State of California
Environmental Protection Agency

AIR RESOURCES BOARD

PUBLIC HEARING TO CONSIDER THE ADOPTION OF EXHAUST AND EVAPORATIVE EMISSION CONTROL REQUIREMENTS FOR SMALL OFF-ROAD EQUIPMENT AND ENGINES LESS THAN OR EQUAL TO 19 KILOWATTS

FINAL STATEMENT OF REASONS

August, 2004

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

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Public Hearing Date: September 25, 2003
Agenda Item No.: 03-7-3

I. INTRODUCTION AND BACKGROUND

The Air Resources Board (ARB or Board) amended California's exhaust emission regulations for small off-road spark-ignition engines less than or equal to 19 kilowatts (kW) including more stringent exhaust emission standards. The Board also adopted new regulations to control evaporative emissions from off-road equipment using these engines. This category includes handheld and nonhandheld equipment such as string trimmers, leaf blowers, walk-behind lawn mowers, generators, and lawn tractors and the engines used in such equipment. The amendments and new regulations include the following primary elements:

Alignment of California exhaust emission standards for engines less than 50 cubic centimeter (cc) with the United States Environmental Protection Agency (U.S. EPA) standards;

Adoption of more stringent exhaust emission standards for engines greater than 80 cc;

Adoption of new fuel tank permeation standards for engines and equipment less than or equal to 80 cc;

Adoption of new permeation and diurnal evaporative emission standards for engines and equipment greater than 80 cc.

This rulemaking was formally initiated by the August 8, 2003 publication of a notice for a September 25, 2003 public hearing to consider the proposed amendments and new regulations. A Staff Report: Initial Statement of Reasons entitled "Public Hearing to Consider the Adoption of Exhaust and Evaporative Emission Control Requirements for Small Off-Road Equipment and Engines Less Than or Equal to 19 Kilowatts" (Staff Report) was also made available for public review and comment starting August 8, 2003. The Staff Report, which is incorporated by reference herein, describes the need for the regulation, and the importance with the proposal. The text for the proposed adoption of sections 2405.1, 2405.2, 2405.3, 2750, 2751, 2752, 2753, 2754, 2755, 2756, 2757, 2758, 2759, 2760, 2761, 2762, 2763, 2764, 2765, 2766, 2767, 2768, 2769, 2770, 2771, 2772, and 2773, title 13, California Code

of Regulations (CCR), along with the incorporated "California Exhaust Emission Standards and Test Procedures for 2005 and Later Small Off-Road Engines," the incorporated "TP-901, Test Procedure for Determining Permeation Emissions from Small Off-Road Engine Equipment Fuel Tanks," the incorporated "TP-902, Test Procedure for Determining Diurnal Evaporative Emissions from Small Off-Road Engines," the incorporated "CP-901, Certification and Approval Procedures for Small Off-Road Engine Fuel Tanks," and the incorporated "CP-902, Certification and Approval Procedures for Evaporative Emission Control Systems," was included in appendices to the Staff Report. The text of the proposed amendments to sections 2400, 2401, 2403, 2404, 2405, 2407, 2408, and 2409, title 13, CCR, and the incorporated "California Exhaust Emission Standards and Test Procedures for 1995-2004 Small Off-Road Engines" was also included in appendices to the Staff Report. A copy of Board Resolution 03-24 approving the regulatory action described above and the regulatory documents for this rulemaking are available online at the following ARB internet site: http://www.arb.ca.gov/regact/sore03/sore03.htm.

The Notice published in the California Notice Register on September 8, 2003 contained erroneous references to the sections proposed to be amended. However, both the posted and mailed notices contained the correct notices. A Notice of Correction was published in the California Notice register on September 22, 2003.

On September 25, 2003, the Board conducted a public hearing to consider the staff's proposal as described in the Staff Report. At the hearing, staff proposed several modifications to the regulations, most notably, an alternative set of exhaust emission standards and more stringent evaporative emission standards and requirements. Written and oral comments were received at the hearing.

At the conclusion of the hearing, the Board adopted Resolution 03-24, in which the Board approved the originally proposed regulations with the modifications presented by staff at the hearing and directed staff to work with commenters to finalize the regulatory proposals. In accordance with section 11346.8 of the Government Code, the Board in Resolution 03-24 directed the Executive Officer to incorporate the modifications to the proposed regulatory text approved by the Board, with such other conforming modifications as may be appropriate, and to make the modified text available to the public for a period of at least 30 days. The Executive Officer was then directed either to adopt the amendments with such additional modifications as may be appropriate in light of the comments received, or to present the regulations to the Board for further consideration if warranted in light of the comments.

The revised regulations and test procedures with the modified text clearly indicated, was made available to the public for a 30-day comment period in a "Notice of Public Availability of Modified Text" issued February 9, 2004. Several written comments were received during the 30-day comment period. After considering the comments, a second "Notice of Public Availability of Modified Text" was issued on May 14, 2004. Based on comments received, a third "Notice of Public Availability of Modified Text" was published on June 30, 2004. After considering the comments received on the third Notice, the Executive Officer issued Executive Order G-04-043, adopting the amendments and new regulations.

This Final Statement of Reasons (FSOR) updates the Staff Report by identifying and providing the rationale for the modifications made to the originally proposed regulatory text. The FSOR also contains a summary of the comments received on the proposed regulatory amendments during the formal regulatory process and the ARB's responses to those comments.

Incorporation of Test Procedures and Federal Regulations. The amended exhaust emission test procedures are incorporated by reference in CCR, Title 13, Sections 2401(a)(12), 2401(a)(14), 2402, and 2403(d). The test procedures document incorporates the procedures promulgated by U.S. EPA and are contained in 40 Code of Federal Regulations (CFR) Part 90.

The ARB documents are readily available from the ARB upon request and were made available in the context of this rulemaking in the manner specified in Government Code section 11346.5(b). The CFR is published by the Office of the Federal Registrar, National Archives and Records Administration, and is therefore reasonably available to the affected public from a commonly known source.

The test procedures are incorporated by reference because it would be impractical to print them in the CCR. Existing ARB administrative practice has been to have the test procedures incorporated by reference rather than printed in the CCR, as these procedures are highly technical and complex. They include the "nuts and bolts" engineering protocols required and have a very limited audience. Because the ARB has never printed complete test procedures in the CCR, the affected public is accustomed to the incorporation format. The ARB's test procedures as a whole are extensive and it would be both cumbersome and expensive to print these lengthy, technically complex procedures with a limited audience in the CCR. Printing portions of the ARB's test procedures that are incorporated by reference would be unnecessarily confusing to the affected public. The test procedures are available online at the following ARB internet site: http://www.arb.ca.gov/regact/sore03/sore03.htm.

The test procedures incorporate portions of the CFR because the ARB requirements are substantially based on the federal emission regulations. Manufacturers typically certify engines to a version of the federal emission standards and test procedures, which has been modified by state requirements. Incorporation of the federal regulations by reference makes it easier for manufacturers to know when the two sets of regulations are identical and when they differ. Each of the incorporated CFR provisions is identified by date in the ARB test procedure documents.

Fiscal Impacts. The Board has determined that this regulatory action will not create costs or savings, as defined in Government Code section 11346.5(a)(6), to any state agency or in federal funding to the state, costs or mandate to any local agency or school district whether or not reimbursable by the state pursuant to Part 7 (commencing with section 17500), Division 4, Title 2 of the Government Code, or other non-discretionary costs or savings to local agencies.

Consideration of Alternatives. The amendments and new regulatory language proposed in this rulemaking were the result of extensive discussions and meetings

involving staff and the affected engine and equipment manufacturers, and others. In the Staff Report, released and made available to the public on August 8, 2003, staff evaluated and rejected four potential alternatives to the proposed regulations: (1) take no action, (2) setting more stringent emission standards based on the use of zero-emission technology, (3) setting more stringent evaporative emission standards that would require a redesigned carburetor or fuel injection system, and (4) setting more stringent evaporative emission standards that would require the use of alternative fuels.

Under the first alternative, it is likely that few, if any, engine and equipment manufacturers would voluntarily incorporate emission control technology into their designs. The few manufacturers that may adapt the control technology would be at a competitive disadvantage compared to manufacturers electing to not incorporate the emission control technology. Therefore, this alternative would likely result in no emission reductions, except that the exhaust emissions benefits for handheld equipment associated with this alternative would still be achieved because the federal rule will apply. This alternative was rejected because it would not contribute to the State's control strategy to attain Federal and State ambient air quality standards for ozone.

Under the second alternative, small engine equipment standards would be set at zero, forcing the use of electric equipment. However, staff rejected this alternative because staff determined it would be very difficult at this time to switch over an equipment type to electric only. There are issues related to equipment performance, recharging/refueling time, size, and weight. The electric equipment available is generally designed for residential applications. Staff believes that electric equipment could not perform adequately in commercial uses, which typically require greater mobility than afforded by corded equipment and greater operating time than provided by current battery-powered units. On the other hand, corded or cordless electric units can be an ideal alternative to internal combustion powered equipment for residential applications. Staff considered a regulatory scheme of proposing a zero emission requirement for residential applications. However, the residential/commercial markets are not distinct, and it would be extremely difficult to enforce such a rule. The importance of electric equipment is primarily that it will remain available in some applications as a consumer choice when gasoline products experience modest price increases. Market shifts to electric would produce additional emissions benefits.

The third alternative evaluated included more stringent evaporative emission standards that would also require a redesigned carburetor or fuel injection system. Conceivably, carburetors could be redesigned to limit these evaporative emissions during equipment storage. Fuel injection systems are another type of technology that could be used to limit emissions because they do not vent to the atmosphere. However, staff rejected this alternative for the following reasons:

- It would have a significant impact on manufacturers by requiring a redesign of all fuel systems.
- It would provide less than one ton per day of additional hydrocarbon (HC) reductions in 2010.

- It may not be technically feasible for all engine applications.
- Cost-effectiveness is poorer than other alternatives.

The fourth alternative evaluated included more stringent evaporative emission standards that would require the use of an alternative fuel such as propane. Ideally, equipment that operated on compressed gas would have virtually no evaporative emissions. Staff rejected this alternative for the following reasons:

- It would have a significant impact on manufacturers by requiring a redesign of fuel just for California.
- It would provide two tons per day of additional HC reductions in 2010 at significantly greater costs.
- There are issues concerning propane distribution and availability.
- It may not be technically feasible for all engine applications.
- It is not the most cost-effective alternative.

Counterproposals from the Outdoor Power Equipment Institute (OPEI), Engine Manufacturers Association (EMA), Briggs and Stratton (Briggs), and American Honda Motor Company (Honda) were received following the release of the Staff Report. Staff seriously considered all of the alternatives proposed by industry. The counterproposals received were very similar in design, in that the manufacturers would be required to meet more stringent evaporative standards and less stringent exhaust standards compared to the proposed regulations in the Staff Report. As described in Comments 3, 8, 9, and 28 of this FSOR, manufacturers believed that these proposals were more technologically feasible and more cost-effective than staff's original proposal. The final regulatory text reflects the efforts of staff, the trade associations and a number of manufacturers and incorporates many of the suggestions provided staff throughout the rulemaking process.

For reasons set forth in the Staff Report, in staff's comments and responses at the hearing, and in this FSOR, the Air Resources Board has determined that no alternative considered by the agency, or that has otherwise been identified and brought to the attention of the agency, would be more effective in carrying out the purpose for which the regulatory action was proposed or would be as effective or less burdensome to affected private persons.

II. SUMMARY OF COMMENTS AND AGENCY RESPONSE REGARDING THE ORIGINAL PROPOSAL

At the September 25, 2003 hearing, nine people representing 15 public or private organizations provided written or oral comments. Additional written comments were received by the hearing date. Below is a listing of those persons and organizations that submitted comments.

Comments Received during the 45-day Public Comment Period and Board Hearing

Organization and Person Providing Comments	Written testimony	Oral testimony
David Raney, Honda	9/25/2003	9/25/2003
William M. Guerry, Jr., OPEI	9/25/2003	9/25/2003
Joseph Kubsh, Manufacturers Emission Controls Association (MECA)	9/25/2003	9/25/2003
Don Anair, Union of Concerned Scientists	9/24/2003	9/25/2003
Rick Bell, Dupont Company		9/25/2003
Jeff Arnold, Association of Rotational Molders International	9/23/2003	9/25/2003
Jim Medich, California Fire Chief's Association (CFCA)		9/25/2003
David L. Modisette, California Electric Transportation Coalition	9/24/2003	9/25/2003*
Bonnie Holmes-Gen, American Lung Association of California		
Todd Campbell, Coalition for Clean Air		
Kathryn Phillips, Center for Energy Efficiency and Renewable Technologies		
Gail Feuer, Natural Resources Defense Council		
Todd Dipaola, Steven and Michele Kirsch Foundation		
V. John White, Sierra Club		
Jed Mandel, EMA	9/25/2003	9/25/2003
Kent Walker, Citizen	8/21/2003	
Donald P. Bliss, National Association of State Fire Marshals (NASFM)	9/12/2003	
Chairman Tom Davis, Chairman Doug Ose, Member of Congress John Duncan, Member of Congress Edward Schrock, Member of Congress, Marsha Blackburn, Congress of the United States House of Representatives	9/23/2003	
Roger Gault, EMA	9/24/2003	
Senator Christopher S. Bond, United States Senate	9/24/2003	
Patricia M. Hanz, Briggs	9/25/2003	
James M. Lyons, Sierra Research	9/25/2003	

* Mr. Modisette's oral testimony on behalf of the American Lung Association of California, the California Electric Transportation Coalition, Center for Energy Efficiency and Renewable Technologies, Coalition for Clean Air, Natural Resources Defense Council, Steven and Michele Kirsch Foundation, Sierra Club, and Union of Concerned Scientists.

Set forth 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 whenever possible. Comments not involving objections or recommendations specifically directed toward the rulemaking or to the procedures followed by the ARB in this rulemaking are not summarized below.

There were several organizations that supported the adoption of the regulations. This included Honda, the American Lung Association of California, the California Electric Transportation Coalition, Center for Energy Efficiency and Renewable Technologies, Coalition for Clean Air, Natural Resources Defense Council, Steven and Michele Kirsch Foundation, Sierra Club, and Union of Concerned Scientists. Comments in support of the regulatory actions proposed are generally not summarized below, unless the comment has relevance to another comment or response.

The comments that are summarized below are divided into five subsections: (A) General Comments, (B) Comments on the Exhaust Regulations and Test Procedures, (C) Comments on the Evaporative Regulations, (D) Comments on the Evaporative Certification Procedures, and (E) Comments on the Evaporative Test Procedures.

A. General Comments

1. Comment: ARB needs to schedule a new public hearing to consider amendments to the small engine regulations because the August 8, 2003 proposed regulations are not practical or cost-effective and raise unresolved safety concerns. (OPEI)

Comment: Within the last two days, the ARB staff has proposed yet another concept for future emissions regulation of the small engine industry. If the Board chooses to consider that concept, or to make it the basis for regulatory action, the only proper way to proceed would be to direct the Executive Officer to prepare a new rulemaking notice, following public consultation meetings consistent with the requirements of the Government Code, and to schedule the matter for a public hearing in the future. Government Code § 11346.8 (e). The staff's new concept is too inchoate for the Board to assess its possible impacts on the industry, particularly the competitive effects of the proposal on California-based and U.S. companies.

If the Board chooses to take any action on the new staff concepts at this point, use of the post-hearing process allowed in other contexts by Government Code 11346.8(c) would not be appropriate here. If the new staff concepts are to provide a basis for regulatory action, they must be properly noticed for a public hearing in the manner specified in the Government Code. That notice should clearly state how the Executive Officer proposes to address the federal issues we discuss in these comments. (Briggs)

Agency Response: As noticed in the August 8, 2003 Notice the Board held a public hearing on September 25, 2003 to consider taking the actions described in the Notice. At the hearing, the Board considered and approved the staff's modifications to the original proposal in response to industry comments. By approving the modification, the Board found that the modified regulations are technologically feasible, cost-effective, and necessary. At the hearing the Board directed the Executive Officer to adopt staff's proposal, including those modifications made based on comments received during the 45-day comment period, and such other conforming modifications and technical amendments as may be appropriate, after making the modified regulatory language and additional supporting documents and information available for public comment for a period of 30 days. The Board further provided that the Executive Officer shall consider such written comments as may be submitted during this period, shall make such modifications as may be appropriate in light of the comments received, and shall present the regulations to the Board for further consideration if warranted.

As a result of the Board's directive, subsequent to the Board hearing, staff revised the regulations based on the proposed modifications approved by the Board and comments received during the 45-day comment period. Staff released the modified regulations for a 30-day comment period. Staff subsequently released two more modified versions of the regulations, with modifications based on additional comments received, each for a comment period of 15-days. As per the Board's directive, the Executive Officer has determined that the final regulations incorporate the public comments as appropriate, and therefore does not warrant another Board hearing.

Citing Government Code § 11346.8(e), commenters also state that the nature of the changes to the proposed regulatory text precludes ARB from proceeding with this new rulemaking and requires that ARB undertake a new rulemaking.
Section 11346.8(e) provides for an extended comment period in the event that new issues arise during the comment period. This provision has no applicability here. In any event, as noted above, the Board had already provided for an extended comment period of 30 days.

Commenters also cite §11346.8(c) stating that the Executive Officer is precluded from proceeding with noticing for public comment the modifications to the proposed regulations. The purpose of §11346.8(c) is to do precisely what commenters are seeking (viz.) the opportunity to comment on the changes to the original proposed text. However, even assuming that the changes proposed by staff constitute "new concepts" that in itself does not require that a new rulemaking process must be commenced. The changes proposed by staff and requested by the regulated community are sufficiently related to the original proposal and clearly come under the requirements of §11346.8(c). See also agency response to Comment #154.

2. Comment: Staff's recommendations are not technologically feasible and cost effective. OPEI and EMA submitted an industry counterproposal framework on September 11, 2003, which would achieve ARB's air quality goals in a much more cost effective and practical manner than staff's August 8th Regulatory Proposal. (OPEI)

Comment: EMA and its members have provided ARB with significant comments during the development of the proposed rule. In addition to the industry's own expertise, we have retained independent experts to assist us and the staff in understanding the technical issues, costs, and benefits associated with their proposal. As such, EMA has retained Harold Haskew of Haskew & Associates, David Harrison of National Economic Research Associates, Inc. (NERA), and Tom Darlington of Air Improvement Resources, Inc. (AIR). On the basis of the data, our review, and the input of recognized experts, it is clear that the staff's recommendations are not technologically feasible and cost-effective. As such, the Board should reject the staff's proposed rule. (EMA)

Comment: The approach taken by the Staff Report to comply with these provisions of the Administrative Procedure Act (APA) hardly complies with the intent of the statute. The only proposals evaluated in the Staff Report in addition to the staff proposal, would have either cost less (and provided less benefit) or cost more than the staff proposal. In July 2003, prior to publication of the Staff Report, Briggs presented a proposal that would have provided the same or greater benefits in comparison to the staff proposal, at least cost. ARB was obligated to include that proposal in the evaluation of alternatives.

Even after receiving additional information from Briggs after publication of the Staff Report, the ARB staff failed to include it in the analysis of alternatives. Under these circumstances, the record needs to be reopened and no final action at this time would be appropriate. See Government Code § 11346.8(e) and 1996 Guidance at 14. To the extent that the Board would choose to rely on an alternative proposal submitted by another party, the same procedural requirements apply. Briggs therefore requests that the Board comply with section 11346(e). (Briggs)

Agency Response: In developing the proposal, staff evaluated technology to control exhaust and evaporative emissions in test programs at SwRI, Automotive Testing Laboratories, and at ARB's laboratory in El Monte. The results from these test programs, as well as data supplied by manufacturers of emission control technology, are presented in the Staff Report. The data clearly support staff's finding that the proposed standards are technologically feasible.

Staff evaluated cost effectiveness based on estimates of lifetime emission reductions for typical off-road equipment. Cost estimates for the technology to control exhaust and evaporative emissions were based on estimates provided by manufacturers of emission control technology with an allowance for manufacturer and dealer markup. These cost estimates are presented in the Staff Report. Staff's conclusion was that its proposal was cost effective. In addition, staff modified its proposal to include the majority of industry's proposed revisions presented as a detailed proposal in September 2003. Therefore, the regulations approved by the Board incorporated much of the industry's proposal and its emission benefits.

In a July 29, 2003 meeting, Briggs presented to staff a directional concept of a compliance program as an alternative to staff's original program. Staff did not include this proposal in the Staff Report for the following reasons. First the Staff

Report was submitted to the Office of Administrative Law (OAL) on July 29, 2003. Since this filing date coincided with staff's meeting with Briggs, staff did not have the ability to make substantial changes to the Staff Report.

Additionally, the proposal by Briggs was presented as a concept. Staff required time to complete its own analysis of the proposal. Staff also required further data and analysis be provided by Briggs and its contractor as to the potential impact of their proposal. Briggs was asked by staff to provide additional clarifying information. However, the timing of this made it impossible to include the proposal in the Staff Report.

Staff however, did not subsequently dismiss the proposal by Briggs. In fact, staff utilized Briggs' proposal, as well as those by OPEI and EMA, which were very similar, as the basis for the compliance program that was eventually proposed by staff and adopted as the final regulation.

It should also be noted, as discussed in the next response, that some of the information provided by the regulated community was identified by the submitting party as confidential. Since it cannot be included into the rulemaking file, ARB could not rely on this data. At best this data was used to confirm the appropriateness of the data supporting ARB's action.

3. Comment: Briggs notes that not all the data, and in particular the cost data, on which the Staff Report appears to rely, are listed in the References for the Staff Report. This omission needs to be explained by the Board. Briggs submitted confidential cost information to ARB staff early in the informal discussions prior to commencement of the rulemaking process, but the staff chose not to rely on that data. Instead, the ARB staff decided to rely upon apparently confidential submissions from other sources, and this course of action is inconsistent with the Government Code. Section 11346.5(a)(9) of the Government Code requires the Staff Report to include: "A description of all cost impacts, known to the agency at the time the notice of proposed action is submitted to the office, that a representative private person or business would necessarily incur in reasonable compliance with the proposed action. If no cost impacts are known to the agency, it shall state the following: 'The agency is not aware of any cost impacts that a representative private person or business would necessarily incur in reasonable compliance with the proposed action.'"(Briggs)

Agency Response: In detailing the costs associated with the proposed standards, staff explained the sources for the information in the text of the Staff Report and provided detail as to how these costs were used. Staff relied on various sources for this material. Some of the material provided to staff was marked "confidential", and some material was not. As noted in the comment, Briggs did supply cost information to staff. However, this information was marked confidential, and thus staff cannot comment on its specifics or rely on it for purposes of this rulemaking because it cannot be made available to the public or included in the rulemaking file. Staff did not rely upon or use confidential information in the Staff Report. However, staff did compare the cost information supplied by Briggs with estimated costs when it compiled its cost analysis as a check against the data ARB did rely on.

