of "thirty" vehicles, and to exempt small volume manufacturers from this requirement altogether. (Alliance/AIAM)

Agency Response: The staff modified section 1968.2(j)(3.1) to allow manufacturers to combine multiple test groups when collecting data, provided that the proposed groupings include test groups that use the same/similar OBD II strategies and calibrations. The staff also reduced the minimum sample size from "thirty" to "fifteen" vehicles in section 1968.2(j)(3.3). Further, small volume manufacturers may request Executive Officer approval to reduce the minimum sample size of "fifteen" under section 1968.2(j)(3.5). These changes were incorporated in the First 15-Day Notice. Staff does not, however, believe that it is appropriate to exempt small volume manufacturers altogether from the

requirements. Even small volume manufacturers can do the collection of this data very inexpensively. The data provide invaluable and necessary information regarding the in-use performance of the OBD II system; information that should be obtained from all manufacturers, large and small.

SECTION 1968.5 COMMENTS

GENERAL

51. Comment: Section 1968.5 does not align with the existing emission recall regulations. OBD II-related recalls should be conducted under the existing emission recall regulations to avoid greater complexity, workload, and cost associated with two separate enforcement regulations. (EMA)

52. Comment: The procedural requirements that have been used in exhaust emission recalls have been discarded for no apparent reason for OBD II-related matters. ( )

Agency Response to Comments 51-52: The need for OBD II-specific enforcement procedures, which are not in perfect alignment with existing exhaust emission enforcement regulations, was extensively discussed in the Staff Report at pages 68-71 and 92-93.

53. Comment: The proposed regulation limits the evidence that can be presented by the manufacturer, requires pre-notification of any manufacturer-sponsored testing, strictly limits the manner in which the manufacturer obtains vehicles for testing, and requires ARB approval of other methods of demonstrating compliance. These changes exceed ARB's authority in that the proposed regulations attempt to override existing California statutes establishing attorney-client privilege, establishing the presumption of innocence, and barring the establishment of an irrebutable presumption that other manufacturer-provided data cannot be probative. (Alliance/AIAM)

54. Comment: Section 1968.5(a)(1) should be modified to confirm that nothing in section 1968.5 supercedes other current California laws. Specifically, the language should read "Nothing in these regulations is intended to interfere with or supercede the requirements of the Public Records Act, any provision of the Health and Safety Code or the privileges for work product or the attorney-client privilege existing under California Evidence Code or in administrative practice before the Board or the Office of Administrative Hearings." (Alliance/AIAM)

Agency Response to Comments 53-54: The commenters' concerns regarding their rights to produce evidence were addressed in the First 15-Day Notice. Specifically, section 1968.5(b)(7)(B) was modified to specifically provide that the Executive Officer would provide records consistent with the Public Records Act and section 1968.5(b)(7)(E) was added to state that none of the requirements of

section 1968.5(b)(7) shall be construed to abridge a manufacturer's right to assert any privilege or right provided under California law. Additionally section 1968.5(c)(7) was modified to reaffirm that in any challenge to a final Executive Officer remedial order, the Executive Officer shall have the initial burden of presenting evidence and that the controversy be decided upon the preponderance of the evidence.

The commenters' request for a general statement, as a preamble to the regulation, that provisions of section 1968.5 are not intended to supercede other California laws is unnecessary and inappropriate. First, under the law it is presumed and understood that the Board will perform its duties properly. (See Evidence Code section 664.) First and foremost of those duties is to uphold the laws of the nation and state. Second, the commenters' concerns were essentially focused on potential circumvention of its rights to present evidence and the burden of presenting evidence on a challenge to the Executive Officer's decision. As stated above, these concerns have been addressed. Finally to the extent that the commenters' request refers to administrative practice before the Board, the language is too broad and ambiguous. To the extent that administrative practice could be read to refer to the OBD-enforcement protocol itself, the broad reference to supersession is inappropriate in that the regulation was specifically intended to supersede the existing exhaust emission enforcement protocol at title 13, CCR, section 2110 et seq. as it applies to OBD II enforcement.

RECALL

55. Comment: The ARB lacks statutory authority to order recall under section 43105 of the Health and Safety Code (HSC) because OBD is neither an emission standard nor a test procedure. The ARB cannot bring the OBD II regulation within the scope of the definition of HSC section 39027, and even if the OBD II requirements were "emission standards," the HSC would not allow the Executive Officer to waive compliance with the OBD II requirements through issuing deficiencies. (Alliance/AIAM)

56. Comment: The Staff Report reasons that the OBD regulations should be defined as emission standards and subject to recall because they were so defined under federal law. The ARB is neither required nor permitted to interpret the language of the Health and Safety Code in a manner inconsistent with the plain language of that statute, simply because a federal agency has interpreted the same or similar terms elsewhere. (Alliance/AIAM)

57. Comment: The OBD II regulation should not be defined as an "emission standard." In fact, a letter from the ARB General Counsel prepared in support of the 1985 "OBD I" rulemaking (from David Nawi, dated April 9, 1985) stated that the Board's statutory authority to adopt and enforce the OBD regulations arose under the portion of the HSC that allowed the ARB to adopt and enforce rules that would "implement" emission standards. In short, he did not portray the OBD

regulations as “emission standards” themselves, which we believe in doing so would conflict with the plain language of HSC Section 39027. ( )

Agency Response to Comments 55-57: For the reasons set forth in the Staff Report, at pages 71-74 and 90-92, the ARB does not agree that it does not have authority to order recall for OBD II system failures. The ARB’s finding that the OBD II requirements of section 1968.2 include emission standards (they also include test procedures and certification requirements) is consistent with the provisions of Health and Safety Code section 43102. That section provides in relevant part that no new motor vehicle shall be certified by the Board unless it meets the emission standards adopted by the Board pursuant to Health and Safety Code section 43101. The commenters seem to contend that since the OBD II regulation includes provisions for the granting of limited deficiencies that the Board is acting contrary to the dictates of Health and Safety Code section 43102. Their concerns are misplaced in that the requirements of section 1968.2 must be read as a whole. The emission standards adopted therein, pursuant to the authority of Health and Safety Code section 43101, must be broadly read to subsume the deficiency provisions that are provided in the regulation. (See *International Harvester v. Ruckelshaus* (1973 D.C Cir.) 478 F.2d 615, 641 [“Consideration of fairness will support, comprehensive and firm, even drastic, regulations, provided a “safety valve” is also provided….”].) Thus, in the limited occasions that the ARB has certified vehicles with OBD II deficiencies, the ARB was effectively finding that the emission standards, as adopted, were met. And, in so acting, the ARB was not acting contrary to section 43102.

A close reading of the Staff Report (see footnote 33) clearly indicates that the ARB’s referenced emission standards as defined under the federal CAA and interpreted by the U.S. EPA have been offered for purposes of analogy and support. The definitions of “emission standard” in section 302(k) of the federal CAA and Health and Safety Code section 39027 are very similar, and how a court or another agency interprets the former definition is instructive. (See Moreno Valley Unified School Dist. v. Public Employment Relations Bd. (1983) 142 Cal.App.3d 191, 196 [to the extent the language and provisions of the National Labor Relations Act-and those of California's Agricultural Labor Relations Act-parallel those of the Educational Employment Relations Act, cases construing the former are persuasive in interpreting the latter.])

The commenters’ reference to ARB General Counsel David Nawi’s 1985 letter to the Ford Motor Company is misplaced. That letter was written in response to the ARB’s adoption of the first generation of OBD II regulations, which have been commonly referred to as OBD I. Mr. Nawi’s letter, which is part of the OBD I rulemaking record, accurately summarizes the ARB’s authority for adoption of the first generation systems. But the OBD II requirements are fundamentally different from OBD I systems in that they for the first time set forth emission-threshold requirements, which specifically limit the discharge of air contaminants into the atmosphere.

58. Comment: The Staff Report argues that the Board has recall authority under the general power granted in HSC section 39600, which states that the Board shall do such acts as may be necessary for the proper execution of the powers and duties granted it. We disagree with this because section 43105 provides specific language for the appropriate "corrective action" to perform. The general powers under HSC section 39600 do not apply because of specific grant of authority under section 43105. ( )

    Agency Response: The reference to the general powers of Health and Safety Code section 39600 was appropriately cited in the Staff Report in that it was proffered as an alternative – that is, even if it were determined that the OBD II requirements were not emission standards, the ARB has authority under section 39600 to adopt effective enforcement remedies, including recall. While the commenters are correct in stating that section 43105 provides for recall when a motor vehicle is not in compliance with adopted emission standards or test procedures, nowhere does the statute prohibit such a remedy for comparable violations. Section 39600 leaves this discretion to the Board.

59. Comment: The ARB did not meet the "necessity" or "cost-effectiveness" requirement when issuing mandatory recall regulations, as required by the Health and Safety Code. To require mandatory recall in cases where alternative actions are more appropriate is neither cost-effective nor necessary. The ARB has provided no rationale for why mandatory recall is needed as opposed to discretionary recall. (Alliance/AIAM)

60. Comment: The mandatory recall requirement is based on false assumptions that recalls would always be necessary and have significant emission benefits. (Alliance/AIAM)

    Agency Response to Comments 59-60: To the extent that the commenters are relying on Health and Safety Code sections 43013 and 43101 to support the proposition that the ARB must demonstrate that its proposed scope of remedies are cost-effective, they are mistaken. Section 43013(a), which requires the ARB to demonstrate that its proposed regulations are, among other things, necessary and cost-effective, applies to adoption of emission standards, in-use performance standards, and fuel specifications. Likewise section 43101, which requires a finding of necessity and consideration of the effect on the economy, also applies to adoption and implementation of emission standards. The ARB has completed such an analysis for the OBD II emission requirements set forth in section 1968.2. (See Staff Report at pp. 64-68 for discussion of cost impacts.) However, as explained in the Staff Report, a discussion of the cost-effectiveness of a remedial action at the time of proposing an enforcement regulation is neither required nor appropriate. (See Staff Report at pp. 95-96.)

    A manufacturer should be expected to comply with an adopted regulation (section 1968.2) and bear all costs to ensure compliance. A manufacturer that fails to comply with the regulation should bear the burden of coming into

compliance, without consideration of cost-effectiveness claims. To allow otherwise might encourage some manufacturers not to put their full efforts into compliance and would be unfair to those manufacturers who have expended their full resources to achieve compliance. This could have potential adverse consequences for the general welfare.

Pursuant to Government Code sections 11342.2 and 11346.2(b)(1), the Staff Report set forth the rationale behind the mandatory recall provision: to make certain that egregiously nonfunctioning OBD II systems that cannot reasonably detect malfunctions or perform valid I/M tests are repaired or replaced. (See Staff Report at p. 82.) With the exceptions to mandatory recall that were expressly added in the First 15-day Notice, and with the attested to prosecutorial discretion of the Executive Officer not to order mandatory recall if equally unwarranted conditions were found to exist, only the worst of the worst nonfunctioning systems would be subject to mandatory recall. In this regard, it should be noted that to date, no commenter has been able to identify any circumstances that would not fall within the express exceptions. Thus, the ARB believes that exercise of the Executive Officer's discretion would not be a regular occurrence. It is there as a backstop to assure fairness in case an unknown circumstance does arise in the future of comparable merit to the expressed exceptions that would necessitate action other than mandatory recall.

By trying to better delineate the parameters for what constitutes an egregiously performing system, the regulation provides manufacturers with better notice as to what they must do to avoid a mandatory remedial order. The staff has determined that the minimum thresholds to avoid mandatory recall, as modified by the provided exceptions, will better serve manufacturers who will know up front how to better apply their resources in designing, manufacturing, and quality auditing new systems.

61. Comment: Though the ARB has stated in the Staff Report that it is "not required to consider, at the time of adopting the regulation, the cost-effectiveness of a future remedial order that would bring into compliance a manufacturer who has elected to ignore the regulation and to produce an essentially nonfunctional OBD II system," the ARB is charged with improving California's air quality in a cost-effective manner. Sierra Research has cited several examples of OBD II system problems where the cost-effectiveness of the recall would be dependant on the failure rate of the specific emission control component that has an OBD problem. (Alliance/AIAM)

Agency Response: The ARB staff does not consider emissions impact, cost, or cost effectiveness of a recall action for the reasons already given in the Staff Report on pages 88, 93, and 95 and in the response to comments 59-60 above. Further, even if cost-effectiveness of a recall were to be considered, the examples cited by Sierra Research amplify the problem with trying to make an accurate calculation. In the four examples cited by Sierra Research, they conclude that the determination if a recall would be cost-effective for a faulty

monitor would be dependant on the underlying failure rate of the monitored emission component. In some cases, the failure rate would only need to be as little as 3%, in others it would have to be over 100% (e.g., some cars would need to experience the same failure more than once). As such, even slight under-estimations or over-estimations in the projections for how many failures will occur over the next 5-20 years of a vehicle's life could result in an inaccurate cost-effectiveness calculation and an incorrect decision as to whether recall is necessary or not.

62. Comment: Section 1968.5(c)(3)(A) should be modified to state that the Executive Officer "may," not "shall," order recalls. (Alliance/AIAM)

63. Comment: Remedial actions following findings of "nonconformance" should be dealt with on a case-by-case basis, not automatically lead to a recall. (EMA)(DaimlerChrysler)(Alliance/AIAM)

64. Comment: The ARB should allow itself the flexibility to fashion the appropriate remedy for each instance of non-compliance on a case-by-case basis, and should change "shall" in section 1968.5(c)(3)(A) to "may." This would be consistent with ARB's practice over the past three decades, where the Board has maintained a policy of allowing the Executive Officer to exercise discretion in determining whether recall is an appropriate remedy. Additionally, we do not believe that enforcement discretion is adequate protection from unreasonable recalls, because third-party lawsuits or citizen suits could challenge the ARB's ability to use the discretion. And in such cases, an administrative law judge would not be able to judge the appropriate use of such discretion. (Alliance/AIAM)

65. Comment: As a legal matter, is it really the right way to craft a regulation to say that there is a mandatory recall provision but that it may not be appropriate in all situations? We think that all relevant factors should be considered. (Alliance/AIAM)

Agency Response to Comments 62-65: See Agency Response to Comments 59-60. Remedial actions are considered on a case-by-case basis. Although the regulation describes recall decisions as either mandatory or permissive, each case nonetheless is considered on a case-by-case basis.

In an effort to address the commenters' concerns with section 1968.5(c)(3)(A), paragraph (B) was created establishing three exceptions to mandatory recall. These exceptions addressed three of the special circumstances where commenters believed mandatory recall would be unfair.

With the above amendments, the ARB decided not to modify the language of section 1968.5(c)(3)(A) to use "may" instead of "shall." As set forth in the response to Comments 59-60, the monitoring failures cited in paragraph (A) are quite different from the failures or circumstances referred to in section

1968.5(c)(3)(C). The Board determined that the failures of paragraph (A) are egregious, resulting in nonfunctioning monitors, and should be recalled, except in limited circumstances as enumerated in paragraph (B) or as otherwise determined by the Executive Officer pursuant to his or her prosecutorial discretion. (See *Heckler v. Chaney* (1979) 470 U.S. 821, 831, 105 S.Ct. 1649, 1655, cases cited therein, and *Sierra Club v. Whitman* (2001 9th Cir.) 268 F.3d 898.)

As the Court recognized in *Chaney*, the reasons that agencies have been entrusted with such discretion are many:

> [A]n agency decision not to enforce often involves a complicated balancing of a number of factors which are peculiarly within its expertise. Thus, the agency must not only assess whether a violation has occurred, but whether agency resources are best spent on this violation or another, whether the agency is likely to succeed if it acts, whether the particular enforcement action requested best fits the agency's overall policies, and, indeed, whether the agency has enough resources to undertake the action at all. (*Id.*)

The decision of the Executive Officer on whether to seek enforcement of an alleged violation is not subject to review by the administrative law judge. (See *Id.* and *Sierra Club v. Whitman* (2001 9th Cir.) 268 F.3d 898, ["traditional presumption that an agency's refusal to investigate or enforce within the agency's discretion."] (emphasis added). See also *Dix v. Superior Court of Humboldt County*, 53 Cal.3d 442, 451 ["prosecutor ordinarily has sole discretion to determine who to charge, what charges to file and pursue, and what punishment to seek….and the prosecutors own discretion is not subject to judicial control at the behest of persons other than the accused.) Prosecutorial discretion to enforce a provision is an executive function, with the executive administrator having the sole discretion to determine how best to utilize this function. (*Manduley v. Superior Court of San Diego County* (2002) 27 Cal.4th 537, 552; see also *Sierra Club,* 268 F.3d at 903*.)* The factors underlying the need for administrative discretion are "complex considerations necessary for effective administration." (*Manduley* at 27 Cal.4th 552.)