4. Comment: Staff has failed to allow for the cost of replacing current side-valve engine production and supply in California to new engines that could provide a platform for the high-efficiency after-treatment. (Briggs)

Agency Response: The staff's estimates reflect the cost of compliance to the proposed regulations for the typical small off-road engine. The actual costs will vary for each engine and manufacturer based on the engine performance and emission characteristics.

5. Comment: ARB's proposal does not implement a coordinated certification program that avoids redundancy between exhaust and evaporative requirements. (EMA)

Agency Response: Where practical, staff has made every effort to avoid any redundancy in the certification process for exhaust and evaporative requirements. The revised regulations allow for a streamlined certification process for integrated (engine manufacturer provides fuel tank) equipment. For integrated equipment, the engine manufacturer is allowed to certify both exhaust and evaporative emissions and use a combined certification label. For engines less than or equal to 80 cc the proposal allows a combined certification application. However, the proposal does require separate applications for engines greater than 80 cc. Separate applications are needed because establishing exhaust and evaporative families results in different groupings of engines. One evaporative family may contain many exhaust families and vice versa. Although the proposal does require separate certification applications, they can be processed together, and one Executive Order may be issued. To eliminate redundant information the evaporative family classification criteria in the evaporative emission certification procedure, CP-902 was modified to reduce the number of characters defining an evaporative family to two. This allows a manufacturer the option to have a joint exhaust and evaporative family. The proposal was also modified to allow abbreviations on labels as long as they are disclosed in the certification application.

6. Comment: ARB has seriously underestimated the costs associated with both the proposed exhaust and evaporative emission reduction program. In addition, ARB has failed to properly consider the impacts of its proposed rule on small business in California; on state, local agencies and school districts; on jobs and business expansion; and, in general, has failed to properly consider the potential harm the rule will cause to California's already challenged economy. (EMA/OPEI)

Comment: The Staff Report and related documents have not substantially complied with the foregoing requirements to consider the economic impact of the regulations. Attached to these comments is an independent review of the economic impacts of the ARB staff's proposal that demonstrates that the proposal will cost thousands of jobs in California, will reduce the gross State product, and reduce household income. Under these circumstances a negative declaration would be impermissible. See Government Code § 11350(b)(2). ARB should have obtained a full accounting of the adverse impacts of the proposal on the California economy and businesses in this State. The abbreviated qualitative observations about the

potential impact of these regulations contained in the Staff Report do not provide a basis for the informed public debate and agency decision-making intended by the APA. (Briggs)

Agency Response: As part of the regulatory process, and in accordance with Government Code §11346.3, which requires staff to assess the potential for adverse economic impact on California business enterprises and individuals, staff prepared an Economic and Fiscal Impact statement using the required state form 399, which describes the estimated impact on businesses and job creation in California. Also, section 11346.5 of the Government Code requires staff to estimate the cost or savings to any state, local agency and school district in accordance with instructions adopted by the Department of Finance. According to form 399 and section 5.3 of the Staff Report, the regulations would have some impact, although not significant, on small businesses, dealers, and distributors if sales were to decrease due to the increased cost of equipment. In addition, the regulations would not result in a noticeable reduction in California employment because California only accounts for a small share of the total off-road equipment manufacturing jobs. The Staff Report also noted that some small businesses operating outside of California may leave the California market due to cost increases, which may result in a few jobs being eliminated.

7. Comment: The regulation will result in sharp increases in new engine and equipment prices in California. Much of that increase is unnecessary, because the alternative proposed by Briggs would have yielded the same or greater emissions reductions at a lower price per-unit product cost. (Briggs)

Agency Response: The modifications to the regulations contain essential elements of the Briggs proposal regarding exhaust emission standards and implementation dates. Therefore, the cost increases of the adopted standards should be similar to those noted by Briggs. The staff estimated cost increases for new engines and equipment for its own proposal are contained in the Staff Report. However, those costs are not directly comparable because they reflect the staff's original proposal. A cost estimate for the adopted exhaust standards has not been calculated. However, the cost would be less because the standards are less stringent. Information supplied by Briggs indicates that the modifications will result in lower cost increases.

8. Comment: The staff's proposal will force the production of new engines for the California market that could meet customer requirements and accommodate high-efficiency catalyst systems. If the proposal spreads to other states, the company will need to rebuild its plants outside the United States to meet the new requirements and remain competitive. Because U.S. EPA has adequate authority to control emissions from non-California engines, Briggs proposed a program that would be limited to the areas in California that need special measures. The ARB refused to support that approach. (Briggs)

Agency Response: The staff agrees that manufacturers would need to redesign their current engine lines to comply with the more stringent emission requirements adopted by the ARB, and that those engines would need to be tested to ensure they

meet the customer's needs. The staff's modified proposal provides the manufacturers with lead-time to accomplish these tasks before the new complying engines need to be built.

Staff cannot comment on Briggs' assertion that it is incapable of manufacturing engines to meet the proposed standards. The staff did not support the Briggs proposed language to limit the regulations to specific areas in California. The emission reductions associated with the regulations are needed in many parts of the state to show compliance with the national air quality standards. The Briggs language would have targeted clean engines to the South Coast Air Basin because it was the only area listed as extreme in complying with the one-hour ozone standards. However, other air basins in the state are in non-attainment with the national ozone air quality standards and in need of emission reductions. For example, since the commencement of this rulemaking, the San Joaquin Valley has been added to the list of areas in extreme nonattainment of the federal one-hour ozone standard (further demonstrating the need for statewide regulations).

Furthermore, the Board took the position that it did not want to consider language in its regulations that would limit the rights of other states to act in their interests and opt into the California emission control program. According to the 1990 Clean Air Act Amendments, other states may choose to accept the national requirements, or opt into the California emission requirements upon their showing of need. The Briggs language would have limited other states' options to address their own air quality needs.

9. Comment: The step that the Board is being asked to take today, which will result in the adoption of standards whose cost far outweigh their national benefit, is contrary to the intent of Congress when it created limited authority to adopt separate emission standards for off-road equipment. We therefore strongly support the current efforts in Congress to clarify the limits of California's authority in this regard. (Briggs)

Agency Response: The Board's authority to adopt emission control regulations for small off-road engines is clearly defined in state law as well as federal law. The California Clean Air Act of 1988 directs the Board to adopt emission control regulations for off-road engines. Furthermore, the 1990 federal Clean Air Act Amendments made it clear that California has authority to set regulations for new off-road engines except for engines specifically preempted by the federal Clean Air Act. With Congress' approval of the 1990 Amendments, they recognized the unique air pollution problems in California and the need for California to develop its own mobile source emission control program to comply with the federal air quality standards and to protect the health and welfare of its citizens. As with the authority to regulate on-road vehicles and engines, California's off-road engine regulations require authorization from U.S. EPA prior to their enforcement. Therefore, the Board has adopted regulations for new off-road engines since 1990 and has received authorization from U.S. EPA for those regulations.

10. Comment: ARB stands a much better chance of obtaining greater air quality benefits for California through a non-contentious Board hearing and subsequent

U.S. EPA authorization process if ARB limits these regulations to the California marketplace. (OPEI)

Agency Response: The staff agrees that a non-contentious hearing is preferred, which is why staff worked so closely with industry to develop the regulations the ARB adopted. Although the adopted regulations are not exactly the same as the OPEI proposal, they are very similar. Furthermore, the regulations adopted by the Board are limited to only the engines intended for California, since the Board's authority is limited to the state of California.

11. Comment: A Staff Report must address any overlapping or converging provisions of federal law. The APA thus provides that the notice of proposed action provide a "brief description of the significant differences" between the proposed action and "an existing comparable federal regulation or statute," and "the full citation of the federal regulations or statutes." Government Code § 11346.5(a)(3)(B). The August 8, 2003, publication in this rulemaking fails to comply with this requirement, and adverts to federal law and rules only to note what actions the ARB staff thinks the Board cannot take. There is no reference to the applicable federal authorities or an adequate description (at least in the case of wheeled product regulations) of the differences between the federal rule and the proposed California rules. (Briggs)

Agency Response: Consistent with Government Code § 11346.5(a)(3)(B), staff included in the Notice, and also in the Staff Report, a subsection entitled, "Related Federal Regulations." In this section staff discusses the existing federal regulations for small engines. Staff notes that the U.S. EPA has exhaust emissions standards for small engines used in nonhandheld equipment (e.g., wheeled) which are similar to California's Tier 2 standards. Staff notes that the 2005 and later federal hydrocarbon plus oxides of nitrogen ($HC+NO_x$) emission standard for engines below 50 cc is more stringent than California's Tier 2 emissions standard. Staff also notes that the U.S. EPA does not have evaporative emissions control regulations for small off-road equipment. The federal regulations for small engines are contained in 40 CFR, Part 90, which staff included in the Staff Report reference list.

12. Comment: An analysis by independent experts demonstrates that the staff's proposal will reduce employment in California by more than 1700 jobs. (Briggs)

Agency Response: Staff disagrees with the commenter's conclusion. The analysis submitted by the commenter is based on many economic assumptions and estimates, such as multiplier effects of spending changes and demand, that staff was unable to verify. The economic and fiscal impact statement submitted as part of the regulatory package predicts that small businesses may be impacted if sales decline. The statement also predicts that some jobs may be created to perform design, development, and compliance functions. A primary assumption in staff's analysis is that California consumers will pay for the added equipment cost with only a small drop in their disposable income.

13. Comment: As we have analyzed and worked with ARB's inventory model, we have noted several areas where the model used incorrect assumptions or could be

improved in other ways. For example, ARB's model includes erroneous assumptions for market growth and, therefore, populations. ARB's model also makes erroneous assumptions about how to calculate the benefits associated with the staff's proposed exhaust and evaporative emissions reduction programs. ARB should modify the emission inventory model to make it as accurate as possible. (EMA)

Agency Response: Staff worked closely with industry's consultants to provide complete access to all data, analyses and algorithms underlying the assessment of benefits associated with the exhaust and evaporative emissions reduction proposals. However, complete agreement on how to interpret and utilize available information was not always realized. In the end, the estimates of benefits made by ARB staff and industry were in reasonable agreement.

ARB staff contends that the two remaining issues relating to market growth and treatment of preempted equipment are more relevant in the context of the overall inventory rather than impacting the assessment of the benefit of the proposed standards specifically. As inventory staff are dedicated to producing the most accurate inventory practicable, staff is more than willing to continue a dialog with industry on these issues.

14. Comment: ARB should revise its Tier 2 baseline for estimating proposed Tier 3 cost effectiveness, because the baseline does not reflect the Premium Plan. (Briggs)

Agency Response: The staff believes that the Off-Road emissions inventory reflects the staff's best estimate of emissions from engines currently certified in California which includes those engines complying with the premium plan provisions described in section 2403(c). During the development of the staff's proposal, the inventory staff reviewed the current small engine certification and production line data to verify that the Tier 2 emission factors were reasonable. Staff also had several discussions with EMA's technical representative regarding the basic emission factors. The EMA's technical representative did not provide sufficient information to suggest that staff's estimates were inappropriate. The Tier 2 emissions factors used in the inventory result in a deteriorated value below the Tier 2 emission standards. This deficit is a result of the requirements in the current regulations and is a reflection of the current engine certification and production data. The Premium Plan is a provision in the regulations directed at the largest manufacturers of engines with displacement between 65 and 225 cc. They must certify and produce engines for sale into California cleaner than the exhaust emission standards require to provide for emission reductions equal to or greater than those that would have been achieved by staff's proposed emission standards in its staff report for consideration at the March 1998 hearing.

15. Comment: The response rate of the survey used in the small engine proposed rule inventory analysis was very low, calling into question the demographic balance of the respondents, and the methods ARB used to ratio the survey equipment populations up to the statewide level. (Briggs)

Agency Response: Under a grant from the U.S. EPA, staff conducted a survey of California households to determine the population and usage of lawn and garden equipment. A total of 15,700 surveys were sent to randomly selected households. A subset of survey respondents also agreed to install instrumentation capable of electronically recording the date, time and duration of usage, on their lawn and garden equipment. A total of 2,169 completed residential surveys were received, a response rate of about 14%. Staff then normalized the equipment population by the number of households represented in the surveys in order to estimate the percentage of households with lawn and garden equipment by type and fuel utilized. Staff applied these percentages to the number of California households as reported in census data to estimate the total lawn and garden equipment population. In addition, in the course of the study, 224 event loggers were installed on various pieces of lawn and garden equipment for approximately two weeks. Because the equipment monitoring was staggered across several months, an estimate of annual average operation, as well as daily and seasonal variations in usage could be determined. When updating the inventory, where insufficient information was available to suggest a change in the estimate of annual hours of operation, the previous assumption of hours per year operation was retained.

Staff believes that the response rate to the inventory survey conducted is adequate to update the population and activity estimates and the OFFROAD model where necessary. Since a dramatic difference was observed in equipment population from the previous estimates and the survey estimates, staff decided to seek another independent source of information to either support or refute the new assumptions. Staff analyzed historic nationwide sales data obtained from OPEI covering several types of lawn and garden equipment and the estimates of their useful lives. Staff assumed a constant California sales fraction of ten percent of the nationwide production for all lawn and garden equipment, (based on data supplied by OPEI), and using the model's current assumptions of age distribution and attrition, the resulting population estimates were compared and contrasted.

The above analysis confirmed staff's initial decision to use the results of the survey as the basis for updating the equipment population estimates within the OFFROAD model. The population estimates are more direct in their derivation, and there is better agreement between equipment manufacturer's sales data and the survey data for most categories of equipment.

16. Comment: Subsequent analysis of California equipment sales fractions by the OPEI indicates that for most equipment, the California sales fractions are much lower than 10%. (Briggs)

Agency Response: During the development of the updated inventory estimate, OPEI provided staff with data which suggested that a California sales fraction of ten percent of the nationwide production for all lawn and garden equipment, (with the exception of snow blowers where one percent of sales was assumed), was appropriate. After staff developed the new survey and released the results to OPEI, OPEI informed staff that it believed the California sales fractions for equipment were actually lower than ten percent of national sales. Staff requested OPEI to submit data to support this new claim, but no such data were received from OPEI. In

addition, sales of ten percent appeared to be consistent with the survey results (see agency response to Comment 16). Therefore staff retained the sales fraction of ten percent.

17. Comment: Manufacturers of equipment powered by Class II engines will require additional lead-time for small-volume and problematic riding equipment. The entire exhaust system on most riding products must be custom redesigned and integrated by the equipment manufacturer into the unique geometry and shape of the equipment. (OPEI)

Agency Response: The regulations provide about four years of lead-time to incorporate exhaust and evaporative system changes into Class II engines and equipment. Staff believes that the current effective date of the regulations for Class II engines (Model Year 2008 and Later) is sufficient because control technology is currently available. As stated in the Staff Report, Kohler already has an engine certified in California for use in riding mowers that is equipped with a catalyst system.

B. Comments On The Exhaust Regulations And Test Procedures

Catalyst system

18. Comment: Staff has not conducted any studies on the effects of the exhaust emission reduction systems identified in the SwRI test program regarding the applicability of these systems in equipment. (OPEI)

Agency Response: We acknowledge that staff had not conducted emission testing of the catalyst systems installed in equipment. The staff's test efforts focused on the "proof of concept" of applying a catalyst system on clean current engines, testing various parameters to gain knowledge of changes in development to use in equipment design. Staff did offer during its regular industry-ARB testing meetings to work together with industry on equipment issues. Staff offered to participate in any industry sponsored equipment – catalyst test programs. Industry did not put such a project together. Finally, much of the effort needed to make the catalyst system operate on equipment is the responsibility of product engineers working for either the engine or equipment manufacturers. To account for this, the ARB regulations provide years of lead-time for such development.

19. Comment: The use of high efficiency catalyst systems raise many concerns, such as the extreme temperatures, oil carryover rates, limited space available for the converter, and the physical location of the converter relative to the engine all contribute to make durability a significant technical challenge for small engine applications. The heat associated with the use of high efficiency catalysts and the "packaging issues" associated with installing engines and catalysts in equipment, especially where that equipment has unique design constraints related to its functionality, lead to substantial concerns regarding potential fire safety issues. Engine and equipment manufacturers will not produce an unsafe product. As such, engine and equipment manufacturers, by necessity, will have to do whatever is required to assure that their products are safe and do not pose any potential fire

hazards. That will require major redesigns of equipment including the use of heat shielding and the need to physically separate and geographically relocate parts of the engine and equipment. The end result will be enormous costs and lead-time that ARB simply has not taken into consideration. In addition, ARB needs to address such real world issues as noise attenuation, heat management, and safety. (EMA)

Comment: The Staff Report does not present all the safety data and information presented by numerous experts at the July 2, 2003 ARB public workshop in Sacramento, as well as recent letters from various fire and safety organizations which document technical reasons why ARB must relax the exhaust standards in its August 8th Regulatory Proposal. In fact, the eight hours of testimony at the July 2nd workshop provides a more accurate and complete administrative record (particularly on catalyst-related heat and safety issues) than the relatively short and incomplete summary of issues presented in the Staff Report. First, the Staff Report could be misinterpreted as implying the ARB/SwRI test program showed only a relatively modest temperature rise in the tested catalytic exhaust systems. However, at the July 2nd workshop, manufacturers suggested (through thermal imaging) that SwRI did not test the hottest areas around the catalyst, which generate the most significant heat. Unfortunately, SwRI only measured the much cooler air at a different part of the exhaust stream. This undermines the credibility of SwRI's heat testing and related conclusions.

Second, in the Staff Report, ARB cites to only "one set" of flawed test results from the SwRI study which did not show a significant temperature rise on that one catalyzed engine. However, at the July 2nd workshop, manufacturers documented that even ARB's understated heat measurements showed temperature rises of over 350°F for several tested catalyzed exhaust systems.

Third, subsequent to the July 2nd workshop, California Fire Chiefs Association (CFCA), National Association of State Fire Marshals (NASFM), and the U.S. Consumer Product Safety Commission (CPSC) each submitted correspondence to ARB objecting to the proposed regulations because of the unresolved heat and safety issues. These organizations expressed concern that the proposed regulations would: (1) create substantial safety risks; and (2) that ARB has neither addressed, nor even sufficiently acknowledged these risks. As the NASFM explained in their September 12, 2003 letter, "NASFM specifically urged the ARB Board not to proceed with the proposed regulations at this time, given the high probability that lives and property will be at risk if very hot catalysts are required before a careful determination by safety experts that the proposed technologies can be safely implemented." The NASFM went on to state, "Based on our review of the ARB staff's proposal, we believe ARB staff has still not identified, much less addressed, numerous unresolved safety issues." The CFCA similarly stated, "The combination of leaking fuel from overly pressurized tanks and excessive temperatures from hot catalysts is a disaster waiting to happen." CFCA noted that the catalysts contemplated by the proposed regulations would increase both homeowner fires, as well as fires in California wildlands.

ARB staff has failed to include or cite to these extensive written comments anywhere in the Staff Report, presumably because many of these letters were submitted after

or just before the August 8th Staff Report was released. The Board should closely consider the concerns raised by the safety experts and agree with the safety expert's conclusions that it would be totally inappropriate for ARB to adopt the exhaust standards in ARB staff August 8th, 2003 proposal. (OPEI)

Agency Response: Most importantly, it should be noted that the comments and the July 2, 2003 discussion regarding safety were aimed at the staff's original exhaust emissions proposal. Although staff believes that its original proposal was technologically feasible and safe, as discussed in detail below, the adopted exhaust emission standards are less stringent and may be met with the use of low to medium efficiency catalysts or engine redesign. Thus, the issues of high temperature should no longer be relevant. As stated by the commenter, in addition to prior workshops and numerous meetings with industry, staff held a workshop on July 2, 2003 at which there was significant time devoted to public testimony regarding the development of staff's proposal. In its development of the Staff Report, staff made every attempt to provide a summary of the comments and concerns raised by industry and address those comments. Workshops are an integral part of ARB's efforts to understand the impacts of its proposed regulations on the affected community.

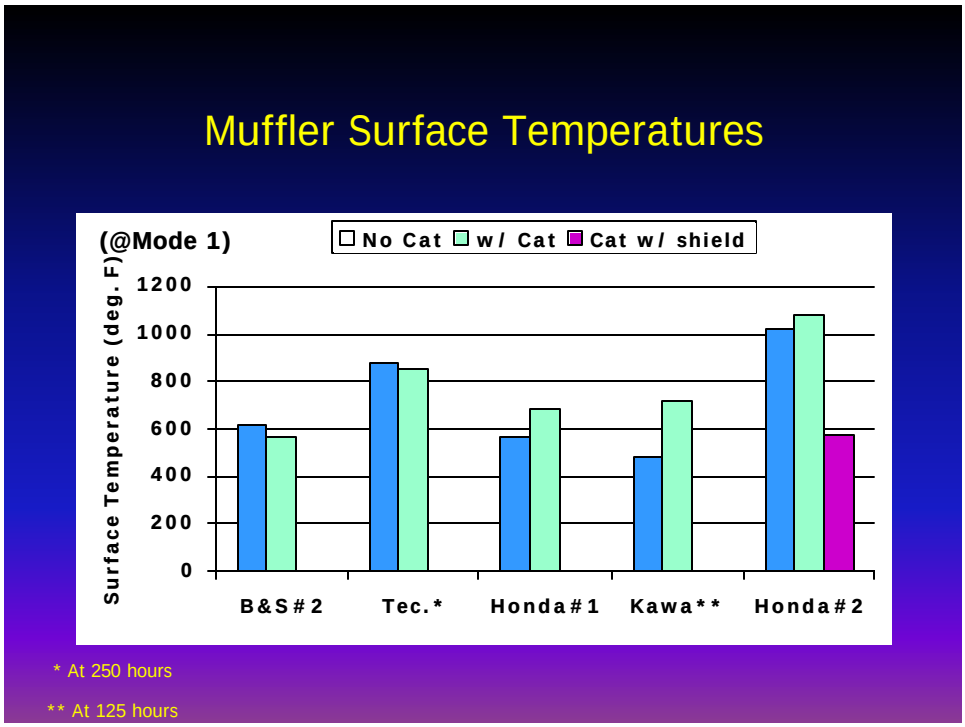
With the new exhaust emission standards, manufacturers may use any control technology they develop as long as the engine's emission levels comply with the standards. Over the years, manufacturers have made improvements to engine design and have developed innovative technologies to comply with the emission standards. One way manufacturers may choose to comply with the new exhaust emission standards for engines above 80 cc (e.g., engines used in lawn mowers) would be to use a catalyst system, just as many manufacturers have chosen to produce engines which use catalyst systems to meet the current standards for engines at or below 80 cc (e.g., string trimmer engines). When developing the regulations and standards, staff took into account the necessary lead-time to perform such efforts. As a result of comments received during the July 2nd workshop, staff increased the proposed lead-time for the exhaust emission standards, and the implementation dates in the adopted regulations are identical to those submitted by EMA and OPEI in their proposal.