At the Board hearing, the Executive Officer and ARB General Counsel confirmed that the agency will exercise this discretion in determining the appropriateness of a recall remedy under sections 1968.5(c)(3)(A) and (B). In making this decision the Executive Officer will considering all relevant facts, the public policy underlying the provisions of paragraphs (A) and (B), and whether such a remedy is in the public interest. (See transcript of April 25, 2002 Board hearing at pp. 67, 94-95, and 104.).

66. Comment: To mandatorily require recalls when another remedial action may be more appropriate seems neither cost-effective nor necessary. (Alliance/AIAM)

Agency Response: In adopting provisions requiring mandatory recall, the Board made a policy determination that recall is the most appropriate remedy except under limited circumstances as set forth in section 1968.5(c)(3)(B) and discretionary enforcement determinations by the Executive Officer consistent with the regulatory provisions.

67. Comment: Mandatory recall should not be required when an OBD II system failure would be corrected through "self-campaigning." To require recall in such an instance would neither be necessary nor cost-effective. ( )

    Agency Response: An exception was added with the First 15-Day Notice to address this occurrence. The amended section 1968.5(c)(3)(B)(iii) excepts a noncomplying motor vehicle class from recall if "[t]he failure or deterioration of the monitored component or system that cannot be detected causes the vehicle to be undriveable...or causes an overt indication such that the driver is certain to respond and have the problem corrected…."

68. Comment: It would not be cost-effective to require recall if the ULEV II catalyst monitor failed to detect deterioration until emissions exceeded three times the standard if the only fix was to require the resizing of the catalyst. (Alliance/AIAM)

    Agency Response: With the leadtime and higher malfunction thresholds provided in section 1968.2 for meeting the catalyst monitoring requirements, this worst case scenario is not likely to occur. Manufacturers should be able to properly size the catalysts needed to meet the monitoring requirements and make needed adjustments early in the planning and design stages. In developing a catalyst monitor, a vehicle manufacturer would have to demonstrate that the catalyst monitor met the malfunction threshold of 1.75 times the standard during development, then generate OBD demonstration durability vehicle data showing indeed that a malfunctioning catalyst would be detected before this emission level. For such a scenario as described by the commenter to occur, the catalyst monitor would have to perform completely different in-use than it did during development and certification such that a failure would not be detected until it was twice as high in emissions. Further, it is even more unlikely that the change to correct such a problem would necessitate a resizing of the catalyst. Resizing of the catalyst is a step usually reserved for early stages of development and only when the resulting performance is very far away from the required performance. In the staff's opinion, it is highly unlikely that a design that met all of the requirements during development and certification could be so far away from the required performance level in-use that it would necessitate a resizing of the catalyst.

69. Comment: There are instances where mandatory recall may not be an appropriate remedy, such as when a monitor fails in some obscure situation that rarely happens in-use or when a requirement is narrowly missed. (Alliance/AIAM)

70. Comment: Recalls are not necessary in cases where there are overt indications of the problems. (Alliance/AIAM)

71. Comment: Other alternatives, such as a service campaign, would be more appropriate than mandatory recall in some cases, but that is not an option with the new enforcement regulation (section 1968.5). (Alliance/AIAM)(Toyota)

Agency Response to Comments 69-71: As to whether mandatory recall is appropriate for obscure monitoring failures or for monitoring failures that would not be able to detect emission-related failures that would cause overt driving problems, the ARB modified the mandatory recall provisions in the First 15-Day Notice to provide express exceptions to address these issues. (See section 1968.5(c)(3)(B)). Under the exceptions, mandatory recall would not be required under the following circumstances: (1) if the failure mode could not reasonably have been foreseen to occur by the manufacturer at the time of the system's design and manufacture; (2) if the system is equipped with redundant monitors that can detect the underlying emission-related malfunctions that were to be detected by the nonconforming monitor; or (3) if the emission-related problems that were to be detected by the failing monitor were of such a nature that the vehicle owner would immediately have them repaired. These exceptions were added in the First 15-Day Notice.

As stated in the response to Comments 59-60 above, mandatory recall will only occur for the most egregiously performing systems. The cut-points for mandatory recall are significantly above the point where a system would merely be considered out of compliance. Accordingly, an argument that "a requirement is narrowly missed" and mandatory recall should not be required is not persuasive. For these vehicles, the Agency has determined, with few exceptions, that recall is the most appropriate remedy. Nonetheless, having said this, the Executive Officer, under his or her inherent prosecutorial authority, will consider each case on its merits consistent with the purpose and intent of section 1968.5(b)(3)(A) and (B).

72. Comment: It is not appropriate to have mandatory recall for requirements that are technology-forcing. (Ford)

73. Comment: The OBD II regulation is technology-forcing. There is always a chance for errors in software, among other things. (Alliance/AIAM)

74. Comment: There are situations where manufacturers are trying in good faith to meet the requirements of the regulation. The many OBD II-related problems that have been observed in the past shows not the lack of good faith effort on the part of the manufacturer, but how hard it is for these manufacturers to meet the technically-challenging requirements of the OBD II regulation. (Alliance/AIAM)

Agency Response to Comments 72-74: The ARB has recognized from the initial development of the OBD II requirements in 1989 that they were technologically

challenging. With the adoption of the recall requirements of section 1968.5(c)(3)(A), it continues to be cognizant of the technology-forcing nature of the regulation, making the mandatory recall requirements applicable only to the most egregiously nonfunctioning systems. In response to manufacturer concerns about the new ratio-based in-use performance monitoring requirements and other new major monitor requirements such as NOx catalyst, cold start strategy, and VVT system monitoring, the thresholds for mandatory recall have been made less stringent for the first years that manufacturers are required to meet those new monitoring requirements. (See sections 1968.5(c)(3)(A)(i) and (ii)). With regard to the other criteria of section 1968.5(c)(3)(A), manufacturers have had as many as eight or more years of lead-time to meet the OBD II requirements that were initially adopted as part of section 1968.1. Additionally, the Board will conduct a biennial review of the regulation in 2004.

75. Comment: The ARB's position that cost-effectiveness is not considered in determining recalls since the manufacturer has "elected to ignore the regulation and produce an essentially nonfunctional OBD system" is misleading. There are unforeseeable situations that can occur and result in these flaws. Manufacturers can't make "perfect" OBD software, since software involves thousands of lines of codes, and thus there is always a chance for errors. (Alliance/AIAM)

76. Comment: For a typical OBD software set, we've got about 60,000 lines of code and a pop-up 10 possible errors per line of code, and about 15,000 calibration parameters, i.e., about 615,000 opportunities for error. If you assume that some of those potentials for error are not significant, you could round down to about half a million possible errors for each software set. And a large manufacturer has about 200 software sets each year. (Alliance/AIAM)

77. Comment: Any single bit error could result in mandatory recall. Diagnostic software is much more sensitive to these kinds of errors than emission control software by at least an order of magnitude. ( )

Agency Response to Comments 75-77: First, in response to the comment that there are unforeseeable situations that can occur and result in malfunctions, the ARB amended the regulation to except from recall those cases in which a manufacturer could not have reasonably foreseen that a malfunction would occur because of a specific failure or deterioration mode. Second, as recognized by the commenters, many of these data input errors will be detected under the newly adopted evaluation/verification requirements of section 1968.2(j). (See Hearing Transcript (tr.) at p. 80.). Third, again as recognized by the commenters, many of these software errors are trivial and do not require recall as a remedial action. (Tr. at pp. 93-95.) Further, a vehicle that meets the criteria for mandatory recall has a grossly performing OBD II system, regardless of whether it was caused by a single bit error or a combination of huge errors. However, the mandatory recall criteria are very limited in scope and are very specific and represent an extreme basic level of system performance. Even the simplest of verification checks and/or internal software sign-off test requirements should

identify system errors that result in such gross levels of performance prior to the start of production.

78. Comment: In most cases, the OBD system is not "nonfunctional", because if one monitor doesn't work, the other 149 do. (Alliance/AIAM)

79. Comment: Significant OBD system flaws do not necessarily represent either a nonfunctional system or a significant impact on in-use emissions. In many cases, the system will still be 99 percent or more functional and provide 99 percent of the benefit. ( )

80. Comment: Even if errors occur, manufacturers build vehicles with lots of margin in relation to the emission standards. So should an error occur, emissions may go up but will still be well below the standards. (Alliance/AIAM)

Agency Response to Comments 78-80: The commenters' characterization understates the purpose and intent of the OBD II requirements, which is "to detect emission-control system malfunctions as they occur by monitoring virtually every component and system that can cause increases in emissions" during in-use driving. (Staff Report at p. 1) OBD II systems are intended to achieve emission reductions from emission failures in individual vehicles and not pattern failures of a motor vehicle class as a whole. In adopting the regulations, the Board identified monitors of critical emission-related systems as major monitors. With a few exceptions, it is these monitors that are subject to recall under section 1968.5(c)(3)(A) when a significant monitoring failure has occurred. As stated in the response to Comments 59-60, in adopting the regulation, the Board effectively determined that a monitor that fails to meet the criteria thresholds of section 1968.5(c)(3)(A) is essentially non-functional and that failing to repair or replace such systems potentially undermines the benefits of the OBD II program. (See Staff Report at p. 82; see also testimony of Executive Officer Kenny, at tr. pp. 61-62.) The Board thereby distinguished these monitors from other monitors in the OBD II system and required that they be repaired under most circumstances, irrespective of the performance of other monitors.

To ensure that forecasted emission reductions are obtained from the OBD II program, it is essential that vehicles be equipped with functional OBD II systems that monitor all vehicles in-use. It is beyond dispute that the best intentions and efforts of manufacturers sometimes go awry for particular vehicles. This is especially true for vehicles that are just now having to meet the increasingly stringent Low Emissions Vehicle II emission standards, which require the use of new and sometimes more complex technology. Contrary to the emissions' forecast of the commenters, the fact is, it is just not known how the myriad of different emission-related parts and components installed on these new vehicles will perform 10, 20, and 30 years down the road. To guard against potential emissions from these vehicles as they age and are driven in-use, the Board has determined that OBD II systems are a necessary and important part of the

State's emission reduction program. The commenters do not dispute this. (See tr. at p. 92; Staff Report at p. 81.)

81. Comment: Many monitors would still be functional even though they meet the triggers of section 1968.5(c)(3)(A). For example, if you don't meet the ratio triggers for the in-use monitoring frequencies of subparagraph (i), the effect could be that it takes a few extra weeks to turn on the MIL. This does not mean that the monitor is not functional. Similarly, failing to meet the trigger of subparagraph (ii) could have a very small emissions impact for a LEV II or SULEV vehicle, i.e., the difference between 1.5 times the standard and 3.5 times the standard. The emissions' effect should not mean that the monitor is nonfunctional. Finally, a 0.020 inch monitor that can monitor a 0.035 inch or greater diameter leak should not be considered nonfunctional. (Alliance/AIAM)

Agency Response: See response to Comments 78-80. The ARB staff disagrees with this assessment. As stated in the response to Comments 59-60, the Board effectively determined that a monitor that fails to meet the criteria thresholds of section 1968.5(c)(3)(A) is essentially non-functional.

Regarding the case where the monitor takes a few extra weeks to illuminate the MIL, the staff reminds the commenters that the "two-week" requirement does not apply to detection of a malfunction on "all" vehicles within two weeks. As discussed in more detail in the response to Comments 12-13, the in-use performance ratio requirements were developed to target 90 percent of the vehicle population, so a small portion of the vehicle population will not detect faults within two weeks and may take several weeks or even months to detect faults. If the two-week requirement were to increase to three or four weeks, this small fraction of the fleet would grow and extend the time it takes to detect malfunctions. This can quickly grow to several months for some portion of the population. Given that OBD is supposed to continuously monitor for and alert vehicle owners to the presence of a emission-related malfunction as quickly as possible so that repairs are made in a timely manner, OBD II systems that perform at a level that can take several months of vehicle operation to detect a problem cannot effectively meet that requirement.

Regarding the emission impact for a LEV II or SULEV vehicle, for some monitors (e.g., exhaust gas recirculation system, secondary air system, variable valve timing system, etc.), complete failure of the system might result in emissions over 1.5 times the standard but not likely over 3.5 times the standard. In such a case, a manufacturer's OBD system for these monitors would never fall into the mandatory recall criteria even though the monitor is completely non-functional (i.e., fails to detect a total failure of the system). For other systems (e.g., misfire, fuel system, catalyst, etc.), it is impossible to accurately predict what effect the higher threshold will translate to with regard to in-use emissions. One manufacturer submitted data in the past that indicated that it took the equivalent of 400,000 miles of aging on the catalyst to reach 1.5 times the standard. Extrapolating the data to 3.5 times the standard would mean about 800,000 miles

of aging. If the manufacturer's data are valid, a vehicle with a catalyst monitor that could not detect a malfunction until emissions reached 3.5 times the standard would essentially have a non-functional monitor because very few vehicles would ever reach the equivalent of 800,000 miles of age (i.e., the point where a fault could then be detected).

The case is similar for the situation where the 0.020 inch evaporative system leak monitor detects a minimum leak size of 0.035 inch or greater. In previous rulemakings, the Board determined that there is a need to separately monitor for 0.020 inch and 0.040 inch leaks. Manufacturers usually develop the 0.040 inch leak monitor so that it detects leaks slightly less than 0.040 inch in diameter to ensure detection of 0.040 inch leaks. This, coupled with the fact that 0.040 inch leak monitors usually run more frequently than 0.020 inch leak monitors, means that a 0.035 inch leak would most likely be detected by the 0.040 inch leak monitor. This would render the 0.020 inch leak monitor, whose purpose is to detect leaks within the 0.020-0.040 inch range (or more likely the 0.018-0.036 inch range when the in-use compliance margin is factored in), useless. Therefore, a 0.020 inch leak monitor that cannot detect a 0.035 inch or smaller leak is essentially non-functional.

82. Comment: The ARB has no provision for manufacturers that already initiate corrective action. As a result, manufacturers may be very circumspect in implementing voluntary corrective action (no matter how praiseworthy) if the ARB orders a recall later anyway. (Alliance/AIAM)

    Agency Response: First, mandatory recall is expected to apply in a minority of circumstances. The vast majority of cases will fall under the other remedial provisions of section 1968.5(c). There is nothing in the regulation limiting the Executive Officer from entering into fair and reasonable settlements. Voluntary corrective action can assuredly be considered in framing such settlements. In determining appropriate remedial action under sections 1968.5(c)(4) and (c)(5), a manufacturer's efforts to correct or mitigate noncompliance are factors that will be considered.

83. Comment: Inappropriate recall action will increase the likelihood of litigation. (Alliance/AIAM)

    Agency Response: The ARB does not agree with this assessment. It is our hope that the need for remedial action and litigation will be reduced as manufacturers build better, more durable vehicles. The staff is not certain what the commenters would refer to as an "inappropriate recall," but would not so characterize a recall ordered pursuant to the adopted regulations.

84. Comment: There is concern over the term "reasonably" when referring to on-road testing and having vehicles driven so as to "reasonably encounter all monitoring conditions disclosed in the manufacturer's certification application." This term is too vague and will lead to testing that has no usefulness. There are no criteria in

the regulation to guide the Executive Officer (EO) in determining which monitoring conditions can be "reasonably" ignored as opposed to those that can be "unreasonable" to ignore, and no such criteria can be drafted. The language is inconsistent with the provisions that assign manufacturers the responsibility of determining monitoring conditions. This provision would allow the EO to ignore one or more conditions with the result that the EO would be, in effect, testing a different vehicle than the one certified. In such a case, no valid inferences can be drawn. Industry proposes that the term "reasonably" should be changed to "the extent possible (e.g., without regard to hidden flags)." ( )

Agency Response: The staff did not change the language as suggested. During meetings with the commenters during the rulemaking process, this issue was discussed at length and an agreement was reached that the existing wording was sufficient. Nonetheless, the commenters have seen fit to revisit the issue.

As pointed out during those meetings, the vehicle manufacturers had a concern that they would be placed in enforcement jeopardy due to a lack of effort on the ARB staff's part to actually operate the vehicle in a manner that would exercise the monitor. They are concerned that for some monitors that have fairly constrained operating conditions, the staff could deliberately or inadvertently avoid those operating conditions and come to a conclusion that the monitor did not work. However, as the staff pointed out, a separate test procedure (i.e., collection of in-use monitoring performance ratios) is used to evaluate the frequency of operation of monitors, which is where the ability to meet the operating conditions in-use is measured. In that test procedure, data are collected from real world drivers and the language regarding "reasonably encounter" is neither relevant nor is it used.

This language is, however, used in the test procedures to verify that the MIL illuminates at the appropriate tailpipe emission levels. In this test procedure, the staff will implant a malfunction and deliberately operate the vehicle in the monitoring conditions to exercise the monitor and measure emissions over an FTP cycle. From this procedure, the staff will determine if the monitor either properly detects the implanted malfunction or improperly runs and determines a malfunction is not present. A determination about the performance of the monitor cannot even be made unless the monitor is actually operated. In most cases, simply operating the vehicle on the FTP cycle will ensure that all of the monitoring conditions have been satisfied since most monitors are designed to run on the FTP. In a few limited cases, however, the monitor will not operate during the FTP and the staff will be required to operate the vehicle on an alternate dynamometer driving cycle or on the road to allow the monitor to run.

The phrase "reasonably encounter" was used to place a manageable burden on the ARB staff to ensure that all of the monitoring conditions that can be verified were indeed satisfied without creating a loophole that could prevent proper testing of the vehicle. Specifically, the adopted language allows the ARB staff to use its best efforts to enable the vehicle for purposes of testing. This is

necessary because, in some cases, manufacturers have included monitoring conditions that involve the use of internal on-board computer software flags or internally calculated values that cannot be accessed, recorded, or measured without the use of extremely expensive, manufacturer-specific engineering development tools (and in some cases, prototype on-board computers used in lieu of the production on-board computer), which the staff does not routinely have access to. In some cases, even the use of such equipment does not allow the collection of these parameters on an actual production vehicle. Thus, if the regulation were to require that each and every enable condition be satisfied, the staff could effectively be thwarted in its efforts to properly test these vehicles.

To allay manufacturers' concerns that the adopted language could be abused by the staff, the staff agreed that in implementing the requirements of this section, it would use tools routinely available to them (i.e., a generic scan tool) to verify (and, where appropriate, log or record data) that the monitoring conditions documented in the manufacturer's certification application have been met. With the use of a scan tool, the staff should be able to verify every monitoring condition and collect data at the beginning of, during, and/or at the end of the driving cycle. The data that are available through the scan tool include many pieces of information such as readiness codes, Mode $06 test results, and pending or confirmed fault codes that can also be used to directly verify that the monitor did indeed run on a particular drive cycle. This should allow the staff to verify nearly every enable condition, with the exception of those that have internal software flags or other inaccessible parameters such as internally calculated values, etc.

85. Comment: It has been understood that no mandatory recall will be considered for the first two years of a vehicle's implementation. (Alliance/AIAM)

Agency Response: This is incorrect. The regulation, however, does provide some specific relief to manufacturers. The staff modified section 1968.5(c)(3)A)(i) to indicate that remedial actions for in-use performance monitoring for 2004 through 2008 model year vehicles that are certified to the 0.100 ratio under section 1968.2(d)(3.2.1)(D) will be considered under the provisions of section 1968.5(c)(4) and not be subject to mandatory recall. This change was incorporated in the First 15-Day Notice. Additional relief was provided for the first two years of implementation of a new major monitor requirement. (See section 1968.5(c)(3)(A)(ii).) Finally, the amended regulation provides several exceptions to the mandatory recall requirements, and the Board delegated authority to the Executive Officer to consider appropriate relief consistent with the provisions of sections 1968.5(c)(3)(A) and (B).

86. Comment: Section 1968.5(c) contains terms that lack sufficient specificity to meet the test for clarity. These include "valid test results" in section 1968.5(c)(3)(A)(vi), "degree" of "interference," "disruption," and "hampering" of the work of service technicians in section 1968.5(c)(4)(B)(vi), and "faulty" components in section 1968.5(c)(4)(B)(xi). (Alliance/AIAM)

Agency Response: The ARB disagrees. The meaning of "valid test results" as used in section 1968.5(c)(3)(A)(vi) is clear. The phrase refers to a test that would be acceptable under the state I/M program. The test that would be used is specifically identified as the procedures being used by the I/M program at the time of vehicle certification. The ARB received no comments from the I/M service industry regarding the clarity of this section.

The language of section 1968.5(c)(4)(B)(vi) is equally clear. The cited section is one of 12 listed factors that the Executive Officer would consider in determining the appropriate remedial action for less than egregious monitoring system failures (i.e., those systems that are not subject to mandatory recall under section 1968.5(c)(3)(A)). The ARB included the factor recognizing that a primary purpose of OBD II systems is to ensure that service technicians receive necessary fault information from the OBD II system so that they can effectively and quickly service a detected emission-related malfunction. In determining whether remedial action is appropriate, the Executive Officer will consider whether the objectives of providing service technicians with fault information are being thwarted by the nonconforming OBD II system. The terms used to define the criterion are clear and provide notice to the affected stakeholders that the Executive Officer will be considering whether the affected OBD II system is properly performing this fundamental function.

The term "faulty" as used in section 1968.5(c)(4)(B)(xi) is consistent with other references in sections 1968.2 and 1968.5 that describe a failing, deteriorating, or malfunctioning OBD II system.

87. Comment: Section 1968.5(c)(4)(B)(xi) – Recalls should not be ordered based on incidences of "false passes." This, combined with the requirement that an OBD II system is to work for the "actual life" of the vehicle, would lead to numerous enforcement disputes concerning high-mileage vehicles, and would only provide little or no emissions control benefits. Additionally, there is no evidence that this change from the current requirement (in which a "false pass" occurrence is not by itself basis for a recall) is needed. The ARB indicated that this section was not intended to create any liability for "false passes" that does not *currently* exist under the performance standards in section 1968.1. It is not clear to us which subsections this refers to. ( )

Agency Response: False passes currently are and should be appropriate grounds for recall. One of twelve express factors that the Executive Officer will consider in his or her totality in making a determination for remedial action is the "estimated frequency that a monitor fails to detect a malfunction and illuminate the MIL when . . . a faulty or deteriorated monitored component is present (i.e., false passes)" (section 1968.5(c)(4)(B)(xi)). This provision carries over the convention of section 1968.5(i)(5) that expressly provided that the Executive Officer would consider "the presence of identifiable faulty or deteriorated

components . . . with no MIL illumination" when determining the appropriateness of recall.

Both the new regulatory requirements (section 1968.2) and the old regulatory requirements (section 1968.1) clearly define, for each monitor, the malfunction criteria (e.g., the performance level of a component that is unacceptable and must be detected by the monitor) and the MIL illumination and fault code storage protocol (e.g., the actions required to be taken when a malfunction is detected such as illumination of the MIL). A false pass occurs when the performance level of a component does not meet the acceptable level defined by the OBD II regulation (i.e., fails the malfunction criterion of the OBD II monitor), but the monitor fails to detect such a malfunction and improperly determines that the component is still performing at an acceptable level. In doing so, the system would fail to meet the requirements for MIL illumination and fault code storage. Examples of requirements that would not be met are:

Section 1968.1(b)(9.4), which states:

> "The diagnostic system shall store a fault code and the MIL shall illuminate no later than the end of the next driving cycle during which monitoring occurs provided the malfunction is again present."

And section 1968.1(i)(5), which provides:

> "A decision to recall the OBD system for recalibration or repair will depend on factors including, but not limited to, …presence of identifiable faulty or deteriorated components which affect emissions with no MIL illumination…"

In both cases, if a false pass occurred, the system would not satisfy the criteria to illuminate the MIL and store a fault code even though a malfunction is present and monitoring occurs. The language in the new regulation (see section 1968.2(d)(2.2) as well as subsections titled "Malfunction Criteria" and "MIL Illumination and Fault Code Storage" for each specific monitor in section 1968.2(e)) does nothing more than continue the requirements for proper MIL illumination and fault code storage when a malfunction is present and monitoring occurs. To allow the occurrence of excessive false passes would effectively defeat the very purpose of the above provisions. Thus, it is appropriate for the Executive Officer to consider this fact, among others, when considering recall.

To the extent that the commenters may have been referring to section 1968.1(i)(4) when stating that this was a change from the current requirement, in which a "false pass" occurrence is not by itself basis for a recall, this is a mistake on the part of the commenters. Section 1968.1(i)(5), noted above, is relevant to false passes, not (i)(4). Section 1968.1(i)(4), in part, reads:

> "Failure of a vehicle, or vehicles on average, to meet applicable emission standards with no illumination of the MIL shall not by itself be grounds for

> requiring the OBD system to be recalled …since the OBD system cannot predict precisely when vehicles exceed emission standards."

This language, as well as the language of sections 1968.1(i)(1) through (3), was included in 1989 to allay manufacturers' concerns that the ARB would automatically pursue recall if a vehicle failed the FTP exhaust emission standards (not the OBD emission thresholds such as 1.5 times the standards) without the MIL being illuminated. This was reported on page 32 of the Technical Support Document for the 1989 OBD II Staff Report (Mail Out #89-25):

> "…they [manufacturers] have also expressed considerable concern that the diagnostic system may be viewed as being able to determine when a vehicle would fail emission standards, which it cannot do."

The staff goes on to state that the language of section 1968.1(i)(4) was added to address the manufacturers' concerns:

> "It is also noted that failure of a vehicle or vehicles on average to meet applicable emission standards with no illumination of the MIL would not in itself be grounds for requiring the OBD system to be recalled for recalibration or repair. This is because [among other things] it is not possible to monitor all possible combinations of component deterioration to predict precisely when a vehicle would fail the FTP test."

Thus, it is abundantly clear that the provisions of section 1968.1(i)(4) refer to legitimate situations where a vehicle could fail to meet the FTP exhaust emission standards, not have the MIL illuminated, and still be in compliance with the OBD II requirements. This, however, is a very different situation from a false pass, which occurs not when a vehicle's emissions may be above FTP standards but when a component is performing at a level that is required to be detected as a malfunction and the monitor fails to detect it. It is equally clear, as explained above, that "false passes" were to be considered under the provisions of section 1968.5(i)(5).

Regarding the relationship between false passes and the term "actual life", changes were made early in the rulemaking process that the commenters may not have been aware of. The term "actual life" is used in only one place in the regulation and imposes a requirement on the vehicle manufacturer that the OBD II system be designed to operate for the actual life of the vehicle without any required maintenance and may not be programmed or designed to deactivate based on age and/or mileage of the vehicle. With this requirement, the extent of a manufacturer's liability beyond the useful life and into the actual life is limited. The limited liability for vehicles beyond their useful life is further evidenced by the fact that enforcement testing (which includes testing for false passes) is only conducted on vehicles during the full useful life of the vehicle (or in some cases only up to 75 percent of their full useful life). Thus, the

manufacturer's liability for false passes is constrained to the useful life and is not related to the liability extended to the actual life of the vehicle.

88. Comment: Section 1968.5(c)(4)(B)(xii) - Recalls should not be ordered based on errors in the certification documentation if the system is functioning properly. (Alliance/AIAM)

    Agency Response: The factor set forth in section 1968.5(c)(4)(B)(xii) is one of the 12 listed factors that the Executive Officer will consider for OBD II systems that do not fall under the mandatory recall provisions of section 1968.5(c)(3)(A). The Executive Officer will look at the totality of circumstances in making his or her determination and no one factor will be determinative. Moreover, the fact that the Executive Officer must consider criterion (xii) in the context of an identified nonconformance and that the failure to provide accurate and complete documentation must be considered material to the granting of the certification suggests that the Executive Officer will not order the recall of a motor vehicle class based on certification errors alone.

ENFORCEMENT TESTING PROVISIONS

89. Comment: Section 1968.5(b) – The section includes no requirement that the test sample group used to determine compliance be statistically representative, but only provides for the inclusion of a minimum number of vehicles. Without statistically representative samples, one cannot make sound factual inferences as to the motor vehicle class. Testing is highly dependent on the specific vehicle, driver, and driving patterns. The ARB should add references to representative vehicles in the requirements for test vehicle procurement. Specifically, the sentence "The test sample group shall be chosen to ensure to the extent possible that the data taken from the selected vehicles will permit an accurate inference of the performance of the motor vehicle class as a whole" should be added to section 1968.5(b)(3)(C). Additionally, the sentence "For any determination requiring statistical inference, the Executive Officer shall base his or her determination upon the data from the test sample available to the Executive Officer that is most likely to represent an equal-probability sample of all vehicles in the motor vehicle class" should be added to section 1968.5(b)(7)(G)(i). (Alliance/AIAM)

    Agency Response: To allay the commenters' concerns, the ARB modified the procurement and selection procedures to clarify their purpose and intent in the First and Second 15-Day Notices. The intent of the adopted regulation is that vehicles included in enforcement test sample groups be representative of vehicles driven in-use in California. It has been long-established and recognized by the members of the Alliance/AIAM that the process followed by the ARB in selecting vehicles for enforcement testing of exhaust emission standards properly insures that vehicles selected are representative of the motor vehicle class being tested. These procedures (procurement, criteria for vehicle selection) have been carried over to the OBD II test program.

The criteria for vehicle selection have been expressly designed for the type of enforcement testing to be conducted by the Executive Officer. The selection criteria for determining whether OBD II systems meet exhaust emission threshold levels closely parallel, but are in fact more stringent than, the criteria presently being used for exhaust emission enforcement testing. In addition to the criteria used in the exhaust emission enforcement testing program (see section 2137, title 13, CCR), the proposed selection criteria for OBD II testing excludes vehicles that exhibit conditions that would prevent the vehicle from complying with the OBD II monitoring requirements of section 1968.2. Like exhaust emission testing, testing predominantly will be done on dynamometers using the Federal Test Procedure. Vehicle manufacturers have for decades accepted the selection criteria of section 2137, and no evidence in the record suggests that the more stringent criteria for OBD II emission testing would, on their face, be unrepresentative.

Like the OBD II emission testing selection criteria, the criteria for selecting vehicles to be included in the test sample for ratio testing would exclude vehicles that have been modified and/or tampered with in a manner that would affect the ability of the OBD II system to comply with the OBD II monitoring requirements. Similarly, all vehicles that exceed their useful life certification mileage or age cannot be included test samples. Additionally, vehicles cannot be included unless they have collected sufficient operational data. The commenters have not questioned or otherwise challenged either the cut-points used by the ARB to determine sufficient vehicle operation data for inclusion in a test sample group or to determine sufficient operation of a monitor. Finally, in adopting the provisions for ratio performance, the ARB used manufacturer-recommended conditions for determining the frequency of vehicle operation (i.e., the denominator in the ratio that measures the frequency of a specific monitor). The conditions, which filter out a portion of the total vehicle trips, effectively exclude many trips where monitors would not be likely to run due to abnormal driver habits or atmospheric conditions such as very cold temperatures and high elevations. In addition to the requirement that each individual vehicle have sufficient collected data (roughly equating to a minimum of six months of operational data), a sample of 30 vehicles is used and the results are averaged to determine the performance of the motor vehicle class. Further, the thresholds established as the minimum average in-use performance ratios were statistically calculated to provide a 90 percent confidence that the actual motor vehicle class represented by the 30-vehicle sample is indeed performing at a level below the minimum required ratio. These measures, in conjunction with the use of proper procurement and selection of vehicles, provide assurance that vehicles included in the test sample are representative and that the results calculated from the sample are representative of the motor vehicle class.

The manufacturers have presented no evidence to demonstrate that vehicles selected for OBD II testing following the adopted procedures summarized above would not be representative. It has been accepted -- and at this point in time

beyond dispute -- that it is appropriate to limit procurement to a specified geographical area from the test site location, to solicit participation of vehicle owners using Department of Motor Vehicles (DMV) information, to randomly select vehicles from the responses to the solicitation, and to include only vehicles that meet the criteria for selection. As stated, in developing the adopted test vehicle procurement and selection criteria, the ARB has taken every effort to parallel the existing exhaust emission procedures to assure that vehicles are representative. As with the exhaust emission enforcement program, the ARB will not rely upon convenience samples in making preliminary or final findings of nonconformity. But rather, as stated, the Executive Officer will solicit vehicles in the exact same manner that is currently used by the ARB (and accepted by vehicle manufacturers) for tailpipe emission testing.