Oxidation of HC and carbon monoxide (CO) is an exothermic reaction, and the heat it generates, along with any enleanment of the air-fuel ratio to further reduce engine out emissions could lead to increased exhaust gas temperatures and catalyst/muffler skin temperatures. Manufacturers have raised concerns over safety due to a potential for increased heat generation from the use of a catalytic converter, which could occur if additional mitigation measures are not performed. Manufacturers have noted potential for operator injury from burning, turf browning after engine shutoff in lawn care applications, fire during refueling, and melting of fuel tanks and other plastics incorporated in the equipment. While the American National Standards Institute (ANSI) temperature guidelines vary, OPEI has specifically indicated to staff that individual manufacturers frequently prefer to adhere to heat exposure temperature limits in the range of 150 degrees Fahrenheit. A study conducted by the San Dimas Technology and Development Center, which is a unit of the United State Department of Agriculture Forest Service, indicates that grass

clippings can ignite if they come into contact with surfaces above 518 degrees Fahrenheit.

In response to issues concerning the potential for high exhaust temperatures, the ARB sponsored testing at SwRI included many temperature readings of both current engine designs and the catalyst equipped prototype designs. SwRI engineers used good engineering principles in determining where to place the thermocouples to appropriately measure muffler/catalytic converter skin and exhaust temperatures. Testing at SwRI indicated existing muffler skin temperatures already reached levels in excess of 500 degrees Fahrenheit for walk behind mowers. Currently, manufacturers use muffler heat shields to prevent contact with the muffler. Thus, in response to the commenter's concerns, there are no technological barriers, which would prevent manufacturers from using similar shielding for engines with mufflers containing catalysts. As part of the SwRI test program, the catalyst system equipped engines were tested for their full useful life to ensure that the engines and catalyst systems would maintain emissions for the life of the engines, would be durable, and remain within the manufacturer specifications. The testing showed that the catalyst systems generally met these requirements.

Staff acknowledges that, as mentioned above, the addition of a catalyst system, without further system development, could lead to an increase in the catalyst/muffler surface temperature, and that manufacturers will need to address this potential issue when developing a catalyst system to meet the new standards. But, as indicated by MECA and individual catalytic converter/muffler manufacturers, these issues are not insurmountable, and, as has been done with many handheld two-stroke engines with which many of the same temperature issues existed, they can be adequately addressed in the design of the engine control system. For instance, many of the temperature issues can be addressed by incorporating heat shields and/or catalyst insulation. As mentioned above, many manufacturers already currently protect mufflers with shields and other insulating material. One set of tests performed at SwRI with a catalyst equipped engine showed that the temperature of the catalyst shield was significantly lower than the surface of the catalyst/muffler, with an average reduction of 490 degrees Fahrenheit at 100 percent load. The temperatures observed on the catalyst shield were in the range of the temperatures observed during the ARB and SwRI testing on the stock mufflers (i.e., without a catalyst) noted above. (The chart below was presented to the Board at the September 2003 hearing and shows temperature data observed during the SwRI testing.)



The above figure shows that in some cases, the addition of the catalyst did result in slightly increased muffler surface temperatures. Note that for the Briggs engine ("B&S #2") and the Tecumseh engine, it would appear that the muffler surface temperature actually decreased with the addition of the catalyst. While this is possible depending on how the engine was adjusted prior to testing, staff believes it is more likely due to test variability. It should also be noted that the catalyst efficiencies observed in the SwRI test program are much higher than those expected to be required to meet the adopted emission standards. Specifically, in the SwRI program, catalyst efficiencies were shown to be as high as 70 percent. . The catalysts used by manufacturers to meet the adopted standards would likely have efficiencies on the order of 35 percent. This difference is significant because if the required catalyst efficiency is decreased, the exothermic reaction correspondingly decreases which in turn results in a much smaller increase in exhaust temperatures. Staff contends that this should eliminate any significant safety concerns raised by industry. This was confirmed by Honda in its testimony to the Board in September 2003 in support of staff's proposal. In part, Honda testified that "We think that the modified exhaust emissions proposal presented today of 10 and 8 grams will make it possible to have an exhaust system with a lower risk of being a fire safety hazard. It is manageable today on our current products. And with this revised proposal it will be manageable on the future engines. The revised proposal will also be significantly more cost-effective air quality improvement for California. This modification has been a positive and very helpful change. While there is always risk, even on today's products, due to their diversity of use or even misuse in their application, we do not believe that the staff proposal presented here today for future exhaust emission standards will have a significant impact on the safety of our future engines in comparison to current engines or products." Thus, while staff believes that in some cases, the increase in temperature will be small, on the order of less than 50 degrees Fahrenheit, in other cases, it may be somewhat higher. Briggs provided a presentation at the July 2, 2003 public workshop which showed a peak surface

temperature on a catalyst/muffler of about 1,100 degrees Fahrenheit. However, it is difficult to make any conclusions regarding this analysis as specific details regarding the system were not provided, such as the efficiency of the catalyst, what the peak temperature would be with a shield installed, what the peak surface temperature of the original muffler was, or whether or not a heat shield would be provided on the retail version of the engine.

In addition to heat shielding, some manufacturers will likely choose to use a systems approach to designing an engine that meets the adopted standards, by first reducing the engine out emissions. This could be done by optimizing the fuel system, or redesigning the cylinder and/or piston, before designing for a catalytic converter, if necessary. Any engine modifications made that result in reduced engine out emissions will reduce the burden on the catalyst, thereby allowing the manufacturer to use a less efficient catalyst (thereby minimizing exhaust temperatures) to meet the adopted standards.

Although staff believes that its original proposal can be feasibly met in a safe manner, staff repeatedly met with engine manufacturers and industry association groups prior to the September 2003 Board hearing and requested that the manufacturers provide proposals that would address their concerns regarding staff's original proposal. Staff received proposals from Briggs, Honda, OPEI, and EMA. To further address the manufacturers' concerns regarding safety, the final regulations closely reflect these proposals. In fact, after the September Board hearing, OPEI stated on their web site, that after, "proactively working with the (ARB) staff," the proposals presented by EMA and OPEI were, "generally adopted by the Board."

Staff believes that the industry proposed exhaust emissions standards fully address the issue of safety since they were based on industry's own proposals. The adopted exhaust standards reflected in the industry proposals are less stringent than those originally proposed by staff, and thus reduce the potential for increased heat generation by the addition of a catalyst system that may be used to meet the new standards. One would assume that the engine manufacturers and industry associations would only propose standards that they believe they could comply with safely. To this point, as mentioned above, this was confirmed by Honda's testimony at the September 2003 Board Hearing.

The commenter states,correctly, that staff received letters from CFCA, NASFM, and CPSC outlining issues with regard to safety and the staff's proposed new standards. With regard to the CFCA letter, it was written prior to the September Board hearing (at which time staff modified its proposal to include new standards which are less stringent than those originally proposed). Subsequently, as a result of the modification to the proposal, at the September Board hearing Jim Medich, representing the CFCA, acknowledged the lessening of any risk due to the adoption of the less stringent industry proposed exhaust standards included in the final regulations, and that these standards appear to address their safety concerns. Subsequent correspondence with CFCA has confirmed their support for the regulation moving forward and their desire to work with ARB on a catalyst safety study that ARB is scheduled to conduct.

Also noted by the commenter, staff received correspondence from the NASFM. However, upon repeated requests from staff, the NASFM failed to set up a meeting with staff to further discuss the implications of staff's modified proposal. In any event, a letter received by staff on October 15, 2003 from the California State Fire Marshal (who is a member of NASFM) stated, "I have reviewed ARB's action and do not share the concerns discussed in the NASFM letters. The ARB has adequately responded to the issues raised by NASFM."

With regard to the CPSC letter, the commenter is incorrect in stating that the letter raised objections to the proposed regulations. Rather this letter only asked to meet with staff to discuss the proposal and any potential for safety concerns. Staff met with CPSC prior to the Board hearing to discuss the proposal and ARB's plan to conduct a catalyst safety study. CPSC noted that they would further review the regulation and provide comments regarding concerns with safety if they believed they were warranted. Staff received no further comments from CPSC and therefore believes that their concerns were adequately addressed by the modifications to the original proposal and the upcoming catalyst safety study.

In summary, external heat management issues are not new. Every engine that has been equipped with a catalytic converter, starting in 1975 when the device was first applied to passenger cars, has had to address the issue of increased exhaust system temperatures, and concerns with potential burns and fires. For instance, motorcycles and mopeds, which manufacturers claimed were not suitable for catalytic devices because of the threat of operator burns, are now equipped with catalysts. Catalysts are also now appearing on some lawn and garden handheld equipment, despite the concerns raised by industry about fires and operator safety. The engineering techniques to deal with these hot surfaces also continue to progress, but they are straightforward - reduce the heat load, insolate the heat source, isolate the heat source, and actively cool. We are confident that the engine/equipment manufacturers will be able to address the challenge of hot surfaces using similar approaches as others who have faced the same challenges three decades ago. In order to confirm its position, ARB has committed to perform a safety study of catalyst systems on small engines prior to the implementation of the new standards. In addition, as part of the authorization process, the U.S. EPA is required to perform its own evaluation of any safety issues.

Again, it's important to note that the regulations approved by the Board are not expected to require the use of high efficiency catalysts as suggested by the manufacturers. The exhaust emission standards approved by the Board will likely require manufacturers to improve engine designs and/or use low efficiency catalyst systems to comply. The temperature issues noted should be resolved or minimized with the adopted standards.

20. Comment: As part of the process of developing the exhaust emissions component of the proposed rule, ARB staff undertook a demonstration program at SwRI. EMA and its members offered to assist ARB staff in developing the test protocol, in providing and/or securing engines for testing, and in analyzing the test results of the demonstration program. ARB staff declined to accept EMA's offer to assist in the development of the test protocol or in securing product for testing. ARB

did provide EMA and its members with periodic test report and we have provided ARB and SwRI feedback and comment on the SwRI test program. Of particular note, despite repeated requests, ARB declined to provide information on the catalysts that were being tested in that program, including their manufacturer; design (other than basic dimensions and cell density); loading characteristics, etc. ARB staff have stated that the SwRI demonstration program was limited in scope to confirm that the use of a catalyst and the use of secondary air systems could achieve a 50% reduction in exhaust emission levels from the Tier 2 emission limits. The 50% reduction limit was arbitrarily set and not based on any data or analysis. (EMA)

Agency Response: Staff disagrees with EMA's comments regarding EMA and its members' involvement with the development of the test program at SwRI. During (and after) the initial development of the program, staff repeatedly provided opportunity for EMA to provide comments on the test program. Twice (on November 20, 2001 and March 4, 2002), prior to the beginning of the test program, staff sent a letter to EMA (and other affected industry associations) containing an outline of the test program, and requesting comments or questions be directed to staff. The March 4, 2002 letter contained an updated test program based on comments staff received to the November 20, 2001 letter. Staff also provided EMA members the opportunity to participate in the testing of their engines. When a manufacturer's engine was being developed for catalyst installation and tested at SwRI, representatives for that manufacturer were given the opportunity to observe and assist SwRI staff in that testing. Many manufacturers did just that. Furthermore, as mentioned, staff provided monthly reports to EMA, OPEI and other interested parties regarding the outcome of the ongoing testing. In connection with these reports, staff held meetings with EMA and its members, which occurred for the most part monthly, in which these reports where discussed. These meetings directly provided EMA and its members a forum to comment on the test program as it was ongoing.

It is true that originally staff chose to purchase engines instead of allow EMA members to supply engines for the test program. Staff did not simply reject EMA's offer. Instead, staff wished to purchase the engines "off the shelf" in order to obtain engines that are available to retail customers. Many of the engines used in the test program were obtained this way. However, when situations arose staff asked a manufacturer to supply an engine. For instance, the Honda walk-behind mower engine used in the test program was supplied from Honda. In another instance, Kawasaki helped staff procure a replacement engine.

In most instances MECA members through MECA provided the catalysts used in the test program. In the monthly test reports supplied to EMA by staff, staff provided information on the catalyst specifications. However, because these catalysts were prototypes, and not produced for market, the catalyst suppliers deemed certain information, such as loading characteristics, confidential. Therefore, staff did not publicly provide this information.

With regard to the "arbitrary" 50 percent limit comment, the test program was designed to show that the emissions from small off-road engines could be reduced

further on current production engines using a catalyst system, and that these emissions could be reduced throughout the useful life of the engine. There are many engines in off-road and on-road categories that already utilize catalytic converters to reduce emissions. In many instances these catalytic converters are used to reduce the engine out emissions by much more than 50 percent. However, staff acknowledges that there are unique characteristics (such as cost, fuel system designs, etc.) associated with small engines, that make emission reductions of levels achievable, for example, with passenger cars equipped with over 99 percent efficient catalytic converters, challenging. Therefore, as a result of these challenges, using good engineering judgment, staff believed that a 50 percent emission reduction was achievable with these small engines using catalyst technology. Thus the test program was designed with this reduction goal in mind. However, the test program was not limited to 50 percent and, as was seen in the test results, reductions of more than 50 percent were often observed.

21. Comment: The study at SwRI was limited in scope to merely confirm that with the use of a catalyst and the use of secondary air system, 50% exhaust emission reductions could be achieved. Catalysts were selected for the program to achieve those goals. It should be noted that there does not appear to be any relationship between the costs for the catalysts utilized at SwRI and the costs estimated in the Staff Report for the use of catalysts. It is clear that the catalysts selected and tested at SwRI represent very large catalyst volume in relation to the engine displacement. (EMA)

Agency Response: The SwRI test program was designed to determine whether catalyst technology could be applied to small engines to provide at least a 50 percent reduction in HC+NO_x emissions throughout the engines' useful lives. Catalyst cost estimates provided by staff in the Staff Report were not directly reflective of the catalysts used by SwRI in the test program because the catalysts used by SwRI were prototypes. Catalyst cost estimates provided in the Staff Report were based on information provided to staff by catalyst suppliers based on what they believe will be the cost of catalysts needed to comply with the proposed standards. Given the lead-time provided, staff believes that manufacturers will be able to develop a catalytic converter system(s) that is tailored to their specific engine design(s). Thus, with regard to the "large catalyst volume" comment, the final catalyst product will be much more streamlined than the prototypes used by SwRI.

It should also be noted that the costs associated with standards adopted by the Board would be less than the costs contained in the Staff Report, because the exhaust standards are less stringent. Manufacturers should be able to comply with less efficient catalysts (less precious metals) or engine improvements.

22. Comment: The staff inappropriately characterizes engine manufacturers' experience with low efficiency catalysts on European product and handheld equipment catalysts as an indication of the acceptance of catalyst technology. However, the proposed rule would result in the use of catalysts that are significantly different from either of these types. (EMA)

Comment: The existing use of catalysts on handheld engines does not support ARB's proposed standards for wheeled products. (OPEI)

Agency Response: On page 26 of the Staff Report, staff notes that there have been and continue to be small engine equipment with catalytic converters in Europe and that low efficiency catalysts have been incorporated onto Briggs lawn mower engines in Europe. However, staff does not make the claim that the use of catalysts in Europe is a direct indication of acceptance of the use of catalyst technology in California. In fact, on page 89, staff notes that even though catalysts have been used in Europe, some manufacturers have expressed concerns with their use on nonhandheld equipment in California. Staff subsequently includes discussion regarding these concerns. Staff agrees that the adopted exhaust emissions standards would likely require the use of catalytic converters with a higher efficiency than those used in Europe or on handheld equipment. However, the adopted standards reflect exhaust emission standards proposed by industry, and thus reflect catalytic converter efficiencies that industry believes they can achieve. Please also see agency response to Comment 19.

23. Comment: California Chiefs would like more time to study the new changes to see how their impacts would affect fire safety. We would welcome the opportunity to work with other safety experts to address the unsolved safety issues to ensure that the citizens of California are getting not only the best environmental policy, but also the best safety policy we can give them. (CFCA)

Agency Response: The California Chiefs will have several years to fully study the revised exhaust emission regulation because the standards affect 2007 and later model year engines. Furthermore, the Board directed staff to study the safety impacts of the revised regulations. Staff will be contracting out the project to safety experts. The project will bring together the interested parties and safety experts.

<u>Recall</u>

24. Comment: The only options provided for the Executive Officer are to withdraw the determination of nonconformity or force a mandatory recall. The Executive Officer must have alternatives or flexibility to allow other options. In addition, the ARB must recognize that mandatory recalls are not a realistic or cost-effective enforcement tool. (EMA)

Agency Response: Staff has explained in the Staff Report that recall is not the only option. Sections 2405.2(a) and 2405.3(a) specifically allow the manufacturer to submit its plan for remedying a nonconformity for the Executive Officer approval, which is not limited to a recall of engines. Under these provisions, if the ARB determines that a substantial number of engines within an engine family, although properly used and maintained, do not conform to the regulations when in actual use, the manufacturer will be required to remedy the problem and conduct a recall of the noncomplying engine family. However, the ARB recognizes the practical difficulty in implementing an effective recall program as it would be difficult to properly identify the owners of equipment using small engines without an off-road equipment registration program in place, and it is also questionable whether owners or

operators of such equipment would respond to an emission-related recall notice. The regulations accordingly allow manufacturers to propose remedial measures to address potential non-compliance situations. In evaluating potential alternatives, ARB would consider those alternatives which (1) represent a new initiative that the manufacturer was not otherwise planning to perform at that time and that has a nexus to the emission problem demonstrated by the subject engine family; (2) cost substantially more than foregone compliance costs and consider the time value of the foregone compliance costs and the foregone environmental benefit of the subject family; (3) offset at least 100 percent of the exceedance of the standard or FEL; and (4) are able to be implemented effectively and expeditiously and completed in a reasonable time. These criteria would function as ground rules for evaluating projects to determine whether their nature and burden is appropriate to remedy the environmental impact of the nonconformity while providing assurance to the manufacturer that ARB would not require excessive projects.

Trans-shipment

25. Comment: The use of the phrase "introduction into commerce" in section 2403(b)(1) and section 90.103(a)(1) of the test procedures should be changed to "offered for retail sale or sold to ultimate consumer" to prevent sales to OEM's for equipment intended to be ultimately sold outside of California and trans-shipment of product from being covered by the regulations. (EMA/OPEI)

Agency Response: The small engine regulatory language is modeled after the motor vehicle statutes, which also do not contain exculpatory provisions. Staff believes that one of the major reasons that the small engine program is effective is the element of strict liability (as in the motor vehicle statutes). This program was initially approved by the Board in December 1990 and applicable to engines produced on or after January 1, 1995. The commenters failed to cite even one instance where the current regulations have been applied improperly. Every effort is made to ensure that penalties are applied appropriately given the facts of each investigation. Having this enforcement discretion available to staff to apply the regulations appropriately on a case by case basis insures against all the "potential" wrongs that industry has commented about from happening. Having a strong regulation is in fact a benefit to industry by minimizing the competitive disadvantage to complying firms of competing against noncompliant products.

Cost

26. Comment: Staff has substantially underestimated the real world cost associated with the proposed catalyst-based exhaust standards. Staff should not rely on unsupported claims from MECA or the very different experience of handheld manufacturers. (OPEI)

Comment: Cost estimates for catalyst systems provided to the staff by MECA do not include all features of the catalyst as applied in a "system" including the design, material, and other changes to the exhaust system required for the catalyst to function for the design life of the exhaust system. The estimated costs for the secondary air system are also significantly understated. (EMA)

Comment: ARB's cost estimates for exhaust emission control were apparently based on information obtained from vendors of exhaust emission control system and their trade association, and for all the record shows, the estimates from those sources were not prepared at the same level of detail as the NERA estimates. This is contrary to ARB's recommended practice in estimating costs. (Briggs)

Agency Response: The estimated cost increase of equipping a current engine with a catalyst is based on information provided by engine and equipment manufacturers, MECA, and U.S. EPA. As stated in the Staff Report, cost estimates were based on an engine family with annual sales of approximately 10,000 units for engines between 80 cc and 225 cc, and approximately 2,000 units for engines 225 cc and above. Additional costs could result from other engine integration modifications such as the addition of a passive air injection system, carburetor adjustments, and heat shielding. These additional technologies were also included in the cost analysis to provide a conservative estimate, since not all engines require all modifications to comply. The estimated costs for the secondary air system and other engine integration modifications were based on retail cost estimates and the SwRI test program.

27. Comment: The Briggs alternative proposal would have provided equal or greater emission control benefits compared to the ARB staff's proposal. A report prepare by NERA demonstrates that the ARB staff proposal would impose a greater economic burden on California than the industry alternatives offered to ARB and evaluated by NERA, including the alternative offered by Briggs. Under these circumstances, and on the current record, ARB cannot select the ARB staff proposal in preference to the Briggs alternative. (Briggs)

Comment: EMA and OPEI retained NERA to collect and analyze confidential manufacturer data and, in particular, to consider the economic impact of alternative standards designed to reduce the size and manage the heat related to the use of catalysts. NERA has estimated that the incremental cost of requiring high efficiency catalysts compared to less efficient catalysts systems is approximately $70,000 per ton for combined Class I and Class II engines and equipment. (EMA/OPEI)

Agency Response: Staff repeatedly met with engine manufacturers and industry association groups prior to the September 2003 Board hearing. At these meetings staff requested that the manufacturers provide proposals that would address their concerns regarding cost and safety. Staff received several proposals, including those from Briggs, OPEI, and EMA. The adopted regulations closely reflect these proposals (see agency response to Comment 3). The NERA report mentioned above compares staff's original proposal with the industry's proposals, and concludes that the industry proposals would cost less. The NERA report estimated that the staff's original proposal would cost $106 for Class I engines and $321 for Class II engines, while the industry's proposal would cost only $73 for Class I engines and $189 for Class II engines. Although staff appreciates the lower cost estimate associate with the adopted regulations, staff still believes the cost estimates arrived at by NERA overestimate the actual per engine cost increase associated with the adopted regulations.