90. Comment: Recall test vehicles should be limited to less than 75 percent of useful life and screened for proper maintenance. (EMA)

91. Comment: Section 1968.5(b)(3)(D) – Test vehicles involved in enforcement OBD II ratio testing and "other" OBD II testing should also be within their useful life. Additionally, for enforcement OBD II emission testing, the test vehicles should be within 75 percent of their useful life to be consistent with current emission enforcement testing. (Alliance/AIAM)

    Agency Response to Comments 90-91: The staff modified section 1968.5(b)(3)(D)(i) for enforcement OBD II emission testing to limit test vehicles to those whose mileage is equal to or less than 75 percent of the certified useful life mileage. The age of the test vehicles is still required to be less than the certified full useful life age for OBD II emission testing. The staff also added language in sections 1968.5(b)(3)(D)(ii) and (iii) (for ratio testing and "other" testing) limiting test vehicles to those within their full useful mileage and age. These modifications were added in the First 15-Day Notice.

92. Comment: Section 1968.5(b)(3)(D) - The phrase "reasonably apparent evidence/indication" should be deleted from the rejection criteria pertaining to tampered or abused vehicles. Any vehicle that has been tampered or abused should be eliminated from enforcement testing in that their inclusion would result in a non-representative sample. This would also make it consistent with current emission test requirements. ( )

    Agency Response: The staff agreed and deleted this phrase from the above-referenced sections.

93. Comment: Regarding test vehicle selection for OBD II emission testing and "other" testing (sections 1968.5(b)(3)(D)(i)f. and (iii)c.), the provision that allows the ARB "at its discretion" to repair a vehicle with a detected or known malfunction before including it in the test program should be eliminated. Keeping this provision could lead to disputes from *ad hoc* decision-making by the enforcement staff involved in a specific test program. (Alliance/AIAM)

Agency Response: This discretion to the ARB is consistent with that currently used by the ARB for vehicle selection for exhaust emission standard compliance testing. The ARB has always maintained and, when appropriate, used that discretion to make unrelated repairs to a vehicle before subsequently including it in the vehicle sample. These repairs can and have varied from items such as battery replacement, changing tires, new brakes, repair of components that have recently illuminated the MIL, etc. The vehicle still must meet all of the other criteria for vehicle selection including, where applicable, that the vehicle has not been subjected to neglect or improper maintenance that would have a permanent effect on exhaust emission performance or would cause the system not to comply with the OBD II requirements. When exercising the discretion to repair a vehicle prior to including it in the vehicle sample, the ARB will have to also make the determination that the vehicle satisfies these other criteria.

94. Comment: Section 1968.5(b)(4)(A) - Regarding deteriorated/defective components in enforcement testing, industry has a problem with "foreseeable failure modes," specifically detecting failure modes that were not "foreseeable" at the time of design. The requirement to design diagnostic systems in order to detect unforeseen failure modes cannot meet the "feasibility" criterion of HSC or the "clarity" requirements of the Government Code. (Alliance/AIAM)

    Agency Response: The staff modified the language in section 1968.5(b)(4)(A) to limit the malfunctions implanted or simulated by the Executive Officer for enforcement testing to malfunctions representing failure modes that a manufacturer could have reasonably foreseen. This modification was incorporated in the First 15-Day Notice.

BURDEN OF PROOF AND INFERENCES

95. Comment: Industry understands that the regulations are not intended to limit or restrict the admissibility or weight of evidence in proceedings before the Board or the administrative law judge (ALJ). (Alliance/AIAM)

    Agency Response: In the First 15-Day Notice, the ARB modified the regulation to provide that the Executive Officer will not consider, except under limited circumstances, late information submitted by a manufacturer in response to a preliminary finding of nonconformance. (See section 1968.5(b)(7)(D) of the adopted regulation.) The section was further clarified in the Second 15-Day Notice. The intent of the provision was to ensure that the Executive Officer have all necessary and pertinent information before him or her at the time of making the final determination of nonconformance and ordering an appropriate remedy. Although the regulation does not expressly restrict or limit the admissibility or weight of evidence in proceedings before an administrative law judge or the Board, the ARB firmly believes that such arbiters should and will consider the lateness of the submission and the impacts of the delay on a fair hearing and the welfare of the state.

96. Comment: Sections 1968.5(c)(6)(C) and (c)(7) should be revised to make clear that the Executive Officer has the burden of proof, and that the ALJ shall hear all evidence and conduct a full and neutral investigation. The Executive Officer shall have the burden of producing all evidence and persuasion on all elements of the prima facie case (i.e., the ALJ shall determine de novo whether remedial action is necessary). The ALJ's decision shall be based on the preponderance of the evidence. (Alliance/AIAM)

    Agency Response: These concerns were addressed in the First 15-Day Notice. Commenters did not submit any follow-up comments in response to the modifications. Under the regulations, the Executive Officer has the burden of going forward on all parts of the Executive Officer's decision specifically challenged and showing that the challenged issues are supported by fact and applicable law. (See section 1968.5(c)(7) and title 17, CCR, section 60055.32(d).)

97. Comment: Any presumptions or inferences applicable to the Executive Officer shall not be applicable to or binding on the administrative law judge. Any provisions that require or limit the discretion of the Executive Officer (i.e., mandatory recall) shall not apply to or be binding on the ALJ. (Alliance/AIAM)

    Agency Response: The initial drafts of the regulation contained several expressed presumptions, and the commenters seemingly have inferred several others. To the best of the ARB's knowledge, the express presumptions have been deleted from the adopted regulation. One notable statutory presumption continues to be applicable to the regulation, namely the presumption that public employees perform their duties regularly and properly. (Evidence Code section 664). Specifically, as it applies to this regulation, a presumption exists that the ARB has followed the procurement, selection, and testing protocol set forth in the regulation. The presumption is rebuttable before a reviewing tribunal; and, upon presentation of evidence from the manufacturer rebutting the presumption, the trier of fact shall base his or her determination on the preponderance of the evidence. (See Evidence Code section 604.)

    In reviewing discretionary decisions of the Executive Officer, the reviewing administrative law judge will hear, review, and weigh the evidence and make a determination based upon the preponderance of the evidence. (Title 17, CCR, section 60055.32.) On those decisions in which the Executive Officer is directed to act upon making specified findings (section 1968.5(c)(3)(A)), the administrative law judge will hear, review, and weigh evidence regarding the underlying evidence of the nonconformity finding and uphold the Executive Officer's decision if a preponderance of the evidence supports it. If evidence supports the finding of nonconformity, the administrative law judge would be required to confirm the remedial order (i.e., recall).

The decision of the Executive Officer on whether to seek enforcement of an alleged violation is not subject to review by the administrative law judge. (See response to Comments 62-65; see also *Heckler v. Chaney* (1979) 470 U.S. 821, 831, 105 S.Ct. 1649, 1655, cases cited therein, and *Sierra Club v. Whitman* (2001 9th Cir.) 268 F.3d 898, ["traditional presumption that an agency's refusal to investigate or enforce within the agency's discretion."] (emphasis added).) Prosecutorial discretion to enforce a provision is an executive function, with the executive administrator having the sole discretion to determine how best to utilize this function. (*Manduley v. Superior Court of San Diego County* (2002) 27 Cal.4th 537, 552; see also *Sierra Club,* 268 F.3d at 903*.)* The factors underlying the need for administrative discretion are "complex considerations necessary for effective administration." (*Manduley* at 27 Cal.4th 552*.)* As the Court stated in *Chaney*:

> [A]n agency decision not to enforce often involves a complicated balancing of a number of factors which are peculiarly within its expertise. Thus, the agency must not only assess whether a violation has occurred, but whether agency resources are best spent on this violation or another, whether the agency is likely to succeed if it acts, whether the particular enforcement action requested best fits the agency's overall policies, and, indeed, whether the agency has enough resources to undertake the action at all. An agency generally cannot act against each technical violation of the statute it is charged with enforcing. The agency is far better equipped than the courts to deal with the many variables involved in the proper ordering of its priorities. *(Chaney* at 470 U.S. 831-832.)

The principles of prosecutorial discretion apply exclusively with the Executive Officer, who must decide using factors – such as those listed above -- whether it is in the best interests of the agency to enforce the recall provisions of section 1968.5(c)(3) or not. The discretion afforded to the administrative law judge in reviewing a challenge of a decision of the Executive Officer is more limited. The tribunal is required to apply the criteria for recall set forth in paragraph (A) consistent with the exceptions to recall set forth in paragraph (B).

98. Comment: No evidence initially prepared as work product shall be excluded solely on the ground that it was work product. No evidence shall be excluded solely based on the grounds that it was not presented to the EO prior to his or her determination of nonconformity. ( )

Agency Response: In the First 15-Day Comments, the Board expressly modified the regulation to address this concern. The amended regulation provides that nothing shall be construed to abridge the manufacturer's right to assert any privilege or right provided under California law.

MANUFACTURER RESPONSE TO NONCONFORMANCE DETERMINATIONS

99. Comment: Section 1968.5(b)(7) – The 90-day time limit from the date of issuance of the nonconformance notice required for manufacturers to provide information contesting the nonconformance finding is too short. This is not enough time for manufacturers to do the necessary testing and analysis of the ARB's test data. This time period should be increased and should start from the time the ARB releases all its data and information related to the finding of nonconformity. (Alliance/AIAM)

Agency Response: The regulation states that the Executive Officer shall provide a manufacturer with "no less than 90 days" to respond to a preliminary notice of nonconformity. (Emphasis added.) The regulation further provides that, if necessary, a manufacturer may request additional time to file its response. The ARB staff's experience in the enforcement of noncompliance under the exhaust emission program is that in most instances, 90 days is more than sufficient time in which to respond.

100. Comment: The information release requirements are not intended to limit the application of the California Public Records Act (CPRA). Our understanding is that the investigative exception of the CPRA does not apply. (Alliance/AIAM)

Agency Response: See response to Comments 53-54. Indeed, other modifications in the First 15-Day Notice expressly state that the Executive Officer shall respond to all document requests under section 1968.5(b)(7)(B) consistent with the California Public Records Act (CPRA). For purposes of enforcement under section 1968.5, the ARB will not shield records from disclosure under the investigative exception to the CPRA.

101. Comment: The ARB did not specify a time limit in the regulation for the ARB to release all records related to the finding of nonconformity. (Alliance/AIAM)

Agency Response: The regulation, as adopted, does not specifically provide for staff to turnover all records related to the preliminary finding within a specified time period. Rather, as amended in the First 15-Day Notice, the regulation was modified to provide that the Executive Officer will provide in his or her notice of preliminary finding the factual basis for the determination, including a summary of the test results relied upon for the determination. The notice will further provide a statement to the manufacturer that the Executive Officer will provide to the manufacturer, upon request, all records material to the determination and that this would be done consistent with requirements of the CPRA. The staff determined that this approach would fairly balance the needs of the manufacturer with the needs of the staff to not expend unnecessary resources in this time of budgetary shortfalls. A requirement to collect and ship to the manufacturer all documents related to the determination is overly broad and could result in the staff having to provide documents and data only tangentially related to the nonconformance decision. Collecting such information, without any guidance from the manufacturer as to exactly what they want, is extremely resource intense. The experience of the staff has been that manufacturers often have

many of the materials that may be related to the determination and only want to see specific information. By providing manufacturers with a summary of the test results relied upon and by following the CPRA timeframes and requirements, manufacturers should be able to solicit the information they need or want to review in a timely manner. By providing manufacturers with at least 90 days to respond to the Executive Officer's notice, they should have more than sufficient time to obtain and review pertinent documents and conduct their own testing and analysis. If for some reason the provided time is insufficient, they may seek such additional time that is reasonable.

102. Comment: Section 1968.5(b)(7)(C), which requires a manufacturer to provide notice to the ARB of its plans to conduct testing and allows EO review and approval of the manufacturer's test procedure beforehand, should be changed to prohibit this, since it impinges on the manufacturer's rights under the attorney-client privilege. (Alliance/AIAM)

Agency Response: The staff agreed and modified section 1968.5(b)(7)(C) in the First 15-Day Notice.

CONSIDERING EMISSIONS IN REMEDIAL DETERMINATIONS

103. Comment: Emissions should be considered since, according to the Staff Report, the purpose of the OBD II system is to identify vehicles that have experienced "significant" increases in emissions. For a regulation to be adopted, the ARB must show that the "significant" increase in emissions must be substantial enough to be an air quality problem. (Alliance/AIAM)

Agency Response: The commenters' interpretation of the purpose of the OBD II system is an incorrect reading of the Staff Report. The Staff Report states that "OBD II systems are designed … to detect malfunctions as they occur by monitoring virtually every component and system that can cause emissions to increase significantly." This does not state that OBD II systems only identify vehicles that "have" significant increases in emissions. Depending on the emission system or component being monitored, an emission increase does not have to occur for the MIL to illuminate. For example, OBD II systems may illuminate the MIL to identify malfunctions that affect the execution and/or efficiency of other OBD II monitors, so that should an emission-related component fail in the future, this will be detected.

104. Comment: The ARB has not provided any data or analysis supporting its position that OBD II requirements are different and more important than compliance with evaporative and exhaust emission standards and the actual emission levels of the vehicle. ( )

105. Comment: The ARB should consider emissions when making recall determinations. (Alliance/AIAM-hearing)(Toyota)

106. Comment: There should be a statement in the regulation indicating emissions should be considered in recall determinations and all references to disregarding emissions should be deleted. (Alliance/AIAM)

107. Comment: If it can be shown that vehicles are very durable and proven that emissions impacts are negligible, there is no benefit to performing a recall. Sierra Research's analysis shows that for most of the possible OBD II recalls, few vehicles will experience defects in their emission control systems, so there would be no exceedances of the emissions standards. Recalls are burdensome for both manufacturers and vehicle owners. (Alliance/AIAM)

108. Comment: The commenter does not agree with staff's dire prediction that a rule that requires finding of emissions impact would undermine the effectiveness of the OBD program itself and Smog Check. (Alliance/AIAM)

109. Comment: One reason the ARB has given for disregarding emissions is that it would be impossible to predict when and to what extent emissions control system malfunctions will occur in the future. This appears to ignore the practice under existing exhaust and evaporative emissions regulations that allows the Executive Officer to consider and, if appropriate, accept demonstrations by a manufacturer regarding future emissions levels from a recall class (see title 13, CCR section 2147). The projection of future emissions levels should be no more difficult than under this section 2147. ( )

110. Comment: Concerning the definition of "nonconforming OBD II system," the sentence "For purposes of section 1968.5, a motor vehicle shall be considered nonconforming irrespective of whether vehicles in the motor vehicle class, on average, meet applicable tailpipe or evaporative emission standards" should be removed. While disregarding emissions would be suitable for some types of nonconformities (e.g., standardization requirement-related), a rule that eliminates the current emissions-related defenses to the need for a recall would not comply with the policies of the Board or the requirements of the Government Code or the HSC. (Alliance/AIAM)

Agency Response to Comments 104-110: As explained in the Staff Report and at the Board hearing, the OBD II emission standards and requirements serve very different purposes than the exhaust and evaporative emission standards, and compliance with the latter should not excuse noncompliance with the former. (Staff Report at pp. 70-71 and 92-93.) The OBD II program is to provide individual owners with notice when his or her vehicle's emission control system fails. The program is to guard against individual high emitting vehicles that could potentially go undiscovered for years of in-use driving. The Board determined in 1989 and repeatedly since then that viable OBD II systems must be installed on vehicles that are sold and driven in California. (See 1991 Staff Report at pp. 3-4.)

The program is not intended to flag pattern emission-related problems. That is the purpose of the exhaust/evaporative in-use enforcement program. The intent of the OBD II program is to build on top of that program to ensure that individual vehicles driven in-use achieve the increasingly lower emission reductions to which they have been certified. The OBD II program, which has become a part of the State I/M Program, is necessary to guard against high emissions from individual vehicles. To rely upon projected vehicle fleet emissions to overcome an OBD II failure is like comparing apples to oranges and clearly misses the mark. First, as stated repeatedly, such projections of vehicles 15, 20, or even more years into the future is speculative and cannot be done with any accuracy. (See Staff Report, at pp. 80, 94-95.) Second, even if it could be done – which even the commenters acknowledge is difficult – it does not specifically address the problem of the high-emitting vehicle, the very purpose of the OBD II program. (*Id.)* Taking the commenters' position one step further, should a manufacturer who presents a demonstration that its vehicles do not, on average, fail the certified exhaust and evaporative standards be excused from the State's I/M program? The clear answer is no; both federal and state laws recognize the essential need for in-use testing programs given the undisputed fact that emission-related parts do deteriorate and fail in-use over time. For the same reasons, the ARB has taken a reasonable position in not excusing manufacturers from having to repair and replace OBD II systems that have been found to be fundamentally flawed, regardless of in-use fleet exhaust and evaporative emission test results.