28. Comment: Staff estimated their proposal would add 18% to a $250 mower. Industry believes the increase would be 40%. For lawnmowers costing less than $200, staff's proposal would increase costs by 50%. These costs will cause thousands of people to retain or buy used mowers with higher emissions. (Briggs)

Comment: The costs associated with the use of high efficiency catalysts on Class I and Class II engines and related equipment will ultimately be passed onto consumers. The price of equipment will rise; reflecting the more expensive technology and the effort required by equipment manufacturers to accommodate the catalyst and the additional heat that would be generated. In the long run, this higher price will cause consumers to purchase equipment in smaller volume. Similarly, there would be substantial adverse short-term impacts, results in customers keeping existing products longer. As a result, the intended overall emission reductions anticipated from ARB's proposed rule would be significantly less than expected, and would be achieved at an incredibly high price. (EMA)

Agency Response: The adopted standards contain less stringent exhaust emissions standards and modified evaporative emissions standards compared to staff's original proposal. The adopted standards closely reflect proposals submitted by industry. As stated in previous comments, industry believes its proposals would cost significantly less than staff's original proposal. Nevertheless, staff does expect there to be a slight increase in the cost of equipment as a result of the adopted standards. Although the price increase may persuade a consumer to delay the purchase of a new piece of equipment in the short term, it is not expected to significantly impact the long-term demand.

29. Comment: Stringency forces huge expense to mitigate temperature effects with small benefit. (Briggs)

Comment: The staff's continued assertion that engine cooling systems can be cost-effectively modified to accept high efficiency catalysts also is misleading. The number and size of cooling fins and airflow levels already are at high levels. Changes to either would result in significant engine redesign and retooling costs that are not included in the staff's assessment of the costs of their proposal. (EMA)

Agency Response: Based on staff's initially proposed standards, in addition to the cost of the catalytic converter, staff also included additional costs in the cost-effectiveness calculation that could result from engine integration modifications such as the addition of a passive air injection system, carburetor adjustments, and heat shielding. However, based on industry input, the Board adopted less stringent exhaust emission standards with a modified evaporative emissions reduction program designed to obtain the balance in evaporative emissions reductions. It is possible that some overhead-valve engines may not require a catalyst to meet the adopted standards. However, if necessary, the adopted standards can likely be met with a low to medium efficient catalyst which would generate less heat than a high efficiency catalyst, and will help to decrease any potential necessity for additional cooling, and that little engine redesign will be needed.

Alternative Standards

30. Comment: On an engine family basis, other than walk behind mower engines, a manufacturer should be allowed to select Alternative 1 or Alternative 2. (Honda)

Agency Response: Staff has removed all references to the alternative emission standards (compliance "option A") to simplify the certification procedures.

Labeling

31. Comment: The label heading "IMPORTANT ENGINE INFORMATION" in section 2404(c)(4)(A) should be revised to allow an option of "IMPORTANT EMISSION INFORMATION" to allow combination exhaust and evaporative labels. (EMA)

Comment: Staff has agreed in principle that one concise emission label for both exhaust and evaporative emissions would be acceptable but that thought has not been fully implemented in the August 8th Staff Report. (Honda)

Agency Response: ARB revised section 2404(c)(4)(A) to allow the alternative engine label heading.

32. Comment: We would like to see language in section 2404(d) that clarifies, for engines certified and sold in multiple countries, that it will be allowed to mention those standards on the emission label as well as the U.S. EPA standard. (Honda)

Agency Response: Section 2404(d) includes language allowing a label to include reference to the federal standards and "other information," which could include Europe or Canadian standards. However, staff has modified the language in the Section 2404(d) to specifically state that a manufacturer may include references to compliance with Canadian or European standards on the engine label.

Testing of Multiple Engines

33. Comment: Section 90.104(h)(2) restricts certification to only one engine. This is inconsistent with ARB's Mobile Source Mail Out (MSO) 99-08 Attachment A – Guidelines for Certification of 2000 and Later Small Off-Road Engines, Paragraph 3.a. ARB should consider allowing multiple engines without the need to get additional pre-approvals from the Executive Officer. EPA allows the testing of multiple engines with averages used. The additional confidence in the data generated by multiple engines being tested should not be disregarded by ARB in the certification process. In summary, if the MSO allows it, why not make regulations consistent? (EMA/OPEI)

Agency Response: The current ARB certification guidelines (MSO 99-08 Attachment A) allow testing of multiple engines of the same model (i.e., worst case model). However, unlike the federal procedures which allow the results from the various test engines to be averaged, ARB's procedures require the manufacturer to determine separate deterioration factors (DFs) for each engine tested, and allows

the manufacturer to average the DFs to generate a DF for the family. The ARB does not allow for averaging of the data points for all engines tested to determine the average DF. Such an approach can potentially mask engine-to-engine variability. Therefore, staff maintained the current provisions in the MSO by adding 90.104(h)(2)(vii), (viii), and (ix) to clarify the protocol for determining the DF if the manufacturer chooses to conduct more than one test per test point and/or test multiple engines.

Increase Electric Equipment

34. Comment: We urge the Board to commit to a future rulemaking that would encourage the sale of zero emission equipment in this category. Electrical equipment can be and is used in many applications and offers clear emission benefits over combustion engine equipment. Manufacturers should be encouraged and rewarded for increasing their proportionate sales of zero emission equipment in California. This could be accomplished in several ways. But the use of a manufacturer's fleet average standard that includes zero emission equipment sold by manufacturers in California may provide the best combination of additional emissions reductions and compliance flexibility. This fleet average concept is not included in the rulemaking that is before you today, and will take additional work to develop. Further, the fleet average concept is not incompatible with the standards proposed by staff. We urge the Board to direct staff to begin work to develop a fleet average construct or other mechanism that includes and encourages zero emission equipment in these small off-road engines category. (California Electric Transportation Coalition/American Lung Association of California/Center for Energy Efficiency and Renewable Technologies, Coalition for Clean Air/Natural Resources Defense Council/Steven and Michele Kirsch Foundation/Sierra Club/Union of Concerned Scientists)

Agency Response: At the September 2003 hearing, the Board directed staff to report back on the potential for increasing electric equipment in the small off-road engine category. Staff presented its report at the April 2004 Board hearing.

Certification

35. Comment: There is no time frame required for the Executive Officer to determine if a letter of intent is required. This could result in the Executive Officer asking for the letter of intent after the requirement for providing it. Based on historical certification backlog and the lack of letter of intent influence on the certification staffing activity, this requirement should be deleted. (EMA)

Agency Response: The current certification guidelines (MSO 99-08 Attachment A) suggest that all manufacturers submit letters of intent prior to submitting an application for certification. The information contained in the letter of intent is important and helpful to certification staff. It allows staff to manage their workload appropriately. Submitting a letter of intent is also helpful to manufacturers by allowing them to provide staff with the manufacturers' preference for the priority of engine families to be certified. Not providing a letter of intent can only slow the certification process.

To address this comment and clarify the existing language, paragraph 90.106(a)(2) was modified to remove the specific time requirement in which the Executive Officer may request a manufacturer to submit a letter of intent prior to submitting an application for certification. The Executive Officer may still request a manufacturer to submit a letter of intent to better allocate certification resources.

Test Engine Selection

36. Comment: Test engine selection must be communicated to the Executive Officer. This requirement with review and approval within 10 days is different from previous approaches as described in Part I Section 18(a) of the "Test Procedures" and clarified in Manufacturers Advisory Correspondence #95-02. Currently, manufacturers select the worst-case configurations, document that they have tested the worst case, keep the necessary supporting documentation, and, if requested by ARB staff, provide it. This additional approval requirement appears redundant at a minimum and time consuming for ARB staff. We recommend that this requirement remain as previously implemented. (EMA)

Agency Response: Previous test procedure language (Part I, Section 18(a)) stated that the Executive Officer would choose the engine to be tested. However, recent certification protocol has allowed the manufacturer to suggest the appropriate engine to test for the Executive Officer's approval. Staff has attempted to modify the new test procedure language to be consistent with recent certification protocol. Staff modified the language in the Section 90.117(c) to remove the requirement that the manufacturer must receive pre-approval of the test engine selected prior to applying for certification. The manufacturer must include in its application for certification the reason for its test engine choice, and the Executive Officer will notify the manufacturer if the test engine configuration does not meet the requirements for selection.

Durability categories

37. Comment: Durability categories for Class II engines should be harmonized with EPA by deleting the 125-hour option. (Honda)

Agency Response: Staff maintained the 125 hour durability test option because there are engines currently certified to the California standards using the 125 hour durability testing provisions. To harmonize with the U.S. EPA regulations, the staff added the 1000-hour durability option for nonhandheld engines greater than or equal to 225 cc. Therefore, manufacturers are able to choose emissions durability periods of 125, 250, 500, or 1000 hours for each engine family.

Right of Entry

38. Comment: Section 90.126 of the Test Procedures refers to ARB staff's right of entry and access to manufacturers facilities and the ability to copy, take pictures, etc. There is no reference to manufacturers' ability to claim confidentiality of

information obtained. Manufacturers must have the ability to control the release of any proprietary information. (EMA)

Agency Response: Staff agrees that manufacturers have the right to claim confidentiality of proprietary information. As is current practice, the ARB will treat all material viewed and collected in accordance with the Public Records Act, Government Code Section 6250 et seq. and Title 13, CCR, Section 91000 et seq.

Exhaust Systems Installation Instruction

39. Comment: Because of the non-integrated nature of this industry, the engine manufacturer and the equipment manufacturer produce different parts of the final product. Exhaust systems, which will contain the catalyst, are often designed and supplied by the equipment manufacturer because they need to carefully be integrated into the product. We think that it would be appropriate for the engine manufacturer to provide installation instructions consistent with the engine application for certification describing the parameters and steps necessary for the final installation to comply with the standards. The equipment manufacturer would be responsible for following the instructions but could still retain flexibility in, and control of, his product design. (Honda)

Agency Response: The staff agrees that there is a need for some flexibility in the way engines and emission control systems are to be assembled between the engine and equipment manufacturers. Engines may be used in a variety of equipment and by many equipment manufacturers. Staff believes that clarification of instructions/specifications from the engine to the equipment manufacturer is best resolved on an individual manufacturer basis during the certification process. In addition, the regulations remain clear that the engine manufacturer is responsible and liable for compliance of the engine-emission control system with the emission requirements.

Definitions

40. Comment: The definition of “Deterioration factor” should be changed from a multiplicative factor to an additive factor. (EMA)

Agency Response: The use of a multiplicative DF to determine compliance is consistent with current ARB and federal regulations for small engines. A multiplicative DF is particularly appropriate for catalyst controlled engines because the magnitude to which these engines are controlled is largely dependent on the percent catalyst efficiency, not total emission grams reduced. Staff does agree that it might make sense mathematically to use additive DFs when emissions levels are very low (such that variances in measurements play a larger role). However, the adopted exhaust emission standards are not at low enough levels where a multiplicative factor could unfairly skew the final emission value.

41. Comment: The use of the phrase “a gas of known concentration” in the definition of Span Gas (section 90.3 of the Test Procedures) has a significantly different meaning than the similar definition in U.S. EPA CFR 90.312. The federal

language includes the phrase “true concentration of gas must be within +/- two percent of the NIST gas standard.” The lack of control in the language could result in data errors and questions regarding data accuracy. (EMA)

Agency Response: The definition for “span gas” has been removed. The detailed information and requirement for span gas is listed under the test procedure Section 90.312 where it is consistent with federal language.

Engine Testing

42. Comment: There are numerous issues related to test apparatus and test procedures in need of consideration and resolution specifically related to these engines now that they will be specified with catalysts. The test apparatus and procedures can influence the test results for a catalyst exhaust system. The recommended test procedure and/or the required manufacturer test lab information should provide information on test accuracy. (Honda)

Agency Response: The adopted test procedures with modifications should resolve the issues. The accuracy of measurements should meet the tolerances and other requirements listed in Section 90.328 and Table 2 in Appendix A. Additionally, each engine manufacturer must maintain test lab information and test data pursuant to Section 90.121.

43. Comment: For an engine manufacturer that provides an engine without the exhaust system, but the engine meets the standard with a catalyst aftertreatment system applied, Briggs proposed the following certification and exhaust system compliance procedures.

1. The engine manufacturer would conduct certification and DF testing using a representative exhaust system that includes the aftertreatment device. This would include developing the “engine-out” zero hour emission level, the complete system zero hour level, and the complete “system-out” end of emission durability period emission levels. A DF would be estimated with the engine-out and system-out emission levels. The engine manufacturer would certify the engine family using the existing certification process.
2. For compliance, the engine manufacturer would conduct audit testing of engine-out emissions, and would apply the factors generated in step 1 to determine the final system-out emission level.
3. The engine manufacturer would provide the following to the equipment manufacturer: (a) catalyst specifications, including vendor contacts, (b) restrictions on installation of the catalyst into the equipment manufacturer’s exhaust system, and (c) maximum backpressure of exhaust system with catalyst when applied to the engine. For exhaust emissions enforcement, there would be no changes from the existing exhaust regulations. (Briggs)

Agency Response: The process suggested by the manufacturer undermines the basis for certification and production line testing, and makes compliance of the emission requirements difficult. Certification testing is designed to establish the emission characteristics of the engine-control system over its durability period and show compliance. Only testing a complete engine-control system will provide the

data to show that the unit complies with the emission standards. Furthermore, the production line testing is designed to show that the units produced for sale are manufactured the same "in all material respects" to the certification engine and comply with the emission requirements. By performing emission testing in a piecemeal method, the data may be less reliable because the results do not take into consideration the whole unit and the interaction of the engine with the control system. The compliance of the engine-control system would be difficult to verify. Liability for compliance would be difficult when different parts are the responsibility of different manufacturers.

The engine manufacturer should continue to provide specifications to equipment manufacturers on such items as backpressure, temperatures, fuel systems, etc. However, the engine manufacturer should continue to be liable and responsible for compliance of the engine-control system.

Finally, unique production issues may be best handled on a case by case basis during the certification process. Flexibility exists in the current regulations to accommodate the production line testing effort and engine-control system-equipment issues.

C. Comments On The Evaporative Regulations

General Comments

44. Comment: The compliance and enforcement procedures included in the Executive Officer's proposal will not be fully enforceable under California law in the manner specified in the proposed regulations, for several reasons. First, the test and enforcement procedures are too vague to give adequate notice of the basis on which ARB might try to require recalls or impose penalties for noncompliance. Second, the test procedures used to determine feasibility and cost of compliance with the evaporative standards in this rulemaking are materially different from the test procedures that the proposed rules specify for use in future compliance determinations. (Briggs)

Agency Response: Staff disagrees with the Briggs' assessment. The small off-road engine regulations clearly specify the test procedures and criteria for determining engine, equipment, or component compliance. Section 2765(b) requires the ARB to notify the manufacturer of a failure and the right to provide additional information that document compliance. Noncompliance would usually consist of the suspension and revocation of an Executive Order of Certification.

The evaporative test procedure, TP-902, was modified to include an industry-suggested durability demonstration. The durability demonstration replaces the more stringent durability procedure in staff's proposal that required the manufacturer to perform an evaporative test at the end of the engine's or equipment's useful life. Data generated in support of the control measure and contained in the Staff Report demonstrated that the proposed standards are feasible with current control technology. However, the ARB fully expects manufacturers to

produce engines and equipment that comply with the evaporative standards throughout their useful life.

45. Comment: The evaporative emission reduction component of ARB's proposed Rule is fundamentally flawed because it imposes an enormous testing burden and fails to recognize the non-integrated nature of the nonhandheld industry. (EMA)

Agency Response: Staff's proposal simply sets an evaporative emission performance standard and requires manufactures certifying engines and equipment for sale in California to demonstrate compliance during certification. Staff's proposal minimizes testing costs by allowing equipment to be grouped into evaporative families. Only one worst case test is required per evaporative family. For evaporative emission control systems that do not undergo fundamental design changes from year to year, test results can be carried without the need for new certification testing. Data can also be carried over to other evaporative families utilizing the same evaporative emission control system. This approach requires a minimal level of initial testing to obtain certification but greatly reduces long term testing costs.

Staff's proposal acknowledges the non-integrated nature of the nonhandheld industry by allowing both engine and equipment manufacturers to certify engines and equipment to evaporative standards. The proposal also allows equipment manufacturers to use equivalent fuel tanks and fuel lines approved by the Executive Officer without affecting the engine's certification. Additionally, the proposal conditionally exempts equipment manufacturers selling 400 or fewer units of equipment in California per year from the evaporative standards if the equipment uses carbon canisters and low permeation fuel lines. This exemption is intended to allow relief to equipment manufactures that use large rotationally molded high-density polyethylene (HDPE) fuel tanks on low volume equipment.

The modified proposal further acknowledges the non-integrated nature of the nonhandheld industry by allowing certification of evaporative systems based on the test results of system components in lieu of a complete system test. This provision was proposed by industry as a way to deal with non-integrated equipment issues.

46. Comment: Staff's proposal does not demonstrate that fuel tank permeation control technology can be implemented by the proposed effective dates nor does it reflect the true costs of incorporating such technology. (EMA)

Agency Response: The Staff Report presents ARB and industry generated data documenting several low permeation technologies that are available to meet the proposed standards. To allow sufficient lead-time to implement the technology, the proposal gradually phases in fuel tank permeation design standards for new evaporative families. With regard to costs, staff disagrees that the Staff Report misrepresents estimated costs for controlling fuel tank permeation. The Staff Report contains estimates of costs provided by many sources, primarily estimates provided by individual engine and equipment manufacturers, estimates from manufacturers of control technology, and estimates from portable fuel container manufacturers. The estimates in the Staff Report include a reasonable markup

assumption. In addition, the proposal was modified to include two industry suggested compliance options that provides manufacturers more time to the evaporative and permeation requirements.

47. Comment: ARB's proposal has failed to take into consideration the impacts of using sealed systems. (EMA)

Agency Response: Staff evaluated sealed systems on equipment with large and small fuel tanks. Staff did not document any safety or performance issues on tanks with volumes less than 0.5 gallons. The Staff Report documents the performance of six lawn mowers configured with sealed systems. The unique design of the sealed systems on the lawn mowers staff evaluated did not over pressurize the carburetor. In addition, properly designed sealed systems have also been in use for many years on handheld equipment such as string trimmers and leaf blowers. Staff did, however, identify safety and performance issues on tanks larger than 0.5 gallons. Tank swelling on sealed systems with tanks larger than 0.5 gallons was very pronounced and could potentially deform the fuel tank. Staff does not view sealed systems as a viable option unless existing fuel systems are designed to withstand pressure. Because of staff's findings, staff calculated the upper range of cost effectiveness in the Staff Report on the assumption that nonhandheld equipment would use carbon canister technology to control evaporative emissions.

48. Comment: ARB has failed to account for tank size in developing baseline evaporative emission data and in setting proposed evaporative emission limits. (EMA)

Agency Response: In determining baseline evaporative emissions through in-house and contract testing, a number of different types of equipment were evaluated with a broad range of tank volumes. In setting the proposed standards, staff proposed a 1.0 gram/day diurnal standard for Class I walk-behind mowers because, 1) it was demonstrated that typical representative mowers could meet the proposed standard when configured with evaporative emission control technology, and 2) there is very little variability in tank volumes on walk-behind mowers. For other Class I equipment staff did propose a standard based on tank volume to acknowledge increased emissions from larger tanks. With regard to Class II equipment, staff evaluated a generator and commercial mower configured with six gallon fuel tanks. Typically, Class II equipment are configured with volumes no greater than five gallons. The evaluation demonstrated that Class II equipment could meet a 2.0 gram/day diurnal standard even when configured with a large tank. Staff also notes that on-road motor vehicles have met a 2.0 gram/day diurnal standard for many years with tanks as large as 25 gallons.

The proposal was modified to include industry alternative standards based on tank volume for Class I and Class II equipment. Another industry suggested modification that was incorporated is a two-year phase-in of the diurnal evaporative emission standard for Class I walk-behind mowers. The initial Class I walk-behind mower diurnal evaporative emission standard is set at 1.3 gram/day in 2007 and 2008 and lowering to 1.0 gram/day for 2009 and later equipment.

49. Comment: ARB's proposal is based on limited test data and fails to account for variability. (EMA)

Agency Response: Due to resource constraints, the ARB was limited in the amount of testing it could perform to demonstrate technical feasibility of the proposed standards. However, the data that was generated was for representative equipment with high volumes of sales in California. The proposal does acknowledge production variability by allowing relaxed phased-in compliance criteria for new evaporative families. The compliance criteria is set at 1.5 times the standard for the first year of production, 1.3 times the standard for the second year of production, and 1.1 times the standard for the third and subsequent years of production. This approach allows manufacturers sufficient compliance margin to identify and control production variability.

50. Comment: ARB's proposal wrongly assumes that engine manufacturers can conduct the necessary testing and provide the required evaporative certification. (EMA)

Agency Response: The original proposal assumes engine manufacturers will perform evaporative certifications on integrated engines sold with complete fuel systems. For non-integrated engines, the original proposal assumes that equipment manufacturers may depend on engine manufacturers for certification on high volume lines of equipment. In this respect, the original proposal allows equipment manufacturers to substitute certified fuel tanks and lines on system certified by the engine manufacturer with equivalent fuel tanks and lines approved by the Executive Officer without affecting the certification of the evaporative system. For non-integrated low volume lines of equipment, the original proposal assumes the equipment manufacturer will likely perform the certification with assistance from the engine manufacturer.

The proposal was modified to allow design-based certification as an alternative to testing complete evaporative emission systems. The modification allows engine and equipment manufacturers much more flexibility in certifying integrated and non-integrated engines and equipment.

51. Comment: ARB's proposal requires too much testing and imposes unnecessary and unreasonable costs. ARB's proposal further compounds the error by suggesting that to the degree that an equipment manufacturer may want or need a tank, fuel lines, or other evaporative emission components different from what an engine supplier might offer or have available, the equipment manufacturer can simply do testing and certification on their own. But, such testing and certification is extremely expensive and burdensome, and the staff's optional program fails to provide a cost-effective, practical or reasonable alternative. (EMA)

Agency Response: The proposal requires a minimum amount of testing to ensure that engines and equipment are meeting the proposed evaporative emission standards. Staff's proposal minimizes testing costs by allowing engines/equipment to be grouped into evaporative families. Only one worst case test is required per evaporative family. Even if it is assumed that equipment would need to be tested

yearly, which is a poor assumption because the proposal allows carry over from year to year when system designs don't change, the level of testing required is reasonable and cost effective, especially when compared to other control measures.

52. Comment: Staff has not taken into consideration the costs and lead-time needs associated with incorporating carbon canisters on small off-road engines. (EMA)

Agency Response: Because evaporative emission control technology is widely available, the original proposal allows sufficient lead-time (three years) to incorporate evaporative emission control systems based on carbon canisters into designs for engines and equipment. Industry has asserted that complete carburetor redesigns are necessary without providing justification. Although original evaporative standards contain sufficient margins for typical carburetors, and assume minor design changes to carburetors to allow active purging of canisters, the proposal was modified to include two alternatives that establish interim, less stringent evaporative standards. The alternatives allow additional time (until 2009 for walk-behind mowers, until 2012 for Class I non-walk behind mowers, and until 2013 for Class II equipment) for manufacturers to meet more stringent final standards.

53. Comment: The proposed test procedures and standards staff's analysis of the emission benefits and cost effectiveness associated with those procedures and standards are based on the assumption that a fuel illegal for sale in California will be representative of commercial fuels that will be used in the state. In addition, it is well known that the gasoline that will be sold in the state will contain ethanol and equally well known that the presence of ethanol in gasoline will have a significant impact on permeation emissions from existing and future equipment as well as effectiveness of different approaches to permeation control. The presence of ethanol in gasoline may also lead to higher in-use evaporative emissions and affect the overall cost effectiveness of evaporative emission control systems for small engines. The staff has not adequately addressed these issues and therefore and until such time that a proper analysis has been performed, the proposed regulations cannot be demonstrated to be technically feasible or cost-effective. (Sierra Research)

Agency Response: Section 4.5.4 of the Staff Report contains data that clearly demonstrates the feasibility of the proposed permeation standard for small engines with fuel containing ethanol. Additionally, Figure 4.11 of the Staff Report also contains evaporative emission reduction results for mowers tested with commercial pump fuels containing MTBE and ethanol. Again, the data established that the proposed diurnal emission standards are feasible and fuel neutral. However, to be consistent with the test procedures for on-road motor vehicles, the small engine test procedures specify the use of California Certification Fuel or Indolene to measure emissions

<u>Definitions</u>

54. Comment: Section 2752(a)(5) - “Equivalent Fuel Tank” as defined is not acceptable. Fuel tanks with equivalent permeation performance that are the same volume or smaller should be considered equivalent. (EMA)

Agency Response: ARB has specified the process for demonstrating equivalent permeation performance in Section 2767. The Executive Officer can deem tanks equivalent on a case by case basis by reviewing permeation test data submitted as part of an innovative product demonstration. Section 2752(a)(5) was modified to state that a tank approved pursuant to Section 2767 is also deemed an “Equivalent Fuel Tank”.

55. Comment: Section 2752(a)(9) - “Evaporative Family” – the restrictions on the engine exhaust and evaporative family names being equivalent for less than 80 cc is unacceptable. If an engine manufacturer is responsible for evaporative and exhaust certifications there should be an option for a common family name regardless of engine displacement. (EMA)

Agency Response: Modified Section 2752 (a)(9) to state that the exhaust family “is” the evaporative family for equipment less than or equal to 80 cc.

56. Comment: Section 2752(a)(1) - “Co-Extruded Multi-layer Fuel Tank” does not include options for other materials. (EMA)

Agency Response: Section 2752(a)(1) addresses the two most common types of materials used in coextruded multilayer fuel tanks. Additional materials can be evaluated through an innovative products demonstration specified in Section 2767.

57. Comment: Section 2752(a)(5) - “Equivalent Fuel Tank” definition should include: “or alternate with equivalent emissions performance”. (EMA)

Agency Response: Section 2767 specifies the process for demonstrating equivalent permeation performance.

58. Comment: Section 2752(a)(13) - Hydrocarbon is not necessarily composed “entirely” of hydrogen and carbon. Should read “primarily”. Could contain oxygen, nitrogen, sulfur, etc. (EMA)

Agency Response: Modified the definition in Section 2752(a)(13) to replace “entirely” with “primarily”.

59. Comment: Section 2752(a)(16) - Nominal fuel tank and line are only defined for engine manufacturer. These should also apply to equipment manufacturers. (EMA)

Agency Response: Modified Section 2752(a)(16) to apply the definition to engine and equipment manufacturers.

60. Comment: Section 2752(a)(27) - "Walk-Behind Mower" – "A" and "C" conflict. Suggested solution is to delete "A", and revise "B" to read "an engine displacement greater than 80 cc and less than or equal to 225 cc equipped with a blade stop or brake mechanism". (EMA)

Agency Response: Modified definition to eliminate conflict.

61. Comment: Clarify the definition of walk behind mower to include only vertical shaft engines between 80 and 225cc that directly power a blade or string. (Honda)

Agency Response: Modified the walk-behind mower definition in Section 2752(a)(31).

Certification Requirements and Procedures

62. Comment: Section 2753(c) - "… must be identical in design and function" is too restrictive. We suggest: "… must have equivalent or better performance". (EMA)

Agency Response: Modified Section 2753(c) to incorporate suggested change.

63. Comment: Section 2753 Paragraphs (a) and (c) - ARB should add clarifying regulatory language that states "for engines less than 80 cc used on handheld products the manufacturer can exclusively test the largest tank for all evaporative tank families with the same material/process. These certification test results can then be carried across to other tanks/engine families constructed of the same materials/processes." The rationale for this improvement is that the largest tank will have the highest permeation rate and can be used by the manufacturer as a worst case example to represent all tanks of the same material or process, including other exhaust/tank families. The intent of this provision is to reduce unnecessary administrative burdens on both ARB and manufacturers having to test and certify smaller tanks made of the same materials which will inherently have lower emissions. (OPEI)

Agency Response: Added suggested language to Section 2753(b).

Evaporative Standards and Requirements

64. Comment: On an engine family basis, other than walk behind mower engines, a manufacturer should be allowed to Alternative 1 or Alternative 2. (Honda)

Comment: If an engine manufacturer elects Alternative 1 for an engine model with a complete fuel system that engine manufacturer should also be allowed to sell the same engine model without a fuel system to an equipment manufacturer who can select Alternative 2. The reverse of Alternatives should also be allowed. (Honda)

Agency Response: See agency response to Comment 30.

65. Comment: In Alternative 1 engines are certified to a performance standard with the additional requirement of demonstrating running loss control. One specified option to demonstrate control should be the use of a minimal canister. (Honda)

Agency Response: Modified Section 2754(a)(1)(A) to exempt from Executive Officer approval actively purged carbon canisters meeting the requirements of TP-902.

66. Comment: Need to clarify that a pressurized fuel tank is an option and not a requirement to comply with the standard. (Honda)

Agency Response: The evaporative emission performance and design standards in Section 2754 do not prescribe or require the use of pressurized tank. However, it is an option for meeting the diurnal standard.

67. Comment: Tethering the fuel cap to the engine or equipment should be deleted as a significant cost with indeterminate benefit. At the very least the tether requirement should be deferred until the 2012/2013 final implementation of fuel tank redesign. (Honda)

Agency Response: Rejected suggested changes because the fuel cap is an integral component of an evaporative emission control system.

Labeling

68. Comment: Section 2759(c)(2) - "…component that is easily detached from the engine" should be engine/or equipment as applicable. (EMA)

Agency Response: Incorporated suggested language in Section 2759(c)(2).

69. Comment: Section 2759 (c)(3) - The "equipment label" should read "engine or equipment label". (EMA)

Agency Response: Incorporated suggested language in Section 2759(c)(3).

70. Comment: Section 2759(c)(4) – The "equipment label" should read "engine or equipment label". (EMA)

Agency Response: Incorporated suggested language in Section 2759(c)(4).

71. Comment: Section 2759(c)(4)(A) - The label heading "Important Emissions Information" is different from the current exhaust label, which states "Important Engine Information". Any changes to a combined common label would need to be approved by EPA. Combined label options for California and EPA certified products

are significant and every effort should be made to assure this is a viable option. (EMA)

Agency Response: It is ARB's intent to allow a combined exhaust and evaporative label. If the U.S. EPA approves California's authorization request, they also approve California's labeling regulations.

72. Comment: Section 2759(c)(4)(C) - Abbreviations per § 2404 (c)(4)(D) should be specified. (EMA)

Agency Response: Modified Section 2759(c)(4)(C) to allow manufacturer abbreviations and abbreviations per Section 2404(c)(4)(D).

73. Comment: Section 2759(c)(4)(E) - Specific calendar year or model year specifications are not appropriate because they require labeling change each year. Also engine or equipment certified to a standard in advance of the requirement cannot be properly identified. Suggested wording "THIS ENGINE MEETS 200X CALIFORNIA EXHAUST AND EVAP EMISSION REQUIREMENTS FOR SMALL OFF ROAD ENGINES" where X is the first year of the applicable regulations. (EMA)

Agency Response: Specific model year information is required for consumer identification and enforcement purposes.

74. Comment: Section 2759(c)(4)(F) - Engine displacement is not appropriate. It is very common for an equipment manufacturer to utilize different engines in equipment that would be considered the same evaporative family. As defined in § 2404(c)(5)(A), the engine displacement can be deleted from the engine label related to the exhaust regulatory requirements; it should not be a requirement of the evaporative regulations. (EMA)

Agency Response: Deleted Section 2759(c)(4)(F).

75. Comment: Section 2759(g) - Sample labels should not be required for carry over certification unless label is revised. (EMA)

Agency Response: Modified Section 2759(g) to incorporate suggested change.

76. Comment: Section 2759 Paragraph (c)(4) - The label heading "Important Emission Information" is different than that required by the exhaust regulation ("engine information"). The label requirement in the exhaust portion of the regulation (Section 2404) should be revised to reflect the word "emissions" instead of "engines."

Section 2759 is not clear on the labeling requirements of the fuel system components. We assume that I.D. labeling of components is not necessary.

Manufacturers should not be required to put an I.D. on the fuel tank. This would be burdensome and unnecessary. (OPEI)

Agency Response: Revised Section 2404 to allow "Important Emissions Information" in the label heading. Labeling of fuel system components is not required.

77. Comment: Staff has agreed in principle that one concise emission label for both exhaust and evaporative emissions would be acceptable but that thought has not been fully implemented in the August 8th Staff Report. There needs to be editorial changes to the regulation to completely reflect this concept in the nonhandheld category. Changes should include: consistent wording requirements in exhaust and evaporative parts of the regulation, allowance to use the exhaust family name as the sole identifier, consolidation of the compliance statement to ARB Tier 3 or CA T3 instead of the statement "complies to MY California standards for..." -the date of manufacture information on the label will identify for field investigators the relevant supplemental compliance information without the lengthier statement. (Honda)

Agency Response: Modified language to allow exhaust family as sole identifier for engine manufacturers certifying both exhaust and evaporative emissions. Section 2759(h) allows the Executive Officer to approve alternate labels, which could contain a consolidated compliance statement.

78. Comment: We also request clarification that a label can also include reference to other standards such as Canada or the European Union in addition to EPA. (Honda)

Agency Response: Added clarifying language to Section 2759(d) consistent with Section 2404(d).

<u>Defects Warranty Requirements</u>

79. Comment: Section 2760(c)(8) - "Any replacement part may be used …" is not acceptable language to protest the engine/equipment manufacturer from inferior replacement parts. (EMA)

Agency Response: Modified Section 2760(c)(8) to incorporate suggested change.

80. Comment: Section 2760(d) - Language does not identify that the parts listed are exclusive to the evaporative emission control system. General descriptions such as (5) (6) (7) (8) (9) (10) (11) (12) are not viable unless they can be specifically identified as they relate to the evaporative control system. (EMA)

Agency Response: Modified Section 2760 to include a footnote incorporating suggested change.

Emission-Related Defect Reporting Requirements

81. Comment: Section 2761(d) - "… 25 or more engines manufactured…" must be expanded to "engine or equipment". (EMA)

Agency Response: Modified Section 2761(d) to incorporate suggested change.

82. Comment: Section 2761(e) (3) - "... category of engines ..." must be expanded to "engine or equipment". (EMA)

Agency Response: Modified Section 2761 (e)(3) to incorporate suggested change.

83. Comment: Section 2761(e) (4) - "... category of engines ..." must be expanded to "engine or equipment". (EMA)

Agency Response: Modified Section 2761(e)(4) to incorporate suggested change.

Voluntary Emission Recall Program

84. Comment: Section 2762(d) - Record retention for 5 years from the engine DOM does not cover defect reporting requirement of 5 years from end of the year of manufacture in § 2761(a). The record retention requirement should be revised to 5 years from the end of the model year. (EMA)

Agency Response: Modified Section 2762(d) to incorporate suggested change.

Ordered Recalls

85. Comment: Section 2763(a)(1)(B) - The only options provided for the Executive Officer are to withdraw the determination of nonconformity or force a mandatory recall. The regulations should acknowledge the impracticality of a recall for this industry and the Executive Officer must have alternatives or flexibility to allow other options. (EMA)

Agency Response: See agency response to Comment 24.

Evaporative Emission Control Warranty Statement

86. Comment: Section 2764 - Evaporative Emission Control Warranty Statement - The warranty statement provided in Section A of this section, clearly identifies it is specific to evaporative emissions. The language appears to be the same as the engine exhaust, except for minor verbiage changes. ARB should write into the regulation that the evaporative and exhaust warranty statement may be combined into a single warranty to explain the "evaporative and engine exhaust emission" controls systems. This is requested to avoid misinterpretation of what your staff is thinking in relation to how the certification and compliance people will interpret it.

To avoid misunderstanding at the certification and compliance level we request a statement be added that states, "For handheld products, only the fuel tank is regulated and therefore only the fuel tank should be listed as a component subject to the warranty requirements". (OPEI)

Agency Response: Modified Section 2764 to incorporate suggested changes.

New Equipment Compliance Testing

87. Comment: Section 2765(a)(7) - New equipment compliance testing -The pass/fail criteria for “U” as defined is unacceptable. Based on the existing definition, it is possible to fail the “U” statistic of 1.1 *Std even if all 5 tests pass the standard. This provision should be reworded to read: “If all 5 engines or equipment tested are below the regulatory standard, then the family is deemed to be in compliance. Should 1 or more of the engines exceed the standard, then the UtI statistic will be calculated and compliance will be determined based on the table shown”. (EMA)

Agency Response: Modified Section 2765(a)(7) to incorporate suggested change.

88. Comment: Section 2765(b) - 14 days for response is too short a time frame. This should be expanded to 30 days. (EMA)

Agency Response: Rejected suggested change. The Holder of the Executive Order of Certification must merely notify the Executive Officer of their intent to provide additional information or test data that documents compliance. Allowing additional time for notification could potentially impact air quality.

89. Comment: Section 2765(c) - Suspension and revocation policies as drafted are not practical given extremely long test required. Under the current procedures, a determination of emission level takes a minimum of 20 weeks. The Executive Officer must be provided an option to allow a modified test procedure to allow acceptance of new results without extensive use of conditional certificates. (EMA)

Agency Response: The Executive Officer has discretion to approve alternative test procedures as specified in TP-901 and TP-902.

90. Comment: Testing of 30 sample fuel tanks to qualify an alternative material or process is a significant time and cost burden when far fewer tanks can statistically demonstrate the technique is satisfactory. Staff decided that walk behind mowers could meet the proposed standard based on tests of 6 walk behind mowers (2 each from 3 manufacturers). (Honda)

Agency Response: Reduced the minimum number of test samples from 30 to 5 in Section 2767(b).

Exemptions

91. Comment: Section 2766 - There is an exemption for Small Volume Equipment. This exemption should be expanded to include Small Volume Engine" families. EPA has long recognized that there are limitations on the ability to conform with extensive testing and certification requirements for small volume engine families as well as small volume equipment models. The appropriate scaling of these limits to the state level would prevent manufacturers in these markets from being excluded from California. An additional exemption should be allowed for engines utilized in equipment where the fuel system is not exclusive to the small off road engine, e.g. motor homes where the small engine generator utilizes the vehicle fuel tank. (EMA)

Agency Response: Rejected suggested change. Allowing an exemption for small volume engine families would adversely impact air quality because it would increase the number of engines and equipment eligible for the exemption. Section 2766 was modified to exempt generators fueled from the fuel tank of an on-road vehicle or marine vessel provided low permeation fuel lines are used.

92. Comment: Section 2766 – Exemptions - Under Section 2752, ARB indicates that a co-extruded, multi-layer fuel tank is an “equivalent tank.” Under Section 2753, ARB has exempted wheeled product OEMs from having to test an "equivalent tank" *(i.e.,* “a coextruded, multi-layer fuel tank”) even when this tank was never tested by the engine manufacturer supplying a “nominal system.” ARB should create an analogous testing exemption for handheld products with co extruded, multi-layer fuel tanks because ARB has already presumed such tanks comply with the permeation standards. We request language that states that if a manufacturer is using co-extruded tanks, they are exempt from testing requirements. (OPEI)

Agency Response: Added an exemption from the fuel tank permeation testing requirements to Section 2755 for models using equivalent fuel tanks.

<u>Innovative Products</u>

93. Comment: Section 2767 - If a manufacturer wants to use components other than what is certified as a “nominal” system, supporting documentation must be provided that “quantifies the emissions from at least 30 samples of the innovative product, including the test methods used to generate the data”. The requirements for demonstration of equivalency based on 30 samples is unacceptable. A significant amount of flexibility must be given to the Executive Officer to approval alternative technologies without a specific mandate to the number and type of tests required. (EMA)

Agency Response: Modified Section 2767(b) to reduce the minimum number of test samples from 30 to 5.

<u>Variances</u>

94. Comment: Section 2768 - The restriction that “Variances shall not be granted for more than 1 model year” is too restrictive. If a variance occurs near the end of a

model year, the variance should be allowed to carry forward into the next model year until the issue is resolved. We recommend that language be revised to read "Variances shall not be granted for more than 1 full model year after the year initiated. (EMA)

Agency Response: Modified Section 2768 to incorporate suggested change.

Denial, Suspension or Revocation of Certification

95. Comment: Section 2770 - Denial, suspension or revocation duplicates and conflicts with § 2765 (c) suspension and revocation of executive orders. (EMA)

Agency Response: Section 2765 deals specifically with new equipment compliance testing. Section 2770 specifies additional instances where an Executive Order of Certification can be denied, suspended, or revoked for just cause.

Penalties

96. Comment: Section 2772 - Penalties – The provisions as proposed are not acceptable. Limits need to be in place to provide guidance on the maximum penalties. (EMA)

Agency Response: The California Health and Safety Code sets the maximum civil penalty amount that can be recovered for violations of these regulations.

D. Comments On The Evaporative Certification Procedures

Comment on CP-901

97. Comment: Section 3 – This section seems out of place in CP-901 and is more relevant for CP-902. Optional performance standards are for complete product permeation and not for the fuel tank. (OPEI)

Agency Response: For engines and equipment less than 80 cc, the fuel tank is the complete evaporative emission system. It is ARB's intent to allow unique labels for fuel tanks certified to the optional, more stringent permeation standards.

98. Comment: Section 5.1 – ARB requires that a worse case fuel tank for each family be selected. Carry-over and carry across are possible with the model year and from one model year to the next. OPEI proposes that ARB put language in the procedure that the manufacturer may test its largest fuel tank in all tank/exhaust families and use these results for all tanks in all other tank/exhaust families made of the same material/process. This will appropriately reduce the testing burden. OPEI also requests that ARB create an alternative mechanism under which manufacturers or a material supplier could conduct a "coupon tank test" and obtain a generic design-based approval of a particular low permeation tank material or process. (OPEI)

Agency Response: Modified Section 5.1 to incorporate suggested language. Alternative test procedures are allowed if approved by the Executive Officer. Added 13 CCR Section 2767.1 to issue an Executive Order for low permeation tanks that can be referenced in the certification application.

99. Comment: Section 5.1.2 – This section discusses the application format. It is our understanding the revised certification application will be based on FileMaker Pro. ARB should work together with the OPEI handheld committee to revise the FileMaker Pro application. (OPEI)

Agency Response: ARB does not have access to the FileMaker Pro application. ARB will specify the format (hardcopy and electronic) of the certification application.

100. Comment: Section 6.2 – In accordance with our longstanding agreement, ARB should allow manufacturers to combine the evaporative and engine exhaust Letter of Intent together. (OPEI)

Agency Response: Modified Section 6.2 of CP-901 to allow manufacturers to combine evaporative and engine exhaust Letters of Intent.

101. Comment: Section 6.4 - ARB should put in writing in the regulation that a manufacturer may submit drawings of its labels to ARB instead of actual label samples. (OPEI)

Agency Response: Incorporated suggested change. However, ARB retains the right to request actual labels.

102. Comment: This appears to be restrictive to engines or equipment with engines ≤ 80 cc. Test procedures should not be limited to any specific engines or products. (EMA)

Agency Response: CP-901 is specifically intended for certifying fuel tanks used on equipment that use small off-road engines with displacements less than or equal to 80 cc. A separate certification procedure, CP-902, is intended for certifying the diurnal evaporative emissions for engines and equipment with displacements > 80 cc.

103. Comment: Section 9 – "list of all engine models covered…" should read "list of all engines and equipment covered…" (EMA)

Agency Response: Incorporated suggested change.

<u>Comment on CP-902</u>

104. Comment: "Manufacturing for sale, selling, or offering for sale" – should be "offered for retail sale or sold to ultimate consumer" to prevent sales to OEMs for equipment to be ultimately sold outside California and trans-shipment of product from being included. (EMA)

Agency Response: Deleted language from CP-902 because it is specified in 13 CCR Section 2751.

105. Comment: Figure 1 – Replace "engine manufacturer" with "engine/equipment manufacturer" in boxes identified as "ARB Rejects…" and "ARB Denies…" (EMA)

Agency Response: Replaced "engine manufacturer" with "manufacturer", which is defined in 13 CCR Section 2752(a)(16) as "engine or equipment" manufacturer.

106. Comment: Section 5.1.1 – "Emission-compliant engines:" should read "emission-compliant engines and/or equipment.". The requirement as written for a manufacturer to conduct a retest if the original results indicate marginal (within 5% of the standard) is not realistic given the time required for all testing. If this is applied to a diurnal retest on the same engine/equipment without any preconditioning, soak time, etc, the provision is acceptable. (EMA)

Agency Response: Incorporated suggested language. Modified language to allow a retest, without preconditioning, of the same engine and/or equipment, which generated the original test result.