111. Comment: The ARB previously considered emissions in its previous OBD II regulation (section 1968.1(i)(5)). Based on prior administrative practice and interpretation, the ARB cannot require recall when there is no exceedance of an applicable emission standard. As early as the first rulemaking to establish recall, the ARB stated no interest in recalling vehicles that do not have a significant emissions impact. In the 1988-89 rulemaking, the ARB created a rebuttable presumption regarding failed emission components. A long continued administrative position with no ill results cannot be readily cast aside (*Colonial Mut. Compensation Ins. Co. v. Mitchell*, 140 Cal. App. 651, 657 (1934)). An agency changing its course must supply a reasoned analysis indicating that prior policies and standards are being deliberately changed, not casually ignored. (Alliance/AIAM)

Agency Response: As explained in the Staff Report, the ARB has not in the past considered compliance with other emission standards as a primary factor in determining compliance with the OBD II requirements and proposed remedies. (See Staff Report at p. 95.) The commenters' continued insistence on this point is mistaken. The commenters' contention that the ARB is deviating from past administrative practice in not considering fleet exhaust and evaporative emissions in ordering OBD II remedial action is similarly mistaken. As explained in the response to Comments 104-110, the purpose and intent of the OBD II requirements are distinct from the exhaust and evaporative emission programs. Accordingly, the past history cited by the commenters, which is in regard to the

latter enforcement program, is not on point. The need for an OBD II-specific program that is not tied to in-use fleet average emissions has been clearly presented. (See Staff Report at pp. 69-71 and 92-95.)

112. Comment: The ARB's interpretation that the federal Clean Air Act required the elimination of emissions impact in recall determinations is different from that of the U.S. EPA. The U.S. EPA recognized that recall is intended for high-emission vehicles only, not those "rare problems" detected by the OBD II system. (Alliance/AIAM)

Agency Response: The ARB is not required under the Clean Air Act to have an identical motor vehicle program as the U.S. EPA. Indeed, section 209(b) provides that California is not subject to the federal preemption of section 209(a) and may be allowed to adopt its own emissions standards and enforcement regulations. One of the requirements that must be shown for granting California a waiver to the federal preemption is that its regulations must be at least as stringent as federal regulations. In 1995, U.S. EPA granted California a waiver for its OBD II program. Under established waiver law, the U.S. EPA must grant a waiver for a California enforcement procedure that accompanies an emission standard, for which a waiver has been previously granted, if the enforcement procedure does not cause the previously waived standard, in the aggregate, to be less protective of public health and welfare than applicable federal standards under section 202(a) of the CAA or if the Federal and California certification and test procedures are inconsistent. (See *Motor and Equipment Manfuacturers Association v. EPA* (1979 D.C. Cir) 627 F.2d 1095, 1112.) The OBD II enforcement regulation does not undermine the Board's earlier findings (see Resolutions accompanying the 1989, 1991, 1993, 1994, and 1996 rulemakings) that the adopted OBD II standards are at least as protective as federal regulations. The fact that the ARB enforcement regulations are more stringent than federal enforcement procedures, if anything, reconfirms the finding that the ARB regulations, taken as a whole, are more stringent.

113. Comment: ARB had commented that emissions impact should not be considered when considering recalls because it is too difficult to predict (i.e., project defect rates and emissions from malfunctioning vehicles for the life of the vehicle). We believe the ARB can predict emission impacts with its own emission inventory models. Additionally, it was shown in the Toyota case that there exist ARB test programs and an ARB emissions inventory model that can be used to project these. ( )

Agency Response: The ARB does not agree. First, the ARB's emission inventory model was designed to determine the aggregate emissions from the entire vehicle fleet in California. It does not contain the level of specificity or segregation necessary to assess the emission impact of a nonconforming OBD II system on a specific motor vehicle class (e.g., a specific make/model/model year vehicle). As such, it is inappropriate to attempt to use the inventory model to predict the emission impacts for a specific OBD II problem. As a simple

example, the inventory model assigns a single emission rate to vehicles that have any evaporative system vapor leak. On a particular vehicle, however, the emission rate can vary greatly due to the size of the leak, the location of the leak, and the configuration of the evaporative system. An OBD II nonconformance may be specific to a range of leak sizes and potentially even a range of locations and most definitely will depend on the design of the particular vehicle's evaporative emission control system. Attempts to use the inventory model to predict emission consequences from such an OBD II nonconformance would clearly be inaccurate.

Regarding the ability to predict failure rates in assessing the emission impact, the inventory model is again inappropriate. The model primarily relies on failure rates observed on older cars in the field and assumptions regarding those failure rates on future model year cars. In the large scale of the entire fleet and the aggregate emissions from that fleet, such an assumption is appropriate and valid. In the context of predicting a specific failure rate for a specific component (or even a specific failure mode of a component) on a motor vehicle class, the inventory model is inadequate. Further, when it comes to predicting the failure rate for a specific component on a specific vehicle, speculation must play a much larger role because assumptions based on past experience or other types of failures on different vehicles are often invalid. Despite manufacturer's past experience and constant quality improvements, high warranty rates for various emission control components still occur today across all manufacturers. No one can accurately predict which vehicles will experience a failure of a specific component nor can they eliminate every possibility for such failures to occur in the field.

Lastly, as mentioned previously, the primary purpose of OBD II is not to identify pattern failures where a specific vehicle model has a very high failure rate of an individual component. Other compliance programs exist to catch such design defects including warranty reporting, defect reporting, and in-use exhaust testing. OBD II is intended to catch each emission component failure that occurs in a vehicle, even if no one component has a pattern failure across a high percentage of the vehicles. Attempting to assess the emission impact of a specific portion of the OBD II system being non-functional becomes an extremely difficult and speculative task and, in the end, irrelevant in the determination of whether the system meets the OBD II requirements or not.

ALTERNATIVES TO RECALLS

114. Comment: In regards to mandatory recall, a concern was expressed about the compatibility of I/M with the various OBD II systems if there was a nonconformity. We believe that this is an issue that should be addressed when making the determination as to the appropriate remedial action. However, under the present system, deficiencies have been granted in the past to manufacturers and the I/M system works fine. So we don't understand how this concern really affects the need for having mandatory recall. (Alliance/AIAM)

Agency Response: If the above comment is in reference to comments made by the staff during the hearing, the agency response is as follows. During the hearing, the staff stated that one of the rationales supporting the need for mandatory recall is to avoid disparities or confusion in I/M due to one manufacturer's system properly monitoring for a component and another manufacturer's system having a nonconformity (e.g., not properly monitoring the same component).

The staff believes that this is an appropriate rationale in supporting the need for mandatory recall. The staff agrees with the commenters that the impact on I/M is a factor to be considered in determining the appropriate remedial action and lists it as such in sections 1968.5(c)(3)(A)(vi) and (c)(4)(B)(vi) for both mandatory recalls and other ordered remedial actions. The staff further believes, contrary to the commenters, that the granting of deficiencies may indeed cause some problems in I/M, especially in the case where the OBD system performs at a level that meets the criteria for mandatory recall. As such, the staff added language to section 1968.2(i) clarifying that deficiencies would not be granted to failures that fall under the mandatory recall provisions of section 1968.5(c)(3)(A). For failures that do not fall under the mandatory recall provisions, the staff will continue the current policy of considering the impact of the failure on the I/M program both when granting deficiencies (at the time of certification or, in the case of retroactive deficiencies under section 1968.2(i)(6), within six months after start of production) and when determining the appropriate remedial action (in the case of a finding of nonconformity from enforcement testing). This practice should continue to minimize the impact a nonconformity may cause on the I/M program.

OTHER ENFORCEMENT ISSUES

115. Comment: The definition of "motor vehicle class" is too broad. Language should be added to make it clear that the Executive Officer has the burden of proof to justify a class beyond a single model year or model (i.e., justify expanding a non-conformance determination to other like vehicles). (Alliance/AIAM)

Agency Response: To address concerns raised by the commenters early in the regulatory development process, the provisions for determining motor vehicle class were modified to provide that the OBD II test group be the default class but that the Executive Officer may determine an alternative, either larger or smaller, to be appropriate. The commenters' proposal expressed above is unnecessary. As set forth in the response to Comment 96 above, the ARB added language in the First 15-Day Notice to expressly state that the ARB has the burden of going forward at any hearing challenging a final remedial action order issued by the Executive Officer.

116. Comment: The definition of "nonconforming" is too broad. This should be limited to specific in-use testing program failure criteria of section 1968.5(b)(6). (EMA)

Agency Response: The Executive Officer will base his or her findings of nonconformance on the criteria set forth in section 1968.5(b)(6). The definition of "nonconforming OBD II system" in section 1968.5(a)(3)(G) should be read in the context of the more specific language of section 1968.5(b)(6), which establishes the parameters for determining a nonconformity with the requirements of section 1968.2.

117. Comment: Sections 1968.5(c)(4) and (c)(5) – The regulation should clarify that any reference to "certification disclosure" is limited only to what is required under section 1968.2(h). (Alliance/AIAM)

Agency Response: The staff has added reference to section 1968.2(h), which deals with certification documentation, to section 1968.5(c)(4)(B)(xii) in the First 15-Day Notice. Section 1968.5(c)(5)(I), which deals with certification documentation for monetary penalties assessment, already references section 1968.2(h) in the 45-Day Notice.

118. Comment: Section 1968.5(c)(5) – When assessing monetary penalties, the condition regarding manufacturer's cooperation during the course of an investigation should be deleted, since this would violate the Due Process Clause. Additionally, there should be a statement in the regulation that penalties will not be assessed in cases where recalls are performed in the absence of "bad faith" on the part of the manufacturer. (Alliance/AIAM)

Agency Response: The staff deleted the condition regarding manufacturer's cooperation as suggested in the First 15-Day Notice.

119. Comment: Section 1968.5(e) should reference section 43016 of the HSC to clarify which penalty provision is being referenced. (Alliance/AIAM)

Agency Response: The staff added this reference in the First 15-Day Notice.

120. Comment: We do not believe there is any legal authority or ARB policy that allows penalties to be assessed in situations that are also being addressed by recall. (Alliance/AIAM)

121. Comment: Staff had indicated that the assessment of penalties in addition to recall would occur only in cases of recalls that were not voluntary. Additionally, a rule that would permit the Executive Officer to seek penalties when a recall matter cannot be resolved short of an ordered recall, and a public hearing, would violate the Due Process Clause by chilling the exercise of the manufacturers rights to contest a recall order. ( )

Agency Response to Comments 120-121: As discussed in the Staff Report, the ARB has authority to assess penalties for violations of its rules and regulations under express authority of the Health and Safety Code. (See Staff Report, at p. 97 and Health and Safety Code sections 43016, 43023, 43154, 43211, and 43212.) Nothing in the Health and Safety Code prohibits the ARB from assessing monetary penalties in addition to recall of vehicles where warranted. Indeed, it has been the longstanding practice of the agency to assess penalties in addition to recall in cases where recall has been ordered and a manufacturer has failed to perform the necessary and appropriate action in regard to the governing statutes and regulations. (*Id.)* Penalties will only be assessed after notice and opportunity for public hearing, in which the ARB carries the burden of going forth with its case and the need for penalties. Consequently, the due process of the manufacturer will not be denied.

MISCELLANEOUS COMMENTS

122. Comment: The start date for implementation of section 1968.5 should be delayed until the 2006 model year. (Alliance/AIAM)

Agency Response: As previously explained, the ARB has determined that for all carryover provisions of section 1968.1, it is appropriate that the start date for implementation of section 1968.5 be the 2004 model year. (See Staff Report, at p. 71.) Although the provisions of section 1968.5 become immediately applicable to 2004 model year vehicles, its provisions will only apply to those requirements of section 1968.2 that are implemented for that model year vehicle. For those requirements of section 1968.2 that are implemented in subsequent model years, the enforcement provisions of section 1968.5 will only begin to apply in the model year that the requirement is implemented.

123. Comment: I wish to know if OBD3 is going to be introduced in the near future, and would appreciate any technical information about it. (Citizen)

Agency Response: At this time, OBD III remains a research concept that is being studied and evaluated by the ARB to shorten the time between detection of a malfunction by the OBD II system and subsequent repair by a technician. A final decision to pursue such a regulatory requirement has not been made. As such, there are no tentative plans or schedules for implementation of such a requirement in the near future or even in the distant future nor is there any technical information developed by the ARB regarding the concept. As a reminder, however, from the point a decision is made to pursue a regulatory requirement, it typically takes two years to develop and adopt a regulation and a minimum of 3-5 years of leadtime after adoption of a regulation before manufacturers are required to meet a new requirement.

FIRST 15-DAY COMMENTS

SECTION 1968.2 COMMENTS

124. Comment: Section 1968.2(f)(7.1) – Even though specific reference to SAE J1939 was added to the regulation in the First 15-Day Notice, the use of SAE J1939 should not be limited to just the 2004 and 2005 model year vehicles and should not be contingent on the heavy-duty OBD rulemaking. A possible gap between the 2005 model year and the implementation of the heavy-duty OBD rulemaking may allow for the proliferation of other communication protocols, creating confusion and costs. (EMA)

Agency Response: The staff added a clause to section 1968.2(f)(7.1) to require the Executive Officer to extend the temporary allowance for SAE J1939 one model year for each year that passes without the ARB adopting a heavy-duty OBD regulation. This language was added in the Second 15-Day Notice.

125. Comment: Section 1968.2(e)(1.5.2) – The U.S. EPA only requires that medium-duty diesel vehicles have catalyst monitoring for "reduction" catalysts, not "oxidation" catalysts. Section 1968.2, on the other hand, does not distinguish between the two. Requiring the monitoring of oxidation catalysts would impose unnecessary costs and burdens. The language in section (e)(1.5.2)(B)(i) should be modified to harmonize with U.S. EPA's requirements. ( )(EMA)

Agency Response: Although the ARB notes that the above comment does not specifically address modifications made available in the First 15-Day Notice, and is effectively untimely, the ARB provides the following response. The staff does not agree with the comment and thus did not modify the language as requested. The terms "reduction catalyst" and "oxidation catalyst" do not have standard or specific definitions that can be used to scientifically determine whether a catalyst is a "reduction" catalyst or an "oxidation" catalyst. Instead, they are broad terms, loosely used to describe the primary purpose of a particular catalyst. To ensure the monitoring requirements were clear and unambiguous, the staff uses only the term "catalyst" and then classifies the monitoring requirements of the catalyst by specific, measurable conversion efficiencies and/or tailpipe emission levels specific to each pollutant (i.e., hydrocarbons and oxides of nitrogen).

To the extent possible, the ARB has harmonized the requirements with U.S. EPA's requirements. For medium-duty vehicles using engines certified to an engine dynamometer standard, monitoring of catalysts for hydrocarbon performance is not required until 2007. This is essentially identical to the U.S. EPA requirement for no monitoring of "oxidation" catalysts (which primarily convert hydrocarbons). Furthermore, this also is consistent with the phase-in of more stringent tailpipe emission standards for these medium-duty vehicles, which primarily begin in the 2007 model year. The ARB does, however, require monitoring of the catalyst for NOx conversion performance as early as the 2005 model year depending on the level of NOx conversion that the catalyst is responsible for. Thus, for the 2005 and 2006 model years, a manufacturer would be required to have NOx performance monitoring on any catalyst that has more

than a 30 percent NOx conversion efficiency, despite whether the manufacturer has decided to label it as an “oxidation” or “reduction” catalyst.

126. Comment: Sections 1968.2(e)(1.5) and (e)(15) – The diesel catalyst and particulate matter trap monitoring requirements for medium-duty passenger vehicles (MDPVs) should align with those for medium-duty vehicles (MDVs) through at least the 2007 model year. With the current regulation proposal, manufacturers would be required to implement different monitoring strategies for MDPVs and MDVs, even though the engines used in these vehicles are certified to the same emission standards and requirements, and will incur additional costs and testing burden. Additionally, U.S. EPA’s OBD after-treatment monitoring requirements are the same for MDPVs and MDVs. (Alliance/AIAM)(EMA)

Agency Response: Sections 1968.2(e)(1.5.2) (for diesel catalyst monitoring) and (e)(15.2) (for particulate trap monitoring) were modified for medium-duty passenger vehicles (MDPVs). MDPVs that are certified to a chassis dynamometer tailpipe emission standard will be required to meet the same monitoring requirements as passenger cars and light-duty trucks (consistent with the requirements that these MDPVs meet the same tailpipe emission standards as the passenger car and light-duty trucks). MDPVs that are certified to an engine dynamometer tailpipe emission standard will be required to meet the same monitoring requirements as medium-duty vehicles (which are also certified to engine dynamometer standards). This language was modified in the Second 15-Day Notice.

127. Comment: Section 1968.2 (e)(1.5) and (e)(15) – The malfunction thresholds for diesel catalyst monitoring and particulate matter trap monitoring should be set at 1.75 times, not 1.5 times, the applicable standards. It is unreasonable to require more stringent levels of monitoring for medium-duty vehicles, which have no previous experience in emission threshold monitoring of these components and have little experience with after-treatment technology. Prior OBD regulations have allowed for higher malfunction thresholds when introducing new monitoring requirements. The current proposal increased the malfunction thresholds for MDPVs to 1.75 times the applicable standards, but not for MDVs, which may have been an oversight. ( )

Agency Response: The staff overlooked the fact that for diesel catalyst monitoring, different malfunction thresholds were used for MDPVs versus MPVs. Accordingly, staff modified the malfunction thresholds in section 1968.2(e)(1.5.2)(B) and (C) from 1.5 times to 1.75 times the applicable standards in the Second 15-Day Notice. However, the regulation still requires the malfunction threshold for particulate matter (PM) trap monitoring to be set at 1.5 times the applicable standards. The original change from 1.5 to 1.75 times the applicable standards for the catalyst monitor was based on data presented by various manufacturers showing the monitoring capability of catalyst monitors and the unique issues associated with the catalyst monitor. As a brief summary, the catalyst monitor was shown to have a slightly higher variability in correlation of

oxygen storage (the monitored parameter) and hydrocarbon tailpipe emission levels. As a result, a monitoring requirement of 1.5 times the standard required manufacturers to illuminate the MIL closer to 1.2 or 1.3 times the standard for the average vehicle (to ensure all vehicles illuminated the MIL prior to 1.5 times the standard). Some vehicles could even illuminate the MIL at or below 1.0 times the standard. Recognizing the cost of catalyst replacement and this variability, the ARB increased the threshold to 1.75 times the standard to allow manufacturers to calibrate closer to the average vehicle being at 1.5 times the standard when the MIL illuminated and no vehicle illuminating the MIL at or below 1.0 times the standard.

This was a special circumstance, however, unique to catalyst monitoring. Catalyst monitoring for diesel vehicles could also be expected to see such a similar phenomenon because many of the diesel catalyst monitoring strategies may be similar to gasoline monitoring strategies. At this time, however, there is no reason to suspect that PM trap monitors will exhibit this same characteristic. Manufacturers will likely use pressure sensors not only as part of the control strategy to determine when regeneration of the PM trap needs to occur, but also to monitor the performance of the trap. There are no indications that this strategy will result in such high variability that manufacturers will have to calibrate so conservatively that the MIL will be illuminating much earlier than it should be. As always, however, the staff will be monitoring industry's progress in meeting the monitoring requirements and revisit the monitoring requirements in 2004 to make modifications if necessary.

128. Comment: Section 1968.2(d)(3.2.1) – While the regulation requires the 0.020 inch evaporative leak detection monitor to meet a minimum in-use performance ratio of 0.260, preliminary data for recently implemented engine-off 0.020-inch leak detection show that these monitors will not meet the 0.260 ratio. While ARB had indicated in the Staff Report that manufacturers should have had enough experience regarding the frequency of their monitors, the engine-off evaporative leak monitors have only recently been introduced. The interim ratio requirement of 0.100 should be extended beyond the first two years a vehicle is certified to account for this, in case this issue is not formally addressed in time at the next OBD II regulation review. ( )

Agency Response: Although the ARB notes that the above comment does not specifically address modifications made available in the First 15-Day Notice, and is effectively untimely, the ARB provides the following response. For the reasons set forth in the Staff Report, the ARB did not modify the ratio requirements. But it has agreed to revisit the requirements in two years during its biennial review to modify the OBD II regulation, including the final ratios, where necessary based on in-use data.

129. Comment: Section 1968.2(e)(16.2.1)(C) – Industry has serious concerns regarding the technological feasibility and cost-effectiveness of the crankshaft/camshaft alignment monitoring requirement. While the ARB has

indicated that this requirement was added to clarify the requirement described previously in ARB Mail-Out #95-20, industry believes this goes beyond what was described in the Mail-Out and is essentially a new requirement. Specifically, industry has concerns regarding meeting this requirement on vehicles without VVT systems and vehicles that do not employ camshaft sensors, and also concerns regarding the cost of meeting the "one-tooth" requirement (due to hardware changes) as well as the high risk for false MILs. (Alliance/AIAM)

Agency Response: The staff modified the regulation to specify that the crankshaft/camshaft alignment monitoring requirement applies only to those vehicles with crankshaft and camshaft sensors as well as only to Low Emission Vehicle II applications with timing belts/chains and variable valve timing and/or control (VVT) systems. The staff also added a provision to allow a manufacturer to indicate a malfunction when misalignment is greater than one tooth/cog if a manufacturer demonstrates that a single tooth/cog misalignment cannot cause a measurable increase in emissions during any reasonable driving condition. Additionally, the staff also added allowance for manufacturers, with Executive Officer approval, to receive a two-year exemption (from the 2006 to the 2008 model years) from this requirement if hardware changes are needed. These modifications were made available in the Second 15-Day Notice.

130. Comment: Section 1968.2(f)(4.2) and (4.3) – The freeze frame information to be stored in a control module, other than that specified in section 1968.2(f)(4.3.2), should be limited to data that are present or can be derived from data being present in that control module. Diagnostics on CAN (ISO 15765-4) generally allow an easy installation of several control modules that act as independent OBD-control modules (i.e., store their own fault codes, handle freeze frames, etc.). The requirement in the regulation, which requires a large amount of data to be stored under the freeze frame conditions, could overload the CAN network when transmitting freeze frame information between control modules. Additionally, only data used in the respective control module give real information on the fault. ( )

Agency Response: Staff agreed and modified section 1968.2(f)(4.3.2) to reduce the minimum number of parameters required for freeze frame data. The new language only requires a small common set of parameters to be stored for all faults plus any other parameters used by the specific control module storing the fault code rather than requiring all parameters available on the vehicle to be stored for every fault. Rather than requiring all parameters to be unnecessarily sent to all control modules solely for the purposes of freeze frame storage, the language was modified to minimize the amount of unnecessary data transfer between modules without reducing the diagnostic value of freeze frame data to technicians. This modification was made available in the Second 15-Day Notice.

131. Comment: Section 1968.2(g)(3.3) – While the regulation was modified to delay variable valve timing and/or control (VVT) system monitoring from the 2005 model year to the 2006 model year, the certification demonstration requirements

still require testing of VVT systems starting with the 2005 model year. (Alliance/AIAM)

Agency Response: The staff overlooked this and thus modified the language to require demonstration testing of VVT systems starting with the 2006 model year. This modification was made available in the Second 15-Day Notice.

SECTION 1968.5 COMMENTS

GENERAL

132. Comment: The regulation (section 1968.5) as proposed would result in a large number of recalls for vehicle classes that exhibit no excess emissions, potentially erroneous findings of nonconformity, and foreshortened enforcement proceedings that will result in more, not fewer, disputes and contested hearings. (Alliance/AIAM)

Agency Response: See Staff Report pp. 69-70, 78-81, 93-95. As stated in the Staff Report, an underlying principle that must be understood in any discussion about remedying a nonconforming OBD II system is that the purpose and function of the OBD II system is not to directly reduce emissions. Rather, it is a diagnostic system that monitors a motor vehicle's emission-related parts for deterioration and failure. It is not expected that OBD II systems will fail concurrently with the emission-related parts that it monitors. Therefore, in most cases, there will be no direct emission increases directly tied to a discovered nonconforming OBD II system. But, in adopting regulations that all vehicles be equipped with functional OBD II systems, the Board determined that OBD II systems must be operational and functional to ensure that vehicles driven on the roads of California get the emission reductions to which they have been certified.

The ARB disagrees with the commenters' assertion that the procedures set forth will lead to erroneous findings of nonconformity and will result in more, not fewer, disputes and contested hearings. The enforcement procedures set forth a detailed testing protocol to be followed by the ARB staff that will ensure accurate results. The regulations further provide manufacturers with clear notice and opportunity to provide the Executive Officer with input and information that will be considered in making the ultimate determination regarding compliance.

Moreover, the ARB firmly believes that the enforcement regulations of section 1968.5, along with the newly adopted provisions of section 1968.2 requiring manufacturers to conduct post-production verification testing, will result in manufacturers building better, more compliant, and durable emission control and OBD II systems.

MANDATORY RECALL

133. Comment: Section 1968.5(c)(3) - Despite the added exceptions from mandatory recall that were added in the First 15-Day Notice, remedial actions following findings of "nonconformance" should be dealt with on a case-by-case basis, not automatically lead to a recall. At the April 2002 hearing, the Board clearly stated its intention to provide discretion when enforcing mandatory recall provisions. Accordingly, section 1968.5 should clearly reflect this intent. (Alliance/AIAM)(EMA)

134. Comment: The regulations should provide a general exception to mandatory recall in line with the Executive Officer's statement that he or she has authority to use enforcement discretion to avoid conducting a mandatory recall when such action does not make sense. (Alliance/AIAM)

Agency Response to Comments 133-134: See response to Comments 62-65. The ARB decided not to include the above language proposed by the commenters in that it is redundant and unnecessary. As opined by the U.S. Supreme Court, "an agency's decision not to prosecute or enforce, whether through civil or criminal process, is a decision committed to an agency's absolute discretion." (*Heckler v. Chaney* 470 U.S. 821, 831, 105 S.Ct. 1649, 1655 and cases cited therein.)

As stated by the Executive Officer and ARB General Counsel at the April 25, 2002 Board Hearing, the Executive Officer will exercise his or her discretion in determining the appropriateness of a recall remedy under sections 1968.5(c)(3)(A) and (B). In doing so, he or she will consider all relevant facts, the public policy underlying the regulation, and the public interest. (See transcript of April 25, 2002 Board hearing at pp. 67, 94-95,104.)

PROCUREMENT AND SELECTION OF VEHICLES FOR ENFORCEMENT TESTING

135. Comment: One important factor in past test programs has been the selection criteria used to screen the vehicles that are to be considered part of the sample group. Proposed provisions merely cite similar provisions that have been used in past exhaust emission test programs and state that the OBD II vehicle selection criteria are to be "consistent " with these procedures. (Alliance/AIAM)

Agency Response: See response to Comment 89. The provisions for vehicle selection in the adopted enforcement regulations (section 1968.5(b)(3)) set forth a detailed testing protocol that the Executive Officer will follow in enforcing OBD II requirements of section 1968.2. Contrary to the commenters' assertions, the proposed regulations set forth specific procedures that the Executive Officer must follow in determining the scope of the motor vehicle class, the size of the test sample group, the selection of vehicles to be tested, and the tests to be conducted. Under each of the above general areas, the Executive Officer is expected to follow specific criteria depending upon whether the OBD II system is

to be tested for its ability to meet exhaust emission thresholds, minimum in-use performance ratio levels, or other requirements of section 1968.2.

In response to comments received from the Alliance/AIAM, the original proposed text was modified to address their concerns that the Executive Officer would not be following the established procurement procedures of the exhaust emission enforcement program. The regulation, as adopted, specifically provides that the Executive Officer will procure vehicles in the same manner as in the latter program.

136. Comment: Section 1968.5(b)(3)(D) - The proposed provisions for vehicle selection criteria in section 1968.5(b)(3)(D) are not sufficient to ensure that only representative vehicles are selected for OBD II Enforcement testing. (Alliance/AIAM)

Agency Response: See response to Comment 89 and above comment.

137. Comment: A statistically representative sample is necessary to ensure the results of any test program are accurate. The proposed provisions fail to ensure that the minimum technical procedures required to obtain an accurate sample are followed. (Alliance/AIAM)

Agency Response: The intent of the adopted regulation is that vehicles included in enforcement test sample groups are representative of vehicles driven in-use in California. It has been long-established, and recognized by the members of the Alliance/AIAM, that the process followed by the ARB for selecting vehicles for enforcement testing of exhaust emission standards properly ensures that vehicles selected are representative of the motor vehicle class being tested. These procedures (i.e., procurement protocol and criteria for vehicle selection) have been carried over to the OBD II test program.

The manufacturers have presented no evidence to demonstrate that vehicles selected for OBD II testing would not be representative. It has been accepted -- and at this point in time beyond dispute -- that it is appropriate to limit procurement to a specified geographical area from the test site location, to solicit participation of vehicle owners using Department of Motor Vehicles (DMV) information, to randomly select vehicles from the responses to the solicitation, and to include only vehicles that meet the criteria for selection. As stated, in developing the adopted test vehicle procurement and selection criteria, the ARB has taken every effort to parallel the existing exhaust emission procedures to assure that vehicles are representative. As with the exhaust emission enforcement program, the ARB will not rely upon convenience samples in making preliminary or final findings of nonconformity. But rather, as stated, the Executive Officer will solicit vehicles using DMV records and will randomly select vehicles responding to that solicitation for testing.

138. Comment: The regulation fails to provide adequate guidance to ARB staff or clear notice to manufacturers on how the selection criteria are to be used. (Alliance/AIAM)

Agency Response: The ARB does not understand the nature of the manufacturers' concern. As stated, the criteria closely parallel the criteria used in exhaust emission enforcement testing. The manufacturers have had more than 20 years of experience working with the ARB in using this and know intimately how the criteria have been applied in practice. As the manufacturers know, many of the criteria have definitive, black and white standards for inclusion in the test sample (e.g., is the vehicle over or under 75 percent of its certified useful life mileage or age; does the vehicle have sufficient vehicle operation data?). Other criteria (e.g., improperly maintained, abused, and neglected) have been defined over the years as the parties have included vehicles for and excluded vehicles from emission testing. These terms, as they have been defined in practice, are being carried over to OBD II testing. The terms will continue to be defined as the OBD II testing program evolves.

In adopting the OBD II enforcement regulation, the ARB recognized the difficulty, if not impossibility, of developing an exhaustive list of criteria for selecting vehicles. Rather, the Board decided that the use of general terms, like improperly maintained and abused, recognizes the benefits of flexibility and the need for considering unique circumstances on a case-by-case basis. As with the exhaust emission enforcement program, manufacturers will be given the opportunity to review and challenge vehicles that have been included in ARB testing.

139. Comment: At a minimum, the vehicle rejection criteria should include all the provisions listed in Appendix II, Subpart S of part 86 of the Code of Federal Regulations. These same criteria are currently used by ARB for in-use emissions compliance testing. (Alliance/AIAM)

Agency Response: The criteria of section 1968.5(b)(3)(D) are very similar to, if not more stringent than, the criteria listed in Appendix II, Subpart S of part 86 of the Code of Federal Regulations. For example, the federal regulations would only exclude vehicles that have been "obviously" tampered. The other federal criteria are all subsumed within the criteria set forth in the OBD II regulation. This includes the federal criterion that would per se exclude all vehicles having an inoperative or replaced odometer. The ARB has determined that the more appropriate criterion in determining a representative sample is to include only vehicles for which it can be determined that they have not exceeded 75 percent of their certified full useful life mileage. As part of its inspection of vehicles under the exhaust emission enforcement program, the ARB excludes vehicles that have repaired or replaced odometers. The ARB further asks if the odometer has ever malfunctioned. If the answer is yes, and if the odometer was not repaired within two weeks, that vehicle will also be excluded.

140. Comment: The selection criterion that states that vehicles with mileage at or above 75 percent of the full useful life mileage for the vehicle class should not apply to LEV II vehicles that are certified as PZEVs under the 150,000-mile option. Sections 1961(a)(8)(A) and (B) provide that in-use testing of such vehicles extends only to 105,000 miles. (Alliance/AIAM)

Agency Response: The requirement of section 1961(a)(8) that in-use testing for such vehicles extends only to 105,000 miles has recently been amended by the ARB to allow testing through 75 percent of the vehicle's full useful life.