107. Comment: Section 6.1 – There is a third option included in ARB's proposal, but is not listed. An engine manufacturer can certify a complete system and an equipment manufacturer can use the engine certification with an equivalent system without separate certification. (EMA)

Agency Response: The third option is not listed because the engine manufacturer is the legal "Holder" of certification as defined in 13 CCR Section 2752(a)(13). Manufacturers that sell equipment modified with "equivalent" fuel tanks and/or hoses do not need to recertify the equipment.

108. Comment: Section 6.2 – Modifications should be allowed that are determined to be equivalent. The determination of equivalence should be at the discretion of the Executive Officer. (EMA)

Agency Response: Modified language to allow evaporative emission control system modifications to the fuel lines and fuel hoses as approved by the Executive Officer.

109. Comment: Section 7.2 – The proposed timing for the letter of intent (LOI) is not valid. The specified 90 days prior to certification does not provide for the time required running the required testing for certification. Request that requirement be deleted. (EMA)

Agency Response: Rejected suggested change. The LOI is essential for workload planning. The language was modified to require submittal of an LOI at least 30 days prior to submitting a certification application. Nothing precludes the manufacturer from performing certification testing in advance of submitting a LOI.

110. Comment: Section 7.3 – Cover letter: The option to combine cover letter information and submission with exhaust certification should be included. (EMA)

Agency Response: Incorporated suggested change.

111. Comment: Section 7.6 – Certification Database Form (ref. attachment 3): Item S4 Engine Disp. (cc) should be replaced with engine Class (I or II) to conform with the regulatory construction and allow for multiple engines in one equipment model. Item S5 "Fuel System" is not applicable and should be deleted. Item S6 Fuel Tank Vol. Should specify units in gallons rather than cc for consistency with regulatory units. (EMA)

Agency Response: Incorporated suggested changes in items S4 and S6 of the form. Rejected suggested deletion of item S5 because evaporative emissions are related to the type of fuel system on the engine.

112. Comment: Section 7.12 – The requirement to submit the "entire application" if the certification summary is affected should be deleted. As identified in Section 7.6, the engine family and engine displacement should not be required. (EMA)

Agency Response: For revisions to the certification application, the language was modified to require that "only those pages affected" need to be resubmitted. Rejected request to remove engine family and engine displacement because they are needed for enforcement purposes.

113. Comment: Section 7.13 – The language related to post assembly line changes to the evaporative family should also specify "that could potentially affect the evaporative emissions" as identified for factory changes. The statement "If the changes effect an emission-related part or results in a new evaporative family test engine, …" should be changed to say engine or equipment. Similar changes are required later in the same paragraph. (EMA)

Agency Response: Incorporated suggested changes.

114. Comment: Section 9 – Executive Order: "A list of approved engines/model(s) …" should be expanded to include equipment. (EMA)

Agency Response: Incorporated suggested change.

115. Comment: Section 10 - "...include a list of all engine models …" should be expanded to include equipment. (EMA)

Agency Response: Incorporated suggested change.

116. Comment: Section 10.2 - "…Brought to the attention of the engine-manufacturer," should be expanded to include equipment manufacturer. (EMA)

Agency Response: Incorporated suggested change.

Comment on CP-902, Attachment 1

117. Comment: Evaporative Family Classification Criteria: The regulations should allow that any engine certified as a complete unit can be certified, at the manufacturers option, under the exhaust family name where 1 of last 2 letters is an evaporative code (26 options A-Z) as an evaporative family designation. (EMA)

Agency Response: Reduced the family evaporative codes to two characters, which at the manufacturer's discretion, can be used as the last two characters of the exhaust family name.

118. Comment: Engine displacement ranges should be replaced with engine class and application as specified in the regulation, e.g. WBM, "Other Class I", Class II. The = 80cc category should be deleted because it will be integral with the engine family name. (EMA)

Agency Response: Deleted engine displacement criteria because the exhaust family name contains displacement information needed for enforcement purposes.

119. Comment: Vent control – In addition to "canister" and "sealed", "other" should to be added as an option. (EMA)

Agency Response: Incorporated suggested change.

120. Comment: Fuel line length – This should be deleted from the family name. There is no regulatory significance. (EMA)

Agency Response: Deleted fuel line length from family name.

121. Comment: Tank material – Options need to be expanded to include other treatment and materials (fluorination, sulfonation, etc.), "other" alternate materials and co-extruded materials. (EMA)

Agency Response: Incorporated suggested change.

122. Comment: Tank Volume – This should be deleted from the family name, there is no regulatory significance. (EMA)

Agency Response: Incorporated suggested change.

123. Comment: Evaporative family determination (if not integral with the exhaust family): (EMA)

1st: Classification

WBM

Class 1 non WBM

Class 2

2nd: Vent Control

C Canister

S Sealed

Other

3rd: Tank Material

M Metal

P HDPE or PE w/ Treatment

N Nylon

A Acetal

C Co-Extruded

Other

Agency Response: Reduced the family evaporative codes to two characters, which at the manufacturer's discretion, can be used as the last two characters of the exhaust family name. The two codes are vent control and tank material. Deleted engine displacement criteria because walk-behind mowers are uniquely identifiable and the exhaust family name already contains displacement information needed for enforcement purposes.

Comment on CP-902, Attachment 2

124. Comment: Inclusion of engine family listing is not appropriate. (EMA)

Agency Response: Engine family names are needed for enforcement purposes.

125. Comment: (b) Test "equipment" should be "engine or equipment". (EMA)

Agency Response: Incorporated suggested change.

126. Comment: "Official test results"- WBM < 225 cc is not required in various boxes. (EMA)

Agency Response: Replaced tables and column headings to apply to multiple engine classes.

127. Comment: "Equipment models" listing is only appropriate if not an engine certification. Engines certified as a complete system are independent of the equipment on which they are used. (EMA)

Agency Response: Replaced "equipment models" with "equipment types".

E. Comments On The Evaporative Test Procedures

Comment on TP-901

128. Comment: Section 1 - Applicability: As a test procedure, this should not be restricted to any given engine or equipment category. The inclusion of requirements for larger fuel tank capacities for scale precision reflects the potential for this procedure to be used to demonstrate equivalence of alternative tank materials or process for > 80 cc. (EMA)

Agency Response: Deleted language limiting use of procedure to engines less than or equal to 80 cc.

129. Comment: Section 3 - Principles and Summary of Test Procedure: "an additional HDPE coupon" should be changed to "a coupon of the same material as the tank" since not all tanks will be HDPE and the use of a HDPE coupon would potentially influence the results of the test. (EMA)

Agency Response: Incorporated suggested change.

130. Comment: Section 3 - There should be a means to provide testing before and after pre-conditioning to allow determination of an additive factor to adjust future zero hour performance data for similar technologies to be certified and evaluated for compliance. (EMA)

Agency Response: Rejected suggestion because tanks with similar technologies have too much permeation variability.

131. Comment: Section 4 - Relative humidity: “must be controlled” should allow for compensation vs. control as identified in the Trip Blank Correction (ref. Section 12). (EMA)

Agency Response: Changed language to simply require that humidity be recorded rather than controlled.

132. Comment: Section 6.1 – The reference to high density polyethylene (HDPE) coupon should be changed to a coupon of the same material as the tank. (EMA)

Agency Response: Incorporated suggested change.

133. Comment: Section 6.3 - Tolerances of +/- 1.7° C instantaneous and +/- 1.1° C average should be harmonized with other similar temperature tolerances which are +/- 2.0° C. (EMA)

Agency Response: Incorporated suggested change.

134. Comment: Section 6.4 - Barometric pressure transducer should be required only if using buoyant force correction (reference Section 11). (EMA)

Agency Response: Rejected suggested change because changes in air density can bias results.

135. Comment: Section 6.5 - Accuracy of +/- 0.5° C is not consistent with requirement of control to +/- 2° C. The industry standard for precision is 10x the measurement accuracy so either the accuracy requirement needs to be reduced to +/- 0.2° C or the tolerance increased to +/- 5° C. Due to the availability and cost of equipment to the required +/- 0.2° C the tolerance should be increased to +/- 5° C. (EMA)

Agency Response: Incorporated suggested change.

136. Comment: Section 8 - Pressure/vacuum: There is no specified tolerance on 49° C. The tolerance should be +/- 5° C. There is no specified tolerance on +4 psig and -1 psig. The tolerance should be +/- 10" H_2O. (EMA)

Agency Response: Specified tolerance for temperature and pressure/vacuum cycling.

137. Comment: Section 8 - Slosh test: There is no specified tolerance levels for 2 cycles/second. The tolerance should be +/- 0.25. In the last sentence of the paragraph on Slosh Testing, there is an error. "...one hour minutes" should read "...one hour". (EMA)

Agency Response: Incorporated suggested change and corrected error.

138. Comment: Section 15 - It is unclear whether fuel or air temperature is measured. It should be fuel temperature. (EMA)

Agency Response: Removed Section because trip blank correction accounts for temperature, barometric pressure, and humidity biases at a much lower cost.

139. Comment: Section 17 - "Emissions Factor" should be deleted This does not appear to have any regulatory significance. (EMA)

Agency Response: Section deleted.

140. Comment: OPEI requests that ARB adopt the same 28º C temperature profile in lieu of ARB's proposed 40º C temperature profile. (OPEI)

Agency Response: Rejected suggested change. The regulations contain a fuel tank permeation standard that is based on testing performed at 40º C. Lowering the test temperature would lower the standard because permeation rates are directly related to test temperature and fuel.

141. Comment: ARB states that relative humidity greater than 20% can bias test results on certain plastics, and therefore humidity should be "controlled" to accurately quantify the losses solely to permeation. ARB has no data on humidity and, therefore, no basis for specifying a range. Also, controlling humidity may be exceptionally challenging and unnecessary in many cases. The humidity should simply be recorded as opposed to control. Any compliance testing conducted by

ARB should be done at the same humidity to avoid test result difference between ARB and the manufacturer. (OPEI)

Agency Response: Removed requirement to control humidity because the trip blank correction method accounts for this type of bias. ARB will follow TP-901 when performing compliance testing.

142. Comment: ARB should specify calibration requirements for other equipment used such as barometers, temperature, measurement devices, humidity, etc. ARB has such requirements in the current exhaust regulations. At a minimum, ARB should specify that these devices should be calibrated according to the manufacturer's recommendations. (OPEI)

Agency Response: Modified TP-901 to require manufacturer recommended calibrations.

143. Comment: ARB specifies that the pressure vacuum cycles should be applied to the fuel inlet/outlet. When HDPE tanks are blow molded in most cases, a hole or holes are drilled into the tank for later insertion of the fuel line and grommet assembly. We propose to ARB that the tanks selected for permeation testing do not have the drilling operation performed. This will prevent any possibility of leakage during the permeation test sequence. This would also require that the vacuum pressure cycle be conducted through the fuel cap.

We request that ARB add language indicating blow-molded tanks that have a secondary operation for drilling holes for insertion of the fuel line and grommet system may have these eliminated for purposes of durability and permeation testing. (OPEI)

Agency Response: Modified TP-901 to remove language requiring the pressure vacuum testing to be performed through the fuel inlet/outlet. Added suggested language for tanks that have a secondary operation for inserting the fuel line and grommet assembly. (OPEI)

144. Comment: ARB fails to provide specific information regarding a vented enclosure or shed. We look forward to working with you on defining appropriate guidelines. (OPEI)

Agency Response: Comment withdrawn by OPEI.

<u>Comment on TP-902</u>

145. Comment: Section 3 - Durability Demonstration: A durability test <u>procedure</u> should not require approval due to "changes to the evaporative family and/or components". Changing of components or features of a system do not alter the test required unless the changes result in new testing requirements. The reference to the engines "useful life" should reference the period used for the exhaust emission durability period, reference 2401 (a) (14) in place of "typical consumer use" for regulatory consistency. The ability to "duplicate" the effects of flow, heat, vibration,

slosh, etc. is a requirement to duplicate multi-use, grossly different situations into a single defined procedure is-not possible. A representative determination should be sufficient. Pressure/vacuum test the -1 psi requirement should reflect the same option as TP 901 #8 that allows up to 0 psi based on system design. The slosh testing specified is not adequately described. For example, it is unclear whether the 2.4 meter/second^2 for slosh testing is rate peak or RMS. It should be peak. The direction of vibration (horizontal, vertical, or rotating) must be specified. Our recommendation is horizontal. For vibration testing of the canister is not adequately described. It is unclear if the 4.5 m/s^2 canister vibration test peak or RMS. It should be peak. (EMA)

Agency Response: Replaced entire section with EMA suggested language received as comment on 30-day modifications.

146. Comment: Section 4 -General Summary of Test Procedure: We recommend that there be a process to allow pre vs. post durability testing to establish an additive DF to allow short-term results to be utilized for preliminary findings of compliance and equivalence.

“Purge carbon canister (if so equipped).” The procedure for purging the canister was previously described in Attachment 1 of the earlier draft of TP-902. It must be specified here.

The requirement to operate at “rated speed” for 5 minutes is not viable for all applications, e.g., rotary mowers where engine speeds are constrained by safety standards. We recommend that the engine be operated at the maximum governed speed setting available on the engine/equipment. (EMA)

Agency Response: Rejected suggestion because tanks with similar technologies have too much permeation variability.

The procedure to measure carbon canister working capacity was completely replaced with an EMA suggested method that is now included as attachment 1 of TP-902.

The suggestion for replacing “rated speed” with “maximum governed speed” was incorporated into the language.

147. Comment: Section 5.1 - Diurnal Evaporative Emission Measurement Enclosure: "Maintain a minimum air speed of 5 mph near the fuel tank". This requirement appears to be a carry over from other testing but it is not appropriate for engines and equipment in this category. We suggest that this be revised to provide for a 5-mph evaluation of the enclosure independent of the location of the fuel tank. This will eliminate the need for system alterations for different equipment and different orientations of the same equipment in the SHED. (EMA)

Agency Response: Language was revised to remove “minimum air speed of 5 mph near the fuel tank of the test engine” and replaced with “homogeneous mixture of air within the enclosure”.

148. Comment: Section 6.1 - Fuel Tank / System Preconditioning- See comments in Section 4 General Summary of Test Procedure. (EMA)

Agency Response: Same as response to Comment 146.

149. Comment: Section 6.2 - Refueling and Hot Soak Test- "Purge carbon canister (if so equipped)." The procedure for purging the canister was previously described in Attachment 1 of the earlier draft of TP-902. It must be specified here. (EMA)

Agency Response: Same as response to Comment 146.

150. Comment: Page 3 – The 6th bullet in the test procedure refers to a 1-hour soak profile. On page 11 at 6.2 – the hot soak is referred to as a test but no data from the test is required since on page 3 – 4 "general summary" only the results from the 24-hour test are used. Back to page 11 – at 6.3 "forced cooling" it is not clear that the SHED is purged after the two hour soak and prior to the 24-hour cycle. Please clarify the procedure that must be used to accomplish this test including a statement that the purge rate should be a number of bed volumes over a half hour time period. (Honda)

Agency Response: Deleted "profile" from the 6th bullet. Added language in Section 6.4 requiring the SHED to be purged to background levels prior to performing a 24-hour diurnal test. Modified Section 3 to specify the procedure for determining canister working capacity that includes a purge rate requirement.

151. Comment: Because of the non-integrated nature of this industry the engine manufacturer and the equipment manufacturer produce different parts of the final product. Exhaust systems, which will contain the catalyst, are often designed and sourced by the equipment manufacturer because they need to be carefully integrated into the product. We think that it would be appropriate for the engine manufacturer to provide installation instructions consistent with the engine application for certification describing the parameters and steps necessary for the final installation to comply with the standards. The equipment manufacturer would be responsible for following the instructions but could still retain flexibility in, and control of, his product design. (Honda)

Agency Response: Non-regulatory change, handled as part of certification.

152. Comment: A "hybrid evaporative system" defined as having both a canister and pressurized tank should not have design limits on the canister working capacity or control pressure. (Honda)

Agency Response: Modified TP-902 to remove canister and pressure design requirements for evaporative emission control systems that use a canister and a pressurized fuel tank.

III. MODIFICATIONS TO THE ORIGINAL PROPOSAL – FIRST NOTICE OF MODIFIED TEXT

At its September 25, 2003, public hearing, the Air Resources Board (the Board) approved the adoption of Sections 2750, 2751, 2752, 2753, 2754, 2755, 2756, 2757, 2758, 2759, 2760, 2761, 2762, 2763, 2764, 2765, 2766, 2767, 2768, 2769, 2770, 2771, 2772, and 2773, title 13, CCR, along with the incorporated "Small Off-Road Engine Evaporative Emission Test Procedures, TP-901 and TP-902" and the incorporated "Small Off-Road Engine Evaporative Emissions Control System Certification Procedures, CP-901 and CP-902." The purpose of those regulations and test procedures is to establish evaporative emission standards for small off-road engines, and equipment that use small off-road engines, less than or equal to 19 kilowatts. The Board also approved the adoption of Sections 2405.1, 2405.2, and 2405.3 and amendments to Sections 2400, 2401, 2403, 2404, 2405, 2407, 2408, and 2409, title 13, CCR, along with amendments to the incorporated "California Exhaust Emission Standards and Test Procedures for 1995 and later Small Off-Road Engines," as last amended January 28, 2000, title 13, CCR. In addition, the Board approved the adoption of the incorporated "California Exhaust Emission Standards and Test Procedures for 2005 and Later Small Off-Road Engines." The purpose of those modifications to the regulations and test procedures is to include more stringent exhaust standards for small off-road engines less than or equal to 19 kilowatts. In addition, the purpose of the updated test procedures is to more closely harmonize with the federal small engine test procedures (40 CFR, part 90, subparts A, B, D, and E and corresponding appendices).

At the hearing, the staff presented, and the Board approved modifications to the original regulatory text proposed in the Staff Report released on August 8, 2003, in response to comments received since the Staff Report was published. The following describes the modifications made available for public comment, by section number. These modifications were made to incorporate the changes approved by the Board, incorporate changes proposed in the comments summarized above and for the purpose of clarifying the regulatory text.

A. Exhaust Regulations

§ 2400 - Applicability

Paragraph (a) was modified such that the regulations may apply to zero-emission small off-road equipment.

§ 2401 - Definitions

Definitions for "small off-road equipment" and "zero-emission small off-road equipment" were added.

§ 2403 - Exhaust Emission Standards and Test Procedures - Small Off-Road Engines

Paragraph (b)(1) was modified to reflect two compliance options available to manufacturers certifying to the exhaust emission standards. The first option (Option A) includes a 2007 and later standard of 8.0 grams per kilowatt-hour (g/kW-hr) for engines between 80 and 225 cubic centimeters (cc), and a 2008 and later standard of 6.0 g/kW-hr for engines greater than or equal to 225 cc. The second option (Option B) includes a 2007 and later standard of 10.0 g/kW-hr for engines between 80 and 225 cc, and a 2008 and later standard of 8.0 g/kW-hr for engines greater than or equal to 225 cc. Footnote seven was added to specify the corresponding evaporative emissions compliance options available to manufacturers, as specified in Sections 2754, 2754.1 and 2751(b), title 13, CCR.

Paragraph (b)(2)(A) was modified to expand the definition of Blue Sky Series engines to include zero-emission small off-road equipment. In addition the voluntary low emission standards were modified to reflect a 50 percent reduction from the exhaust standards in Option B.

Paragraph (b)(2)(B) was modified to specify that engine families that comply with the Blue Sky Series emission standards may comply with any of the applicable evaporative emission standards, as noted in Sections 2754 or 2754.1 or 2751(b) or 2757, title 13, CCR.

§ 2404 - Emission Control Labels and Consumer Information - 1995 and Later Small Off-Road Engines

Paragraph (c)(4)(A) was modified to specify an alternative engine label heading.

Paragraph (c)(4)(D) was modified to reference the most recent document.

Paragraph (d) was modified to specifically state a manufacturer's ability to include references to compliance with Canadian or European standards on the engine label.

B. Exhaust Test Procedures

§ 90.1 - Applicability

This section was modified such that the provisions may apply to zero-emission small off-road equipment.

§ 90.3 - Definitions

The definition for "span gas" was removed. "Span gas" is later defined in Section 90.312.

§ 90.103 -Exhaust emission standards

Paragraph (a)(1) was modified to be consistent with the changes made to Section 2403(b)(1), title 13, CCR, as noted earlier.

Paragraph (a)(3) was modified to be consistent with the changes made to Section 2403(b)(2), title 13, CCR, as noted earlier.

§ 90.106 - Certificate of conformity

Paragraph (a)(2) was modified to remove the specific time requirement in which the Executive Officer may request a manufacturer to submit a letter of intent prior to the submitting an application for certification. The Executive Officer may still request a manufacturer to submit a letter of intent to better allocate certification resources.

§ 90.107 - Application for certification

Paragraph (d)(13) was added to include certification application instructions for zero-emission small off-road equipment.

§ 90.117 - Certifications procedure - test engine selection

Paragraph (c) was modified to remove a ten-day requirement for Executive Officer approval of test engines.

§ 90.118 - Certification procedure - service accumulation and usage of DFs

The test procedures currently allow engine manufacturers to use auxiliary fans during testing. Paragraph (f) was added to require engine manufacturers to provide the Executive Officer with information regarding the use of auxiliary cooling fans and demonstrate the need for supplemental cooling to represent in-use engine operation.

§ 90.122 - Amending the application and certificate of conformity

Paragraph (d)(4) was modified to reference the correct section (Section 2408(f)(2), title 13, CCR) which specifies the appropriate procedures to determine manufacturer compliance based on corporate averaging.

§ 90.123 - Denial, revocation of certificate of conformity

Paragraph (b)(5) was modified to reference the correct section of the test procedures (Section 90.126) which defines "reasonable assistance."

§ 90.307 - Engine cooling system

Similar to the modification to Section 90.118 noted above, this section was modified to specify that the use of auxiliary cooling fans during testing must be approved by the Executive Officer prior to testing.

C. Evaporative Regulations

§ 2750 – Purpose

Paragraph (a) was modified to delete reference to “new equipment utilizing”. The reference to “25 horsepower” was replaced with a reference to “19 Kilowatts.”

Paragraph (b) was added to describe the three compliance programs approved by the Board on September 25, 2003. Two of the compliance programs were not included in the Staff Report and reflect compliance flexibility requested by industry.

§ 2751 – Applicability

Paragraph (a)(4) was deleted because the intent of the regulation was not to enforce against users of small off-road engines.

§ 2752 – Definitions

Paragraph (a) was modified to reflect the definitions in Section 2403 (b), title 13, CCR, describing engine classes.

Paragraph (a)(4) was modified to reference test procedures incorporated in Article.