141. Comment: The need to procure and test a statistically representative sample of vehicles is critical to the factual basis needed to support a finding of nonconformity. If the test sample is not statistically representative of the recall class, it is not possible to make a technically sound inference about the behavior of the vehicle class as a whole. (Alliance/AIAM)

142. Comment: Results of OBD II testing are highly dependent on the specific vehicle, driver, and driving patterns encountered. (Alliance/AIAM)

143. Comment: The exhaust emissions testing programs conducted by the ARB for decades have repeatedly demonstrated the importance of obtaining a representative sample. ( )

144. Comment: The language proposed does not reflect the consensus reached between the Executive Officer and the participants in this rulemaking. (Alliance/AIAM)

Agency Response to Comments 141-144: See Agency Response to Comments 89 and 135-137. See also rationale of Second 15-Day Notice modifications. The ARB and the commenters agree that the test sample procured and selected by the ARB must be representative of the motor vehicle class being tested.[1] The parties further agree that the procurement and selection procedures followed by the ARB in its exhaust emission enforcement program have for over 20 years recognized the importance of selecting vehicles that are representative of the vehicles being tested. In those 20 years, it has been undisputed by the parties that the proper procurement and testing of a minimum of 10 vehicles is representative of the emission characteristics of the vehicle being tested. To assure that test sample groups in OBD II testing are representative of the motor vehicle class being tested, the ARB has made it unequivocally clear that it intends to continue its long-standing practice of properly procuring, selecting, and testing of test sample vehicles. To this end, the regulation specifically provides that it will continue the same procurement practices that it has used in procuring vehicles for exhaust emission enforcement testing. The criteria set forth in the regulation that will determine whether vehicles are appropriate for inclusion in test samples for OBD II emission and ratio-based data accumulation closely

[1] See also Agency Response to Comment 150 for a further response to commenters' statement that a consensus had been reached prior to the Board hearing.

parallel the selection criteria that has long been used for exhaust-emission enforcement testing. The criteria differ only to the extent necessary to reflect the special nature of the OBD II testing to be performed. This change will almost certainly cut in the manufacturer's favor. For example, for OBD II emission testing, the criteria has been modified to exclude vehicles from the test sample group if maintenance of a vehicle impacts the performance of the OBD II monitor being tested as well as emissions of the vehicle. For ratio-based testing, vehicles that do not have sufficient in-use monitoring data will not be included in the test sample. Also, for ratio-based testing, in contrast to OBD II emission testing, the regulation does not include those exhaust emission selection criteria that are not relevant to or have no impact on collected ratio data.

The ARB is not certain what the commenters mean by their reference to "statistically representative." The dictionary does not provide much guidance. It defines "statistical" or "statistically" to mean, "having to do with, consisting of, or based on statistics." *Webster's New World Dictionary, Third College Edition*, Simon & Schuster, Inc., 1988. "Statistics" are defined as "facts, or data of a numerical kind, assembled, classified, and tabulated so as to present significant information about a given subject; the calculation, description, manipulation, and interpretation of the mathematical attributes of sets or populations too numerous or extensive for exhaustive measurements." *Id.* If by use of the term the commenters mean that the ARB should continue its current practice of using a random selection component in selecting vehicles to be included in test sample groups, the ARB agrees with them. As indicated above, the ARB unequivocally intends to continue its practice of procuring vehicles as it has done with exhaust emission enforcement testing. This involves the random selection of vehicles from the pool of vehicles that have responded to the ARB's general solicitation call based on DMV records.

If one accepts this definition of representative sample, the commenters' concerns regarding vehicle and driver variability have likely been addressed. Moreover, as explained in the ARB's response to previous comments, for OBD II emission tests, the ARB will, in the great majority of cases, be using the same FTP dynamometer testing that it uses in exhaust emission enforcement testing. It is has long been held that such test procedures eliminate much of this variability and the nonconformance thresholds used for the results of the testing more than account for any remaining variability. In cases where testing other than FTP dynamometer testing is required for some or part of the nonconformance decision, other steps have been taken to eliminate or address vehicle and driver variability.

For ratio testing, the procedure requires a sample of 30 vehicles instead of 10 (to account for more variability from vehicle to vehicle), a minimum of at least six months of logged data per vehicle (to account for day to day differences in driver habits), a filtered trip counter for determining the ratio (to account for abnormal driver habits or atmospheric conditions), a calculation of the average ratio from the 30 vehicles (to further account for vehicle to vehicle variability), and the use

of a statistically calculated nonconformance threshold that takes into account the sample size and the differences in ratios observed on the sample vehicles to ensure a 90 percent confidence that the test sample results are representative of the actual fleet.

For testing which involves both FTP testing and on-road testing, the FTP results are the ultimate results that determine whether a system is nonconforming. As mentioned above, FTP test procedures already adequately address variability. For the portion of this testing that may be performed on-road, the test procedure involves deliberate operation of the vehicle in the conditions necessary to exercise the monitor being evaluated. There is no vehicle or driver variability concerns with this portion of the testing because the vehicle will be driven in an intentional manner to meet the conditions identified by the vehicle manufacturer as those necessary to operate the monitor. Particular driver habits are irrelevant when doing this type of testing.

Finally, the commenters have presented no evidence to support their claims that the procurement and selection protocol set forth in the regulation would not be representative of the motor vehicle class that is being tested. They have failed to show why the provisions that they have long accepted for ARB exhaust emission enforcement testing should not be used in OBD II enforcement testing and why the limited OBD II-specific modifications to that existing protocol would in any way invalidate OBD II enforcement test results.

145. Comment: The proposed changes in sections 1968.5(b)(3)(B)(i) and (ii) add language that create presumptions that a sample consisting of at least 10 vehicles (OBD emission testing) or 30 vehicles ((OBD II ratio testing) is "determinative as to their representativeness of the emission characteristics of the motor vehicle class being tested." Language referring to "determinative as to their representativeness" should be deleted from these sections. (Alliance/AIAM)(EMA)

Agency Response: See Agency Response to Comments 141-144 above. Commenters refer to language that was proposed in the staff's First 15-Day Notice, which was proposed in an attempt to clarify its initial proposal regarding the number of vehicles that the ARB will test as part of the OBD II test program. Staff sought to clarify its intent in light of confusion expressed by the comments in their response to the initial proposal. (See comments of Alliance/AIAM, dated April 24, 2002. (April 24 Comments).) There, they objected to language that stated that the Executive Officer would follow the provisions of section 2137 and use a sample size of at least 10 vehicles in OBD II emission enforcement testing and 30 vehicles for OBD II ratio testing. The commenters claimed that the provisions "merely proposed minimum quantities of vehicles that must be procured with no explicit statistical representativeness requirement." (April 24 Comments, p. 9.)

As set forth in the Staff Report, it has been the intent of the ARB that the Executive Officer, in conducting OBD II emission testing, would use the same sample size that it has historically been using in exhaust emission enforcement testing under section 2137. It is undisputed that the Executive Officer has for years relied upon the testing of 10 vehicles to determine the emission characteristics of the vehicle class being tested.[2] To clarify its intent that it would be relying on a similar number of vehicles in OBD II emission testing and recognizing that the reference to "a minimum of 10 vehicles" in section 2137 may be confusing, the staff modified section 1968.5(b)(3)(B)(i). In the First 15-Day Notice, the language was changed to expressly state that the Executive Officer would test a sample size of 10 vehicles that have been properly procured and selected and that such testing would be "determinative as to the representativeness" of the tested vehicle class. In proposing this language, the staff wanted to make it clear that the ARB would be continuing its existing practice of relying on the testing results of 10 vehicles to represent the emission characteristics of a vehicle class. (See First 15-Day Notice, Attachment IV, rationale for proposed modifications.)

In comments to the First 15-Day Notice, the Alliance/AIAM contended that the proposed language created an impermissible presumption. (Alliance/AIAM comments dated October 31, 2002 (October 31 comments).) This was not the ARB's intent. As stated, the language was proposed to clarify the commenters misunderstanding of the initially proposed language that was presented to the Board. In approving the regulations for adoption, the Board relied upon the Staff Report and other evidence in the rulemaking record that specifically stated that the Executive Officer would follow its long-established exhaust emission enforcement testing protocol. As stated, that protocol has been understood by all motor vehicle manufacturers to require the testing of as few as 10 vehicles to represent the emission characteristics of the larger class of vehicles being tested.

To make it clear that the ARB did not intent to create an implied presumption but rather an express finding by the Board, the staff further modified section 1968.5(b)(3)(B)(i) in a Second 15-Day Notice. The modified section continues to expressly provide that the provisions of section 2137 are to be followed in selecting the test sample of vehicles. To underscore this fact, the language has been modified to more closely parallel that used in section 2137. As stated, this language has undisputedly been understood by all parties to mean that 10 properly procured, selected, and tested vehicles may be used by the Executive Officer to determine the emission characteristics of the class of vehicles being tested and compliance.

[2] This fact should not be obfuscated by claims that the Executive Officer may test as many as 14 vehicles. Although the Executive Officer may test more than 10 vehicles, this is merely to ensure that the test sample group will meet the minimum sample size requirement after manufacturer review and investigation.

Similarly, the Board did not make a presumption in finding that ratio data from 30 vehicles that have been properly procured and selected will be used to determine the OBD II monitoring performance of the motor vehicle class. Rather, the Board adopted this finding based on the information in the rulemaking record and specifically, Attachment V, Dr. Rocke's analysis. The rationale for testing 30 vehicles was set forth in detail in the Staff Report and the attached rationale to the First 15-Day modifications. In the latter document, the staff stated:

> [S]ection (b)(3)(B)(ii) has been modified to clarify that for in-use ratio testing of OBD II monitors, a sample of at least 30 vehicles meeting the selection criteria of section (b)(3)(B)(ii) shall be used to represent the in-use ratio monitoring performance of OBD II systems installed in the tested motor vehicle class. Using common statistical methods, the pass/fail ratio criteria to be used for enforcement testing were modified from the minimum ratio requirements in section 1968.2 to account for a sample size of 30 (see Appendix V of the Staff Report: Initial Statement of Reasons for Proposed Rulemaking, issued on March 8, 2002). Specifically, the enforcement pass/fail ratios were lowered to the point that ensured that the Executive Officer would have a 90% confidence interval that any sample of 30 vehicles that had an average ratio below the pass/fail ratio would be a conclusive determination that the tested motor vehicle class had a ratio below the minimum required ratios in section 1968.2. Consequently, the combination of 30 or more vehicles and the adjusted enforcement pass/fail ratios provide an accurate indication of the in-use ratio characteristics of the tested motor vehicle class.

As with OBD II emission testing, to ensure proper procurement and selection of vehicles, the ARB will follow the procurement and selection protocol set forth in the regulations, which closely parallels that used by the staff in procuring and selecting vehicles for emission enforcement testing.

146. Comment: The proposed language of section 1968.5(b)(3)(D)(iv) as set forth in the First 15-day modifications creates a presumption that in the absence of "apparent evidence . . . that a vehicle fails to meet the criteria set forth above, it shall be presumed that the Executive Officer has properly included vehicles in a test sample group." The proposed presumption should be deleted. (Alliance/AIAM)

Agency Response: See Agency Response to Comment 89. In their comments to the language initially proposed in section 1968.5(b)(3)(D), the commenters objected that the Executive Officer would include vehicles in the test sample group that have "no reasonably apparent indication" of a disqualifying condition. In initially proposing the "no reasonably apparent" language, the staff recognized the difficult, if not impossible, task of making an unequivocal determination that a vehicle does not meet any of the criteria that would cause it to be excluded from the test sample group. Accordingly, the staff proposed that a properly procured vehicle might be included in the test sample if a detailed and thorough inspection

of the vehicle and its history revealed no reasonably apparent indication of a disqualifying condition. As in the exhaust emission enforcement program, the staff would continue its practice of erring on the side of excluding vehicles.

The "no reasonably apparent" standard that the ARB originally proposed is in many ways a higher, more conservative standard than that used by the U.S. EPA, which the commenters have asked to be incorporated into this regulation. For example, under the federal criteria, a vehicle would be excluded only if it "has been obviously tampered." (Emphasis added; see Appendix II to Subpart S to Part 86—As Received Testing Vehicle Rejection Criteria.)

As stated repeatedly, the staff intends to apply the rigorous procurement and selection practices of the exhaust emission program to OBD II enforcement testing. The staff agrees with the commenters that, as in the exhaust emission enforcement program, vehicles found to have any disqualifying condition must be excluded from the test sample. Also, even if a vehicle has been admitted into the test sample group and tested, if it is subsequently determined that the vehicle should not have been included, the data from testing that vehicle will be thrown out and not considered.

Although the ARB included an express presumption that the Executive Officer has properly included vehicles in test sample group in the First 15-Day Notice, it subsequently deleted the language creating the presumption in the Second 15-Day Notice. The ARB deleted the language finding that it was redundant in that California law expressly presumes that the official duties of public employees will be regularly and properly performed. (See California evidence Code section 664.) The adopted regulation is consistent with established law; in the performance of his or her duties, it shall be presumed that the Executive Officer has properly included vehicles in the test sample group. As California law requires, the regulation further provides that the burden is rebuttable and can be overcome by evidence that a vehicle fails to meet one or more of the disqualifying criteria of sections 1968.5(b)(3)(D)(i) through (iii).

147. Comment: The specific type of presumption (e.g., rebuttable or irrebutable, and if rebuttable, on what type of showing) is not specified in the proposed modified text, and therefore fails the test of clarity under the California APA. There is also no evidence that any type of presumption is needed, so the proposal does not comply with the requirement for necessity. (Alliance/AIAM)

148. Comment: The presumptions of sections 1968.5(b)(3)(B) and (D)(iv) lack a proper and legally sufficient nexus between (1) the fact or conclusion to be established by the presumption and (2) the facts that actually exist in a given situation to be governed by the presumption. ( )

149. Comment: The Executive Officer needs to demonstrate that the proposed presumption has an adequate factual basis and also that it is otherwise rationale

and appropriate because the benefits of the presumption outweigh its potential negative effects. (Alliance/AIAM)

Agency Response to Comments 147-149: See Agency Response to Comments 145 and 146 above. As stated above, the ARB did not intend to create any presumptions in section 1968.5(b)(3)(B). But rather, in adopting sections 1968.5(b)(3)(B)(i) and (ii), the Board found, based on the record, that the testing of as few as 10 and 30 properly procured, selected, and tested vehicles, respectively, is sufficient to determine the emission characteristics and in-use monitoring performance of the motor vehicle class being tested. The expressed presumption in section 1968.5(b)(3)(D)(iv) that commenters refer to has been deleted, but a presumption under California law remains that the Executive Officer has properly performed his or her duties in selecting vehicles for inclusion in the test samples.

150. Comment: The created presumptions are not consistent with the exhaust emission test program sampling procedures and reflect a misunderstanding of the purpose of the minimum sample size requirement. The experience of manufacturers and the ARB has been that the test sample procured for a test program usually cannot meet the requirements for providing a representative sample. Numerous test programs have had samples that upon further review were not representative, even though they contained the minimum number of required vehicles. The minimum sample size requirements are a necessary prerequisite, but are not sufficient alone, to obtain reliable test results. The results will only be reliable if the vehicles are properly selected and screened. (Alliance/AIAM)

Agency Response: As stated in previous responses, the adopted OBD II enforcement program is fully consistent with the exhaust emission test program sampling procedures. The ARB has made every effort to ensure that the OBD II enforcement program parallels the exhaust emission program wherever possible, especially in the case of OBD II emission testing. To the extent that the commenters are saying that a sample cannot be representative if it includes improperly procured and selected vehicles, the ARB wholeheartedly agrees. (See Agency Response to Comments 141-144.) A close reading of sections 1968.5(b)(3)(B)(i) and (ii) makes it clear that a test sample can only be used to determine respectively the emission characteristics and in-use monitoring performance of the tested motor vehicle class if the vehicles have been properly procured and selected. To the extent the commenters agree with the above, their characterization that a consensus existed between them and the Executive Officer at the time of the Board hearing is correct.

151. Comment: The proposed language of sections 1968.5(b)(3)(B) (i) and (ii) and (b)(3)(D)(iv) is fundamentally inconsistent with what the Board considered and approved at the hearing in April and its inclusion in the final rule would violate the California APA. First, no reasonable member of the public could have determined from the pre-hearing notice that this change in regulatory text could

have resulted. Second, the Board did not authorize the Executive Officer to make any further changes to this portion of section 1968.5. In proposing the language establishing a presumption, the Executive Officer has exceeded the scope of delegated authority under the Board's governing statutes, the regulation reserving rulemaking power to the Board, and the Board Resolution adopted at the April hearing. ( )

Agency Response: See the agency's responses to previous comments. From the beginning, the ARB has made it clear that it intended to closely parallel the OBD II enforcement program with the existing emission testing program. Indeed, the language of the adopted regulation, as last modified by the Second 15-Day Notice, closely tracks the language of title 13, CCR, section 2137, the regulatory provision that underlies vehicle selection for the exhaust emission enforcement program.

The commenters' statement that no member of the public could have determined from the pre-hearing notice that the changes to sections 1968.5(b)(3)(B)(i) and (ii) could have resulted is without merit. First, the comments may be moot in that commenters' concerns may have been addressed by clarifications to the text in the Second 15-Day Notice. Second, even if such concerns continue to exist, the modified text of the First 15-Day Notice was sufficiently related to the original text that the public was placed on notice that the change could result from the originally proposed regulatory action. (Government Code section 11346.8(c).) The original notice of the proposed rulemaking specifically set forth that the Board would be adopting detailed testing provisions for enforcement of the OBD II regulations. And the originally proposed text of section 1968.5(b)(3) set forth a broad and detailed protocol that the Executive Officer would follow in testing vehicles. That section specifically provides, to the extent possible, that the Executive Officer would follow the procurement, selection, and sample size provisions of section 2137, title 13, CCR. As set forth above, in the responses to Comments 141 through 145 above, the Executive Officer proposed the First 15-Day modifications to the procurement and selection protocol largely in response to comments received from the Alliance/AIAM. In their initial comments, they expressed that the regulation was unclear as to the sample size that the Executive Officer would use in OBD II enforcement testing. The First 15-Day modifications were an attempt to provide clarity and specific notice to the affected stakeholders that the Executive Officer would use sample sizes of as few as 10 and 30 vehicles to respectively determine the emission characteristics and in-use monitoring performance of the motor vehicle class being tested. The language was clearly related to the originally proposed text. The Second 15-Day Notice provided further clarification.

In Resolution 02-17, the Board directed the Executive Officer:

> . . . to adopt proposed sections 1968.2 and 1968.5, title 13, California Code of Regulations, after making the modified regulatory language and any additional supporting documents and information available for public

comment for a period of 15 days, provided that the Executive Officer shall consider such written comments regarding the modification and additional supporting documents and information as may be submitted during this period, shall make modifications as may be appropriate in light of the comments received, and shall present the regulations to the Board for further consideration if he or she determines that this is warranted.

The modifications to section 1968.5(b)(3)(B) executed by the Executive Officer in the First and Second 15-Day Notices were clearly within the Board's delegation. As stated, the Executive Officer proposed the changes in direct response to the comments received from the commenters.

MANUFACTURER RESPONSE TO NONCONFORMANCE DETERMINATIONS

152. Comment: The modifications to section 1968.5(b)(7) that prohibits the Executive Officer from considering any information submitted by a manufacturer after the time established for submission of such information has passed, unless the manufacturer could not have reasonably foreseen the need for providing the information, violates APA because it is inconsistent with the text approved by the Board at the hearing. (Alliance/AIAM)

Agency Response: At the Board hearing, the staff proposed adding a new section 1968.5(b)(7)(E) to the text of the regulation, which provided:

> Any information provided by the manufacturer to the Executive Officer after the time established by the Executive Officer for submission shall be considered by the Executive Officer only if the manufacturer could not have foreseen the need for the information or could not have generated the information during the time period provided.

The Board considered the above language and approved it for adoption, subject to modifications that the Executive Officer may later deem necessary in light of comments received from the public. The Alliance/AIAM provided extensive comments regarding the provisions of section 1968.5(b)(7), specifically the time periods for a manufacturer to respond to the Executive Officer's initial determination of noncompliance. Upon considering their comments, the Executive Officer issued the First 15-Day Notice, which included additional, though limited, modifications to the text. (See Attachments III and IV to the First 15-Day Notice.) As explained in the response to Comment 151, the modifications to the original text set forth in the First 15-Day Notice do not violate the APA. The changes were sufficiently related to the original text that the public was placed on notice that such a change could result. (Government Code section 11346.8(c).) Further, as explained in the rationale attached to the First 15-Day Notice, the subsequent modifications to the text were made consistent with the Board's directives.

In the Second 15-Day Notice, the ARB further modified the language of section 1968.5(b)(7)(D) to provide the Executive Officer with discretion in deciding whether to accept any late information submitted by a manufacturer. In determining whether to accept late information, the Executive Officer will consider the lateness of the submission, the manufacturer's reasons for why such information was not timely presented, the materiality of the information to the Executive Officer's final determination, and what effect any delay may have on effective enforcement and the health and welfare of the State.

153. Comment: The 90-day time period provided for a manufacturer's response to an Executive Officer finding of nonconformity is insufficient. (Alliance/AIAM)

Agency Response: See response to Comment 99. Based on experience with exhaust emission enforcement testing, the ARB believes that the time period for manufacturers to respond is, in general, more than sufficient. Additionally, the regulation provides that the Executive Officer may grant extensions for good cause and that he or she will grant reasonable extensions if, despite the exercise of reasonable diligence, a manufacturer could not produce relevant evidence in the time provided.

154. Comment: The time for responding should not begin until all records material to the finding are released. The regulation still does not contain a specific time limit under which the ARB is to provide the manufacturer with all of the records related to the finding of nonconformity. (Alliance/AIAM)

Agency Response: See response to Comment 100. The time periods established in the regulation have been set in an effort to reasonably balance fair process and to ensure expeditious compliance with the regulation. The regulation requires that the ARB produce all requested documents material to the Executive Officer's determination within the timeframes set forth in the California Public Records Act. The regulation further provides that the manufacturer may request reasonable extensions of time from the Executive Officer. If the failure of the ARB to provide relevant and necessary documents in a timely manner is the reason that a manufacturer cannot timely respond, it is expected that the Executive Officer will grant a reasonable time extension.

The ARB believes that the "no less than 90-day" time period is fair and reasonable and will allow manufacturers sufficient time to respond to the Executive Officer's findings of nonconformance, or if necessary to file a request for a reasonable extension of time.

155. Comment: Time extensions should be provided to manufacturers based upon "reasonable progress," not "reasonable diligence." (Alliance/AIAM)

Agency Response: The ARB does not agree with the commenters' suggestion. In adopting the "reasonable diligence" requirement, the Board has determined that a manufacturer should be held to a standard of a person seeking to satisfy a

legal requirement or to discharge a legal obligation. (See *Black's Law Dictionary,* seventh ed., West Law Group, 1999.) In making this determination, the Executive Officer will consider all of the factors that he or she considers in making a good cause determination, as well as the effort, time, and resources that the manufacturer has put forth in attempting to generate the evidence that it wishes to provide as part of its response.

CONSIDERING EMISSIONS IN REMEDIAL DETERMINATIONS

156. Comment: Section 1968.5(c)(4)(C) - The Executive Officer should be provided with flexibility to consider vehicle emission information in making remedy determinations. It is inconceivable that the Executive Officer would not want to consider all the environmental information in fashioning a remedy for an environmental regulation. (Alliance/AIAM)

157. Comment: Staff's argument in the Staff Report that emission failures in later years in an automobile's life are speculative is incorrect. As the industry and regulatory agencies gain experience with emission controls and OBD systems, the accuracy of emission failure data and predictions will improve. In addition, the failure rates associated with vehicle systems, including OBD II systems, continue to decrease with greater experience. ( )

Agency Response to Comments 156-157: See response to Comments 104-112. See discussion in Staff Report at pp. 78-81 and 93-95; see also Attachment IV to the First 15-Day Notice, at p. 17. The ARB continues to believe that in determining a proper remedy for a nonconforming OBD II system, it is inappropriate to consider the on-average exhaust emissions of the motor vehicle class. First, the science of calculating average emissions for today's vehicle fleets 15 to 20 years into the future when such fleets are using new and increasingly advanced technologies continues to be inexact. Indeed, in stating that the accuracy of emission failure data and predictions will improve sometime in the future, the commenters acknowledge the speculative nature of the science today, even as they argue the contrary. In adopting sections 1968.2 and 1968.5, the ARB reaffirmed that functioning OBD II systems are necessary to detect in-use emission-related motor vehicle failures. In so doing, the Board recognized that OBD II systems and emission-related parts do not fail at the same time and that to rely upon speculative future fleet emission data to find that a functioning OBD II system is unnecessary for certain vehicles would be contrary to the Board's dictates. At this point in time, because of the uncertainty of accurately predicting fleet emissions 15 or more years into the future, the Board is concerned that use of such emissions data would obfuscate any determination as to the appropriate remedy, with potential adverse environmental consequences.

SECOND 15-DAY COMMENTS

158. Comment: Section 1968.5(b)(7)(C)(ii) requires manufacturers who object to the size or selection method of the test sample group for "other OBD II testing" to set forth "test data from vehicles that confirm the manufacturer's position." This seemingly limits the data to only those obtained from the vehicle. In fact, there may be many other technical reasons that a manufacturer objects to a particular test sample based on data other than that obtained from vehicles (e.g., inappropriate screening criteria, inadvertent selection bias, etc.). The regulation should be modified to allow any relevant technical data to be presented that bears upon the validity of the challenged test sample. Specifically, the language in section 1968.5(b)(7)(C)(ii) should be modified to require manufacturers to set forth "relevant technical data," not "test data from vehicles," that confirm the manufacturer's position. (Alliance/AIAM)

Agency Response: The revised language of section 1968.5(b)(7)(C)(ii) was not intended to preclude manufacturers from presenting any relevant evidence in support of a challenge asserting that the Executive Officer inappropriately included vehicles in a test sample group. This specifically includes the types of challenges identified by the commenters and is in accord with section 1968.5(b)(3)(D)(iv). That section specifically provides that a manufacturer may present such evidence to the Executive Officer and, if supported, the Executive Officer shall remove such vehicles from the test sample. (See also section 1968.5(b)(7)(C)(i)a.) With this clarification, the commenters' identified concerns regarding the validity of a challenged test sample seem to have been addressed.

The provisions of section 1968.5(b)(7)(C)(ii), which limit manufacturer rebuttal information to vehicle test data, is specifically directed only at objections to the size of the test sample group (section 1968.5(b)(3)(B)(iii)) and the vehicle procurement methodology used by the Executive Officer (section 1968.5(b)(3)(C)(ii)). The ARB believes that the term "test data" should be interpreted broadly to include most types of technical data that are related to the selection and procurement of test vehicles.

159. Comment: Section 1968.2(e)(1.5) – We do not believe there is a feasible method or technology available for monitoring the conversion efficiency of diesel oxidation catalysts at this time. (Mercedes)(DaimlerChrysler)(VW)

160. Comment: While it may presently be possible for vehicles to do just "presence" catalyst monitoring if malfunctions do not cause emissions to exceed 1.75 times the emission standard, the more stringent the standards become, the harder it would be to meet this requirement. While the changes made to section 1968.2(e)(1.5) in the First 15-Day Notice were appropriate, we are still concerned that the requirements will prohibit the introduction of light-duty and medium-duty diesel vehicles and medium-duty diesel passenger vehicles in California and adversely affect our production plans beyond the 2007 model year. The regulation should follow U.S. EPA's OBD regulation, which specifically excludes monitoring of diesel oxidation catalysts, or, at a minimum, allow the staff flexibility in approving OBD II systems of those manufacturers who have done their best to

meet the requirements within the constraints of the available technology. (Mercedes)(DaimlerChrysler)

161. Comment: Section 1968.2(e)(1.5) should have a statement similar to that of section 1968.2(e)(9.1.2) for positive crankcase ventilation (PCV) monitoring, which allows ARB flexibility to approve the monitoring strategy based on feasibility, to apply to oxidation catalyst monitoring. ( )

Agency Response to Comments 159-161: The staff does believe it is feasible to conduct catalyst monitoring on diesel passenger car and light-duty trucks beginning in the 2004 model year. Several manufacturers and suppliers have been developing monitoring strategies primarily utilizing wide-range air/fuel sensors or temperature sensors. In some cases, however, monitoring of the catalyst may indeed require "intrusive" fuel control strategies like those often used on gasoline engines. That is, to perform the catalyst monitor, the fuel control system may be required to actively change the fueling characteristics to achieve an optimal condition for catalyst monitoring. This may include the use of post-injection strategies or even an auxiliary fuel injector in the exhaust. In discussions with the commenters directly, they had not yet investigated those types of strategies for the diesel catalyst monitor despite their use of intrusive monitors on their gasoline vehicles.

Regarding the strategy of a "presence" type monitor, there is a possibility that such an indirect strategy could meet the requirements of the regulation. Specifically, in cases where the performance of the catalyst is such that only a functional monitor is required (e.g., the monitor need only verify that some detectable level of catalyst efficiency is still present), an indirect monitor that verifies a pressure drop across the catalyst could meet the requirements. However, approval of such a strategy would necessitate a thorough durability demonstration by the vehicle manufacturer. This demonstration must show that verification of a pressure drop would ensure the presence of a catalyst substrate and that the durability of the catalyst precious metals and washcoat is such that there will always be some level of catalyst conversion efficiency still occurring as long as the substrate is still present. Such a durability demonstration would need to investigate the effects of various poisoning as well as severe thermal degradation.

As such, the staff does not believe the current requirements prohibit the introduction of diesel vehicles in the passenger car and light-duty truck market. The OBD II regulations do, however, require monitoring of all emission control components. Accordingly, manufacturers do have some limitations on what types of emission control technologies they can use to meet California's exhaust and evaporative emission standards. If the components cannot be monitored by the OBD II system, the OBD II regulations do effectively prohibit the introduction of that technology and force manufacturers to use alternate emission control strategies and components to meet the emission standards.

Lastly, the staff will be developing additional OBD II regulations for heavy-duty vehicles that are primarily composed of diesel engine vehicles during 2003 and will be revisiting the regulatory requirements for light- and medium-duty vehicles in 2004. The staff will continue to monitor the industry's progress in meeting diesel catalyst monitoring requirements and will make modifications, if necessary, to address any issues that arise during further development of catalyst monitoring strategies.

162. Comment: Section 1968.2(e)(15) - We presently do not have technology available to meet the new threshold-based monitoring requirements for particulate matter (PM) trap monitoring for diesels. Section 1968.2(e)(15) should have a statement similar to that of section 1968.2(e)(9.1.2) for positive crankcase ventilation (PCV) monitoring, which allows ARB flexibility to approve the monitoring strategy based on feasibility. (VW)

Agency Response: The staff does believe it is feasible to conduct PM trap monitoring on diesel passenger car and light-duty trucks beginning in the 2004 model year. Several manufacturers have been developing monitoring strategies and have shown considerable progress in meeting the required levels. These strategies primarily utilize pressure sensors to measure the pressure drop across the PM trap in specific operating conditions to verify that the trap is still performing acceptably. In fact, many of the PM trap systems are actually using the same pressure sensors as part of the regeneration control strategy for identification of when a sufficient amount of PM has been trapped such that a regeneration event should be triggered. A natural fall-out from such a control strategy is the ability to know when the control system can no longer perform as it should, such as the inability to burn off sufficient PM during a regeneration event (the pressure sensors do not indicate a substantial change in pressure from before and after the regeneration event) or even when the time between requested regeneration events becomes too short (indicating the trap no longer has sufficient PM storage capability). The staff will be developing additional OBD II regulations for heavy-duty vehicles that are primarily composed of diesel engine vehicles during 2003 and will be revisiting the regulatory requirements for light- and medium-duty vehicles in 2004. The staff will continue to monitor the industry's progress in meeting diesel PM trap monitoring requirements and will make modifications, if necessary, to address any issues that arise during further development of PM trap monitoring strategies.

163. Comment: We support the Second 15-Day modifications to the catalyst monitoring requirements for diesels (section 1968.2(e)(1.5)). Specifically, we support the modifications that (1) allow medium-duty passenger vehicles (MDPVs) that are certified to the engine dynamometer tailpipe emission standard to meet the same catalyst monitoring requirements as medium-duty vehicles (MDVs) for 2005 and later model year vehicles, and (2) increase the catalyst monitoring malfunction criteria to 1.75 times the applicable standards for 2005 and later model year MDPVs and MDVs. These changes are consistent with

current federal and state regulations, and provide the same emission benefits as the prior proposed regulations. (DCMI)

Agency Response: We appreciate your comment.