Paragraph (a)(5) was modified to include tanks approved through Section 2767 (innovative products).

Paragraph (a)(6) was modified to specify the test temperature, pressure, and fuel to use when fuel hoses are tested per Society of Automotive Engineers (SAE) J1737.

Paragraph (a)(15) was added to define “Evaporative Family Emission Limit”.

Paragraphs (a)(19) and (a)(20) were modified to reference test procedures incorporated in Article.

Paragraph (a)(23) was added to define “Running Loss Emissions”.

Paragraph (a)(25) was added to define “Small Volume Manufacturer”.

Paragraph (a)(29) was modified to reference test procedures incorporated in Article.

Paragraph (a)(30) was modified to clarify the definition of a “Walk-Behind Mower”.

§ 2753 – Certification

Paragraph (a) was modified to clarify the description of an evaporative emission control system on engines less than or equal to 80 cc, and require certification for control systems certified to design standards. Additionally, text prohibiting the operation of non-certified equipment in California was removed.

Paragraph (b) was modified to describe certification under Section 2754, Section 2754.1(a), Section 2754.1(b), and Section 2757.

Paragraph (c) was modified to describe allowable equipment modifications under the three compliance options.

Paragraph (d) was added to specify the reduced certification requirements for equipment meeting the requirements of Section 2766.

§ 2754 – Evaporative Emission Performance Standards

Introductory paragraph and Diurnal Evaporative Emissions Standards table were modified to clarify applicability. A footnote was added under the table to specify the required number of significant digits for a test measurement of diurnal emissions.

§ 2754.1 – Alternative Performance Standards

This section was added that details two new compliance options not reflected in the Staff Report that were approved in concept at the Board hearing on September 25, 2003. Section 2754.1(a) details a compliance option that requires diurnal testing of equipment to alternative standards. Section 2754.1(b) reflects a compliance option that allows certification by design.

§ 2754.2 – Certification Averaging and Banking

This section was added to allow averaging and banking of credits for engines and equipment certified to diurnal performance standards.

§ 2754.3 – Validation Plan

This section was added to require inventory validation studies of engines and equipment certified under Sections 2754.1(a) and 2754.1(b) to assist in ascertaining whether the goals of the regulation were being met.

§ 2755 – Permeation Emissions Performance Standard

Permeation rate table was modified to clarify applicability. A footnote was added under the table to specify the required number of significant digits for a test measurement of permeation rate.

Paragraph (a) was modified to exclude data submittal for “equivalent tanks”.

§ 2757 – Optional Performance Standards

Section was modified to clarify intent and applicability.

§ 2758 – Test Procedures

Paragraph (c) was modified to reflect test procedure for demonstrating compliance with optional performance standards.

§ 2759 – Equipment and Component Labeling

Paragraphs (c)(2), (c)(3), and (c)(4) were modified to clarify applicability.

Paragraph (c)(4)(C) was modified to reference standardized SAE abbreviations.

Paragraph (c)(4)(E) was modified to reflect intent to require model year (MY) in a "statement of compliance".

Paragraph (c)(4)(F) was removed because engine displacement is already identified on exhaust label.

Paragraph (c)(4)(G) was relabeled and modified to clarify evaporative families for engines less than or equal to 80 cc.

Paragraph (d) was modified to allow the label to include conformance with Federal, Canadian, and European emission standards.

Paragraph (g) was modified to clarify that sample labels are not required for carry over certification unless revised.

§ 2760 – Defects Warranty Requirements for Small Off-Road Engines

Paragraph (a) was modified to clarify applicability.

Paragraph (c)(8) was modified to require manufacturer approved replacement parts.

Paragraph (d) was modified to include a footnote clarifying the warranty parts list.

§ 2761 – Emissions Related Defect Reporting Requirements

Paragraph (d) was modified to clarify applicability.

§ 2762 – Voluntary Emission Recall Program

Paragraph (d) was modified to clarify time frame for information retention.

§ 2763 – Ordered Recalls

Paragraph (a)(1) was modified to clarify applicability.

§ 2764 – Evaporative Emission Control Warranty Statement

Paragraph (a) was modified to clarify that for engines less than or equal to 80 cc, only the fuel tank is covered by the evaporative emission control warranty requirements. Also clarified the term "Emissions" for a combined warranty statement.

§ 2765 – New Equipment Compliance Testing

Paragraph (a)(1) was modified to allow the Executive Officer to specify design specification in an Executive Order of Certification.

Paragraph (a)(1), (a)(2), (a)(3), and (a)(7) were modified to include fuel lines and carbon canisters.

Paragraph (a)(7) was modified to clarify acceptance criteria for test results.

Paragraph (b) was modified to clarify applicability and allow 30 days for a manufacturer to notify the Executive Officer that they intend to provide additional information and/or test results. New language was added that requires the Executive Officer to consider information and corrective actions taken by the manufacturer to remedy a failure.

§ 2766 – Exemptions

Paragraph (a) was modified to require certification and clearly specify tanks exempt from Section 2755. Language was added to clarify that permeation data are not required in a certification application for exempt tanks.

Paragraph (b) was modified to clarify the definition of a “Small Volume Manufacturer” and the conditions for an exemption.

Paragraph (b)(2) was modified to reference TP-902 for measuring butane working capacity.

§ 2767 – Innovative Products

Paragraph (b) was modified to reduce number of samples from 30 to five.

§ 2768 – Variances

Paragraph (g) was modified to specify that a variance will not be granted for more than one full model year after the year initiated.

§ 2772 – Penalties

Section was modified to allow the Executive Officer discretion in determining equitable relief. Section was modified to specify that penalties apply on a per engine or equipment basis and that each day of violation is a separate violation.

D. Evaporative Certification Procedures

CP-901, Certification and Approval Procedures for Small Off-Road Engine Fuel Tanks

Section 2.1 – Performance Standards

Clarified intent of compliance demonstration.

Section 5.1 – Certification Process

Subsection 5.1.1 - Clarified that the test result of the test tank may be applied to other families made of the same material/process.

Section 6.2 – Letter of Intent

Added language allowing manufacturers to combine exhaust and evaporative Letters of Intent together.

Section 6.4 – Equipment Labeling

Added language allowing drawings of labels to be submitted with the certification application with the ARB retaining the right to request actual labels.

Section 6.7 – Certification Test Fuel

Added language allowing the use of Indolene Clear as a test fuel.

CP-902, Certification and Approval Procedure for Evaporative Emission Control Systems

Section 1 – General Information and Applicability

Clarified that the certification procedure applies to small off-road engines or equipment > 80 cc.

Section 2.3 – Design Requirements

New paragraph clarifying intent of design requirements.

Section 4 – Certification Overview

Clarified applicability. Added language allowing engine and equipment to be certified under the exhaust family with the last three letters of the exhaust family referencing the evaporative family code. Added language specifying test data for evaporative system components when certifying under Section 2754.1(b), title 13, CCR.

Section 5 – Certification Process

Subsection 5.1.1 – Added language specifying test data to be submitted with the certification application. Added language allowing a retest without repeating the preconditioning process.

Section 7.2 – Letter of Intent

Reduced the time frame for the submittal of a Letter of Intent.

Section 7.3 – Cover Letter

Added language allowing cover letter information to be combined with exhaust certification.

Section 7.4 – Equipment Labeling

Added language allowing drawings of labels to be submitted with the certification application with the ARB retaining the right to request actual labels.

Section 7.5 – Engineering Description of Evaporative Emission System

New section that requires the evaporative emission control system to be described in the certification application.

Section 7.8 – Test Procedures

Re-enumerated to Section 7.9. Added references to the applicable test procedures.

E. Evaporative Test Procedures

TP-901, Test Procedure for Determining Permeation Emissions from Small Off-Road Engine Equipment Fuel Tanks

Section 1 – Applicability

Clarified applicability of test procedure.

Section 2 – Performance Standards

Added reference to tank permeation performance standard specified in Section 2754.1(b), title 13, CCR.

Section 3 – Principle and Summary of Test Procedure

Removed reference to high density polyethylene (HDPE) to allow other material types.

Section 4 – Biases and Interferences

Removed requirement to control relative humidity. Clarified level of humidity that may cause test bias.

Section 6 - Equipment

Section 6.1 – Removed reference to “HDPE” and hot plate temperature setting to allow fusion welding with other materials.

Section 6.3 – Added suggested vented enclosure operating requirements and tolerances.

Section 7 – Calibration Procedure

Added language that requires all instrumentation used to measure permeation to be calibrated per the manufacturer’s specifications.

Section 8 – Durability Demonstration

Adjusted specifications in the pressure/vacuum test portion of the durability demonstration. Clarified when pressure/vacuum testing is required.

Section 11 – Test Procedure with Buoyant Force Correction

Removed test procedure with buoyant force correction method.

Section 12 – Test Procedure with Trip Blank Correction

Re-enumerated and added a requirement to record relative humidity and barometric pressure.

Section 12.5 – Increased the number of 24-hour cycles over which the correlation coefficient must be calculated to ten.

Section 15 – Calculating Permeation Rate Using Buoyant Force Correction

Removed calculation for buoyant force correction.

Section 17 – Emission Factor

Removed emission factor definition.

Figure 1 – Removed buoyant force field data sheet.

Figure 2 – Re-enumerated to Figure 1 and added columns for recording relative humidity and barometric pressure.

<u>TP-902, Test Procedure for Determining Diurnal Evaporative Emissions from Small Off-Road Engines</u>

Section 1 – Applicability

The reference to “25 horsepower” was replaced with a reference to “19 Kilowatts”.

Section 3 – Durability Demonstration

Clarified requirement to submit for approval evaporative emission durability test procedures.

Section 3 Second Bullet – Replaced “duplicate the effects of flow of liquid and gases” with “simulate the effects of flow of liquid and gases”. Provided guidance for determining “useful life”.

Section 3 Fifth Bullet – Revised pressure/vacuum test applicability and requirements.

Section 3 Sixth Bullet – Clarified slosh test requirements.

Section 3 Seventh Bullet – Modified canister working capacity requirements. Modified ramp up and ramp down times for thermal cycling. Clarified magnitude of force for vibration exposure test.

Section 4 – General Summary of Test Procedure

Clarified diurnal test procedure requirements.

Section 5 – Instrumentation

Section 5.1 – Modified requirements to specify that a homogeneous mixture of air be maintained within the enclosure.

Section 6 – Test Procedure

Section 6.1 – Modified preconditioning requirements.

Section 6.2 – Deleted reference to test. Added requirements for canister purging.

Section 6.4 – Added requirement to purge enclosure to background levels after two-hour cold soak.

Section 8 – Alternative Test Procedures

Clarified intent to allow the use of a mini-SHED for performing diurnal test if test procedure is approved by the Executive Officer.

Several other non-substantial modifications were made throughout the regulations and test procedures to correct grammatical and typographical errors, correct references and citations, and improve the clarity of the regulations and test procedures.

IV. SUMMARY OF COMMENTS AND AGENCY RESPONSE – FIRST NOTICE OF MODIFIED TEXT

Written comments during the 30-day comment period were received from the following stakeholders:

- John McKnight, National Marine Manufacturers Association (NMMA)
- P.J. Cappel, United States Coast Guard
- Roger Gault, EMA
- William M. Guerry, Jr., OPEI
- David Raney, Honda
- Patricia M. Hanz, Briggs
- Amos Gottieb, Random Technologies

A. General Comments

153. Comment: The rulemaking file does not demonstrate adequate notice of the regulatory provisions negotiated by ARB staff and one company.

Much of ARB Staff's technical discussions have been held behind closed doors with one integrated manufacturer.

The regulations are the result of off the record negotiations between ARB Staff and one manufacturer.

There has been a history of secret dealings between public officials and one regulated party in this proceeding. (Briggs)

Agency Response: This is a patently absurd comment. Throughout its comments, Commenter refers to the negotiation between the ARB and "one company". Discussions with ARB staff are not required to be held at publicly noticed meetings. There have been a number of companies, including Commenter, who have requested, and were provided, access to ARB staff and the ARB executive staff at various times during the rulemaking period, and outside of a noticed hearing, to comment on the status of the rulemaking from their perspective. Further, such access was also provided on numerous occasions to OPEI and EMA of whom Commenter, as they note in their comments, is a member and represent Commenter's interests. Indeed ARB staff spent countless hours in telephone conversations and meetings with a number of companies and trade associations soliciting their input and incorporating that input into the regulations.

Any interaction between any member of the regulated community, or any association representing the regulated community, and a member of the Air Resources Board was disclosed by each Board member at the hearing.

Commenter fails to specify the company it implies received some sort of improper attention or identify what portions of the regulations were affected. Without understanding what provisions Commenter claims were negotiated, or with whom, it

is difficult to respond with any specificity or address further Commenter's allegations. It is ARB's policy to conduct rulemaking in an open and collaborative manner. As noted above, ARB staff spent many hours working with the regulated community during workshops, teleconferences and meetings. Over the last several months such communications were on virtually a daily basis. It is the public participation, this collaboration between ARB staff and the affected community, that is the essence of rulemaking.

The rulemaking file must contain the information required by law (refer Government Code §11347.3). Among other matters, the rulemaking file for this rulemaking will contain all written comments received during the comment period.

154. Comment: The proposed regulations are not sufficiently related to the proposed rules published at the start of the rulemaking.

OPEI and EMA could not have forecast that the proposed rules released by the ARB staff would be the result of the 2003 rulemaking notice and text.

No company could have had any idea the ARB would try to adopt a rule that would give integrated manufacturers a separate compliance path that would confer a competitive advantage.

ARB must issue a new 45 day notice and have another public hearing. (Briggs)

Agency Response: Commenter complains that the changes proposed by ARB staff to the Board at the public hearing on the evaporative emissions regulation were not sufficiently related to the text of the originally proposed regulation. Commenter misstates the requirements of the APA.

The term "sufficiently related" is a term of art, defined by regulation at title 1 CCR §42. The definition makes clear that the relationship at issue is not solely between the proposed amended text and the original proposed regulatory text, but between the proposed amended text and the notice of rulemaking. A change is sufficiently related if a reasonable member of the directly affected public could have determined from the notice that the changes to the proposed regulation could have resulted.

The notice of proposed rulemaking provides:

> The Air Resources Board (the Board or ARB) will conduct a public hearing at the time and place noted below to consider amendments to the small off-road engine regulations and test procedures, and adoption of evaporative emission standards, certification procedures, and evaporative test procedures for small off-road engines.

Although it is certainly true that the originally proposed regulatory language has been modified (and each modification made available as provided by law) the amended regulatory text remains fully consistent with the notice of rulemaking. Further, virtually all changes were brought about from discussions with the regulated community. For Commenter to now say that, because ARB staff listened to their

concerns and incorporated changes into the regulatory text as a result, ARB must commence a new regulatory process seems more than a bit disingenuous.

Lastly, Commenter complains that the ARB was required to provide an additional 45-day comment period on the proposed amendments to the regulatory text published with the initial notice of rulemaking, citing Government Code §11346.8(c). Again Commenter misstates the requirements of the law.

Government Code §11346.8(c) provides in pertinent part that in the event a state agency changes the regulatory text from that originally proposed, it must make available to the public the full text of the resulting change, with the changes clearly indicated, for at least 15 days. The ARB not only complied with this requirement but made available the full text of the resulting changes to the public for a period of 30 days, twice the time required by statute, from February 9, 2004 to March 11, 2004.

155. Comment: The proposed rules are too unclear to be enforceable, create unnecessary differences in the available compliance paths and will disrupt the competitive market for outdoor power equipment.

The new regulatory text and the manner in which it was developed violates numerous provisions of California law.

The exact meaning of the suspension penalty in 2754.1(b) is unclear.

The due process clause of the US Constitution requires a pre-deprivation hearing before suspension. (Briggs)

Agency Response: These comments are related to the inclusion of a provision allowing the Executive Officer to suspend a certification under §2754.1. This provision has been removed.

156. Comment: Section 2772 overrides basic constitutional principles.

Statutory penalties cannot attach during periods of bona fide judicial review of legislative acts.

The defendant is entitled to a full and fair hearing before an impartial tribunal. (Briggs)

Agency Response: Although it is difficult to ascertain the precise nature of the complaint, it appears that Commenter complains that section 2772 of the proposed regulation is unconstitutional because it imposes penalties which Commenter alleges cannot lawfully attach during a period of bona fide judicial review of a legislative act. Since the proposed evaporative standards will not become effective until the 2006 model year at the earliest, Commenter will have ample time to challenge the regulations before any penalties could be imposed.

The penalty provisions are patterned after the penalty provisions contained in the Health and Safety Code (see for example §42400(e) and §42402(d)) which have

been in place for over twenty-five years. This language in §2772 simply makes clear that its provisions will apply to each engine or item of equipment that does meet the requirements of the regulations.

Last, since ARB would be required to bring an action to collect civil penalties or criminal sanctions for any violation of its regulations, it is difficult to see how Commenter would be deprived of its right to a full and fair hearing. Such a hearing would be in addition to the protections provided under 13 CCR Chapter 15. Article 1.

157. Comment: The regulatory proposal included evaporative standards and test procedures for which ARB did not have reliable studies regarding feasibility or cost of compliance.

There is no rational connection between any assumed running loss test procedure and the performance standard.

It is ARB's burden to explain the relationship between its tests, the standards based upon those tests and how the tests the regulated industry must conduct will be suitable to those standards.

Any test procedures and standards upon which they are based must meet adjudicatory thresholds of reliability.

ARB's tests procedures and standards are speculative and untested in the relevant conditions. (Briggs)

Agency Response: The Staff Report published August 8, 2003 describes the studies ARB performed to evaluate the feasibility of the proposed standards. The Staff Report also contains detailed cost estimates to comply with the proposed standards. As part of negotiations with industry to allow alternatives to staff's proposal, there was a commitment to control additional running loss emissions. Rather than propose a standard and test procedure for running loss emissions, the staff proposal was modified to require a declaration concerning running loss control. Sealed fuel caps, low permeating fuel tanks, and the use of actively purged carbon canisters to control vented tank emissions during engine operations are required to control running loss emissions. The use of different technology to control running loss emissions must be approved by the Executive Officer based on an engineering evaluation of the control technology. The proposal was also modified to incorporate an industry suggested procedure for determining carbon canister working capacity.

158. Comment: The proposed regulations lack objectivity and fail to provide adequate notice of their requirement.

The February 2004 proposal does not meet basic requirements for clarity and objectivity. (Briggs)

Agency Response: The Health and Safety Code and Government Code contain provisions on the basic requirements for ARB's rulemaking. Neither of these codes

sets out a requirement, let alone a definition, of objectivity. Commenter failed to cite any statutory or case law requiring ARB to make a finding of objectivity.

With respect to clarity, as commenter notes, it is a defined term. The definition is found at title 1 CCR §16. ARB believes that the regulatory text is clear in its effect and purpose. The regulations have undergone a number of iterations as a result of informal communications, meetings with, as well as formal comments made by, the regulated community, including extensive comments made by OPEI and EMA, who represent Commenter.

The standards created by these regulations are clearly set out in the regulations and do not require the need for ”subjective judgment” in their application. The year a standard becomes applicable, the equipment to which that standard applies as well as the standard itself are expressed in plain language and depicted in a manner that any reasonable person could understand.

With respect to comments on the text of the regulations, these comments have been precise and to the point indicating that the regulatory text has been fully understood. Further, the regulatory text contains great many changes resulting from these comments. The text at this point is as much a product of industry's drafting efforts as ARB staff's. Both of Commenter’s major concerns, the suspension provisions contained in §2754.1 and the option A provisions, have been removed from the regulation. Since the suspension provisions in §2754.1 seemed to be the basis for this comment, it would appear that this matter is no longer at issue.

159. Comment: The rulemaking file does not demonstrate the independent analysis of each compliance path needed for full severability.

ARB's regulation must be necessary, cost effective and technologically feasible. ARB has not demonstrated compliance in the event of severability.

ARB must justify a partial regulation the same way it must justify the whole regulation.

If ARB intends to go forward with a partial regulation then it must justify the partial regulation the same way it must justify the whole regulation. (Briggs)

Agency Response: ARB is not required to anticipate that a court may sever certain portions of the regulations and on that basis attempt to ascertain and then analyze what portions of the regulations would remain. ARB does not believe that there any basis for a court to consider severability with respect to these regulations. Any such effort would be based solely on conjecture and serve no good purpose. Commenter has cited no authority requiring ARB to undertake such a senseless task.

160. Comment: The Executive Officer has added data to the record on which she has not solicited full public comment.

The Executive Officer needs to reopen the record to permit public comment on additional data included by ARB staff at the September hearing. (Briggs)

Agency Response: As part of the staff's presentation to the Board, the staff presented two charts with the emission test results generated at SwRI showing the emission levels achieved and the efficiencies of the test engines with catalyst systems. One chart was presented that showed the temperature data collected from the engines with and without catalyst systems. The majority of the data was provided to the public as part of the staff report and the attachments (the SwRI interim report). Supplemental data shown in the charts were not in the staff report, but were provided to staff from SwRI and disseminated to industry during the 45 day comment period. Of the 16 data points shown in the emissions charts, all but one data point were not made publicly available prior to the hearing. All of the 11 data points shown in the temperature chart were made publicly available prior to the hearing. These data simply provide additional support to the information provided in the staff report. These data do not change the conclusions and recommendations discussed in the staff report and presented to the Board at the hearing.

161. Comment: The rulemaking file does not demonstrate compliance with the California Environmental Quality Act (CEQA).

The regulations proposed by Briggs would provide greater emission reductions benefits than either the original proposal or the modified proposal.

The Board must approve written responses to comments before taking final action. (Briggs)

Agency Response: First, ARB has fully complied with the requirements of the California Environmental Quality Act. Secondly, Commenter misinterprets CEQA. The underlying purpose of CEQA is to ensure that public officials consider the environmental consequence of their decisions and to refrain from approving projects that could cause environmental harm where there are feasible alternatives. The issue is the effect the project before the decision making body, in this case the proposed regulations, has on the environment. Commenter, however, seems to believe that the issue is comparing Commenter's idea of what the regulation should be with ARB's proposed regulations.

Commenter has failed to identify any potential adverse impacts on the environment arising out of ARB's proposed regulation. Commenter only claims that its proposal is more environmentally beneficial. Since the regulation in its final form is essentially that proposed by industry, which Commenter supported, ARB does not see that there is any meaningful difference between the two.

Essentially, the final form of regulation results in the same amount of emissions reductions as that originally proposed. Changes to the original proposal due to comments from industry have not materially altered the environmental effect of the regulations and, as noted above, no evidence to the contrary has been submitted. The environmental discussion in the Initial Statement of Reasons, therefore, is as applicable to the final form of regulations as it was to the original proposal.

All comments will be considered by the Executive Officer before the regulations are submitted to the Office Administrative Law. As directed by the Board, and in accordance with the Health and Safety Code, the Executive Officer has been delegated the responsibility to finalize these regulations.

162. Comment: The family name for any integrated product or engine, without regard to the displacement category, should use the currently accepted family name for both exhaust and evaporative emissions. (Honda)

Comment: Specific calendar year or model year specifications are not appropriate because they require labeling change each year. Also engines or equipment certified to a standard in advance of the requirement cannot be properly identified. Suggested wording "THIS ENGINE MEETS 200X-YY CALIFORNIA EXH & EVP EMISSION REQUIREMENTS FOR SMALL OFF ROAD ENGINES" where X is the first year of the applicable regulations year and YY is the last year of the applicable regulations, YY can be replaced with "& later" if no prescribed future standards exist. (EMA/OPEI)

Agency Response: Sections 2404(c)(4)(H) and 2759(c)(4)(E) describe the compliance statement required on the engine and equipment label, respectively, and provide an example of how the compliance statement could read. The compliance statement provided in the aforementioned sections is only an example. Manufacturers may make modifications to the statement for their specific engine. The Executive Officer has the authority to approve abbreviations or modifications (see paragraph (E)). For instance, a manufacturer may modify the compliance statement to indicate certification to both the California and federal standards, or if the engine/equipment is certified to both the evaporative and exhaust emission regulations. Typically, ARB has allowed manufacturers to include a range of model years in the compliance statement if there is no change in the applicable standard during those years. The following are additional examples of acceptable language for compliance statements:

(1) For an engine certified to the exhaust emission regulations - "THIS ENGINE MEETS 20XX-YY CALIFORNIA EXH EMISSION REGULATIONS FOR SMALL OFF ROAD ENGINES."
(2) For equipment certified to the evaporative emission regulations - "THIS ENGINE MEETS 20XX-YY CALIFORNIA EVP EMISSION REGULATIONS FOR SMALL OFF ROAD ENGINES."
(3) For an engine certified to the exhaust and evaporative emission regulations - "THIS ENGINE MEETS 20XX-YY CALIFORNIA EXH and EVP EMISSION REGULATIONS FOR SMALL OFF ROAD ENGINES."

XX is the first year and YY is the last year of the applicable standards. YY can be replaced with "& later" if there is no future change in the prescribed standards.

B. Comments On The Exhaust Regulations And Test Procedures

Standards

163. Comment: Option "A" is subject to legal challenge and does not meet the requirement for a preemption authorization under Section 209(e)(2) of the federal Clean Air Act. (EMA)

"Option A" exhaust emission standards do not comply with the standards set forth by the Executive Order S-2-03, because the "Option A" exhaust standards pose unresolved and unacceptable safety risks, and they are not "necessary" as defined under California Government Code section 11349. In addition, the "Option A" exhaust emission standards do not meet the "nonduplication" standard as defined under California Government Code section 11349, and they are not "consistent with Section 209(e) of the federal Clean Air Act as recently modified by the U.S. Congress through Public Law 108-199. The California Health and Safety Code sections 43013 and 43018 direct ARB to achieve the maximum feasible and cost-effective emissions reduction from all mobile sources. Because the "Option A" exhaust standards are not cost-effective, the ARB has exceeded the scope of its regulatory authority. (OPEI)

Agency Response: Option A has been deleted.

Trans-shipment

164. Comment: The use of the phrase "introduced into commerce" in section 2403(b)(1) and section 90.103(a)(1) of the test procedures should be "offered for retail sale or sold to ultimate consumer" to prevent sales to OEM's for equipment to be ultimately sold outside of California and trans-shipment of product from being included. (EMA)

Comment: The use of the phrase "introduced into commerce" in section 2403(b)(1) and section 90.103(a)(1) of the test procedures is too broad and could result in the barring of trans-shipment of products through California distribution centers to out-of-state retailers. OPEI requests that ARB consider the following language.

(a) For the model year engines or equipment subject to this Article, no person shall:

(1) manufacture for sale or lease for use or operation in California, or
(2) sell or lease or offer for sale or lease for use or operation in California or
(3) deliver or import into California for introduction into commerce [and ultimate use or operation] in California [as opposed to the legal transshipment through California distribution centers to retail locations outside of California], [should be consistent with 2403 (b)(2)(A)]. (OPEI)

Agency Response: See agency response to Comment 25.

Recall

165. Comment: The only options provided for the Executive Officer are to withdraw the determination of nonconformity or force a mandatory recall. The Executive

Officer must have alternatives or flexibility to allow other options. OPEI suggests that ARB consider the language below.

"In evaluating whether to allow an individual manufacturer to propose and implement alternative plans to address potential non-compliance situations, rather than a mandatory recall, which would be impractical to implement, the Executive Officer will follow the federal policy restricting the recall of small gasoline engines. The federal policy is set forth at 64 Fed. Reg. 15208, 15219-15220 (March 30, 1999) and the relevant section of this policy (which ARB has incorporated) is shown below:
ARB, like EPA also recognize[s] the practical difficulty in implementing an effective recall program as it would likely be impossible to properly identify the owners of equipment using small engines (there is no national requirement to register the ownership of such equipment), and it is also highly questionable whether owners or operators of such equipment would respond to an emission-related recall notice. Therefore, under the final program ARB's intent is to allow manufacturers to nominate alternative remedial measures to address potential non-compliance situations, as the Federal proposed rulemaking notice discussed (*see* 63 FR 3992). ARB expects that, if successfully implemented, the use of these alternatives should obviate the need for the Agency to make findings of substantial nonconformity. In evaluating these alternatives, ARB would consider those alternatives which (1) represent a new initiative that the manufacturer was not otherwise planning to perform at that time and that has a nexus to the emission problem demonstrated by the subject engine family; (2) cost substantially more than foregone compliance costs and consider the time value of the foregone compliance costs and the foregone environmental benefit of the subject family; (3) offset at least 100 percent of the exceedance of the standard or FEL; and (4) are able to be implemented effectively and expeditiously and completed in a reasonable time. These criteria would function as ground rules for evaluating projects to determine whether their nature and burden is appropriate to remedy the environmental impact of the nonconformity while providing assurance to the manufacturer that ARB would not require excessive projects. In addition to being evaluated according to the above criteria, alternatives would be subject to a cost cap. ARB would apply a cost cap of 75 percent above and beyond the foregone costs adjusted to present value, provided the manufacturer can appropriately itemize and justify these costs. ARB believes that this is an appropriate value which is both "substantial" and sufficient to encourage manufacturers to produce emission durable engines." (OPEI)

Comment: The alternatives available to the Executive Officer are unnecessarily limited according to the current language. The determination must be withdrawal of the determination of nonconformity or force a mandatory recall. The Executive Officer must have additional alternatives or flexibility to allow other options. (EMA)

Agency Response: Staff disagrees with the conclusion. The recall language provides the Executive Officer with the appropriate flexibility to work with the affected manufacturers to remedy the noncompliance. Additionally, see agency response to Comment 24.

Catalyst Safety

166. Comment: NMMA recognizes two issues that have not been fully explored. First higher efficiency catalysts, which must be located closer to the engine, are likely to be needed to meet the standards. Moving the catalyst in the exhaust system could affect the design of this system. Second, generator manufacturers will need to work closely with boat builders to assure that the basic vessel design can accommodate any changes to the exhaust system. Adequate lead-time is needed to assure that these problems can be addressed in a manner that will assure the catalysts will properly operate in a marine environment. (NMMA)

Agency Response: Staff believes that the adopted exhaust emission standards may require low to medium efficiency catalysts or engine modifications to comply with the standards. For more discussion on this issue, see responses to comments 19 and 20. Based on prior regulatory development efforts, staff is aware that manufacturers of engines, generators, and boats currently work together to ensure that specifications needed to redesign equipment is available. Staff believes this will not change with the introduction of these standards. Additionally, a three-four year lead-time has been provided to accomplish the redesigns.

Auxiliary Cooling Fan

167. Comment: Auxiliary cooling fans are not defined. Engine test cells have air motion associated with maintenance of the air temperature during a test. This air motion is critical to the ability of ambient temperature control within the test cell environment and should not be considered auxiliary in the analysis by the Executive Officer. (EMA)

Comment: We suggest language to the effect "If auxiliary cooling is required during certification testing, quality assurance or break-in, the manufacturer shall develop and keep records on file that indicate the external cooling results in engine operating temperatures which would normally be expected during actual use in the field. Such data should provided to ARB upon request". (OPEI)

Agency Response: The test procedures specify that test cells shall be maintained at ambient temperature levels as defined in section 90.311(a). Typically, that is accomplished with adequate air conditioning. The test procedures provide for engine cooling fans to be used to simulate in-use conditions. Sections 90.118(f) and 90.307 have been modified to require manufacturers to justify to the satisfaction of the Executive Officer in the application for certification the need for and use of such fans. The manufacturer must also demonstrate that the supplemental cooling resulting from the use of the fans is representative of in-use engine operation.

Rated Power Calculation

168. Comment: OPEI requests that ARB harmonize (or at least allow as an alternative option) the method of rated power calculation in these sections to that of U.S. EPA. Current language in 2408(f)(1) which allows use of an alternative if approved by the Executive Officer is cumbersome. ARB's definition of rated power

is a sales weighted maximum modal power of all engine configurations in the family. The U.S. EPA uses the maximum modal power of the test engine (regardless of how many displacements and powers exist) in the family. Under current definitions it is possible to calculate a different amount of credits for the same family under the two systems. U.S. EPA's definition makes sense since we use the power from the test engine. When we have a family with multiple displacements, only one can be the test engine so it is not difficult to use this power in part of the sale weighted calculation. It is the non-test engines that are of concern. Manufacturers have to use a power level from a different section of the application (section 53 of FileMaker Pro). This is inconsistent. (OPEI)

Agency Response: The language in Section 2408(f)(1) has been modified to include "maximum modal power of the test engine" as an example of an alternate definition of "power" that may be approved by the Executive Officer, for use in calculating emission credits.

Certification

169. Comment: There is no time frame required for the Executive Officer to determine if a letter of intent is required. This could result in the Executive Officer asking for the letter of intent after the requirement for providing it. Based on historical certification backlog and the lack of letter of intent influence on the certification staffing activity, this requirement should be deleted. (EMA/OPEI)

Agency Response: See agency response to Comment 35.

170. Comment: OPEI requests that ARB provide an additive DF as an option along with the multiplicative DF. (OPEI)

Agency Response: See agency response to Comment 40.

171. Comment: The ARB language is the same as EPA's when taken in the context of EPA Phase II and when the ARB regulations apply to Tier II engines. However, the problem is that ARB's language also applies to 2005 and later California engines and there may still be Tier I Class I vertical shaft engines certified for sale in California until 2006. (OPEI)

Comment: Class I vertical shaft engines certified in model year 2005 without durability compliance standards should be allowed to use carry over certification without retesting to the new test procedure. (EMA)

Agency Response: In response to these comments, staff modified the language in Sections 90.409(a)(3) and 90.410(b) to specify that, for vertical shaft engines greater than 80 cc but less than 225 cc displacement and equipped with an engine speed governor, the manufacturer may carry over certification of its 2004 model year California certified engine family to the 2005 model year. The engine test results done without the use of the governor may be used for compliance. Prior written approval of the Executive Officer is required and the manufacturer must meet all other requirements for 2005 model year compliance.

172. Comment: ARB should consider allowing multiple engines without the need to get additional pre-approvals from the Executive Officer. EPA allows the testing of multiple engines with averages used. The additional confidence in the data generated if multiple engines are tested should not be disregarded by ARB in the certification process. (EMA)

Agency Response: See agency response to Comment 33.

173. Comment: The manufacturer should not have to explain its choice of test engine unless requested by ARB. Currently manufacturers select the worst case engine and provide rational to ARB upon request. (EMA)

Agency Response: See agency response to Comment 36.

174. Comment: This regulatory proposal continues to allow the option of using special test procedures that have been part of the small engine regulation since 1990. Eventually some of the special options offered to individual companies or promoted by industry groups are circulated in a Manufacturers Advisory Circular (MAC) for general use by all of the companies affected by the regulation. A MAC provides all manufacturers with an open understanding of, and equal access to, procedures that have been approved by the ARB staff. Three examples are the generator test cycle at 60 Hz, lawnmower engines used at single engine speed (no load idle at 3060), and the EMA durability test cycle. Future test examples might include evaporative durability demonstration, justification for supplemental cooling or variations of the CVS test procedure. Honda suggests that special test procedures be detailed in the certification application with a full explanation including the rationale. The ARB should then consider disseminating the information in the form of an advisory to all manufacturers. (Honda)

Agency Response: As noted by Honda, the ARB has disseminated special test procedures for public viewing. The staff believes this practice will continue and staff will consider a more timely publication of such procedures.

Electric Equipment

175. Comment: The Board directed staff to study zero-emissions equipment and to report in approximately six months. We believe that staff should complete this study as directed. The addition of zero-emissions definitions and related equipment to these SI engine regulations is not appropriate. (EMA/OPEI)

Agency Response: Zero emission equipment is included in the regulations as part of the optional Blue Sky Standards. This addition was presented by staff at the September Board hearing as a proposed regulatory change, and approved by the Board.

At the September 2003 hearing, the Board directed staff to evaluate the potential for increasing electric equipment in the small off-road category. Staff has presented the results of this study at a Board hearing in April 2004.

Exhaust Dilution System

176. Comment: For catalyst engines using an air injection system, the pressure of the CVS system can have an influence on the test results. A large negative pressure could increase the flow of air through a passive system and increase the conversion efficiency above the efficiency in normal operation. We recommend that in addition to referencing 40CFR parts 90.420-90.426 that ARB retain the pressure guidelines from Part IV Spark Ignition Engines – CVS Test Procedures. Section 2(b)(1) where the limits are described as within +/- 1.25 kPa for conventional engines or +/- 0.25 kPa for air injection engines. (Honda)

Agency Response: Per 90.420(c)(5), the critical flow venturi-constant volume sampler (CFV-CVS) system must provide that the sample CFV is in choke flow during testing and the positive displacement pump-constant volume sampler (PDP-CVS) system must provide a constant volumetric flow rate through the dilute exhaust sample probe or must incorporate electronic flow compensation. In general, these sampling systems (e.g., an electronic flow compensation with the PDP-CVS or a heat exchanger with the CFV-CVS) have sufficient capability to maintain stable gas flow rates in systems where maintaining stable, accurate gas flow rates is essential to overall engine test procedures. The language in the federal regulation provide sufficient tolerance to adequately test catalyst equipped engines. In addition, a change has been made in the test procedures to align with the federal regulations to reduce the testing burden on manufacturers.

Right of Entry

177. Comment: Section 90.126 refers to the ability of ARB staff to copy, take pictures, etc. There is no reference to manufacturer's ability to claim confidentiality of information obtained. Manufacturers must have the ability to control the release of any proprietary information. (EMA/OPEI)

Agency Response: See agency response to Comment 38.

Exhaust Systems Installation Instruction

178. Comment: We think that it would be appropriate for the engine manufacturer to provide installation instructions consistent with the engine application for certification describing the parameters and steps necessary for the final installation to comply with the standards. The equipment manufacturer would be responsible for following the instructions but could still retain flexibility in, and control of, his product design. Honda can not control the practices of an equipment manufacturer of whom we have no direct knowledge or where there is no contractual relationship that mandates certain system specifications. If there is going to be control of the product in the market it will be necessary to require the engine manufacturer to provide exhaust system installation instructions and that the equipment manufacturer follow those instructions. (Honda)

Agency Response: ARB would allow, and would expect, engine manufacturers to provide instructions/specifications to the equipment manufacturers for installation of the catalyst/exhaust system. However, the engine manufacturer is still responsible and liable for compliance of the engine with the emission standards. Additionally, see agency response to Comments 39 and 43.

C. Comments On The Evaporative Regulations

Applicability

179. Comment: The use of the phrase "Introduction into commerce" in section 2751(a)(3) is too broad and could result in the barring of transshipment of products through California distribution centers to out-of-state retailers. OPEI request that ARB consider the following language.

(a) For model year engines or equipment subject to this Article, no person shall:
(1) manufacture for sale or lease for use or operation in California, or
(2) sell or lease or offer for sale or lease for use or operation in California, or
(3) deliver or import into California for introduction into commerce [and ultimate use or operation] in California [as opposed to the legal transshipment through California distribution centers to retail locations outside of California] (EMA/OPEI)

Agency Response: See agency response to Comment 25.

180. Comment: Needed clarification that ARB's regulations do not apply to products that are transshipped through and never intended for use in California.

Many equipment manufacturers and most of the large national retail chains (such as Wal-Mart, Lowes, Home Depot, etc.) operate regional distribution centers in California. These California distribution warehouses receive and "transship" U.S. EPA-compliant (ARB non-compliant) products to stores located throughout the West. There would be no environmental justification or benefit to California if ARB tried to restrict or impose penalties on products that are transshipped to Western states or overseas through distribution centers based in California. However, ARB's proposed evaporative and exhaust regulations could be misconstrued as applying to these transshipped products in direct conflict with ARB's stated intentions. This potential interpretive problem directly results from ARB's proposed overly-broad and ambiguous definition of the term "introduction into commerce". (*See* Sections 90.103 and 2751(a)(3).)

If ARB's final regulations continue to imply that manufacturers are prohibited from selling ARB non-compliant products "transshipped" through California regional distribution centers in California, then it would inappropriately and perhaps illegally impose a severe burden on interstate commerce. Interstate commerce is not subject to state regulation while in transit. 13 Cal. Jur. 3d Constitutional Law § 228. The origin and destination of a shipment determine its character, and once an interstate character attaches, it adheres throughout the movement of the goods, unless they are delayed within a state by the owner for a profitable purpose. *Id.* Essentially,

courts have interpreted the Commerce Clause of the United States Constitution, art. 1, § 8, cl.3, to prohibit localities and states from imposing taxes or regulations that burden foreign or interstate commerce, because the power to regulate foreign and interstate commerce is reserved for the Federal Government. In fact, the threat of such penalties or restrictions could directly injure California businesses and California workers by forcing the major equipment manufacturers and retailers to relocate their California distribution centers to other states. In order to clarify that the regulations only apply to units intended to be introduced and ultimately used in California, OPEI proposes to qualify the term "introduced into commerce," so that it excludes transshipped products and only applies to products intended to be used in California. (*See* Sections 90.103 and 2751(a)(3) of the Issues List, attached as Exhibit A.) (OPEI)

Agency Response: This comment has been repeatedly discussed throughout the entire rulemaking process. Commenters attempt to create an issue where none exists. This language has been in the regulations for some time. Commenters cannot point to, because there has not been, any enforcement action taken against engine/equipment temporarily located in California for a final destination outside California. There have been instances where ARB staff has inquired about equipment located in California that has not been labeled (and not certified). The manufacturer was required to produce evidence that the items were not to be sold in California. As a result n
o enforcement action was taken.

The Commenter proposed language that effectively precludes enforcement of these regulations against manufacturers, either by requiring a retail sale or by adding the requirement that ARB would have to show that the manufacturer imported with the intent to sell uncertified items in California. ARB has used, and will continue to use, enforcement discretion when appropriate. A manufacturer cannot be insulated from an enforcement action where it, in some way, has aided or allowed an uncertified item to be sold or made available for sale in California. The regulations must contain sufficient flexibility for staff to determine, based on the facts of each case, whether the manufacturer shares some culpability in uncertified engines or equipment being operated in California. Commenters seek to eliminate that flexibility based solely on improbable hypotheticals. The so-called "threat" of enforcement has been existent for some time. Commenters have not provided any evidence that any manufacturer has moved a warehouse to another state based on this perceived threat.

181. Comment: Section 2751(b) - ARB should add the following language to the applicability section. "This Article does not apply to snow throwers or ice augers." (OPEI)

Agency Response: Incorporated suggested language because snow throwers and ice augers are not a significant source of emissions.

182. Comment: Section 2751(b) - This article should not apply to engines utilized in equipment where the fuel system is not exclusive to the small off road engine, e.g. motor homes or marine vessels where the small engine powered generator utilizes the fuel tank associated with the main propulsion engine. (EMA)

Given the potential impact of these rules, NMMA has had numerous discussions with boat builders, marine fuel tank manufacturers, marine generator manufacturers and the U.S. Coast Guard regarding a common-sense approach to addressing ARB's concerns while reducing the potential for significant marine safety problems and the disruption to the boat building and marine fuel tank businesses. The proposal described below for evaporative controls has been discussed with ARB staff in the spirit of cooperation that NMMA has built with ARB over the course of several rulemaking actions. It is NMMA's understanding that the ARB staff supports the evaporative proposal set forth below.

Evaporative Emissions
NMMA would support a requirement to install a fuel hose that meets a 15-g/m^2 permeation limit for the line that provides fuel to the generator. (NMMA)

An additional exemption should be allowed for engines utilized in equipment where the fuel system is not exclusive to the small off-road engine, e.g. motor homes where the small engine generator utilizes the vehicle fuel tank. (OPEI)

The Coast Guard asks that the Air Resources Board reconsider its action of including marine generators installed in recreational boats within the current SORE rules and that the Board address the particular requirements of these engines separately. (Coast Guard)

Agency Response: Added a conditional exemption in Section 2766 for generators fueled from the tank of an on-road vehicle or marine vessel. To be eligible, the generator must use a hose that meets the permeation design requirement of 15-g/m^2/day specified in 2754.

Definitions

183. Comment: Section 2752(a)(5) – "Equivalent Fuel Tank" as defined is not acceptable. Fuel tanks with equivalent permeation performance that are the same size or smaller should be considered equivalent. (EMA/OPEI)

Agency Response: Added language referencing 13 CCR Section 2767, which specifies the process for demonstrating equivalent fuel tank permeation performance.

184. Comment: Section 2752(a)(9) – OPEI does not understand the restrictions on engine exhaust and evaporative family names for engines and equipment less than or equal to 80 cc. (EMA/OPEI)

Agency Response: Added language that the engine family and the evaporative family for integrated equipment greater than 80 cc, may be considered equivalent. Modified regulations to allow the last two characters of the engine family to be used as the identifier for the evaporative family for engines or equipment > 80 cc at the manufacturer's discretion.

185. Comment: Section 2752(a)(10) – "Evaporative Family Emission Limit" definition should be changed to "Evaporative Model Emission Limit". (EMA/OPEI)

Agency Response: Modified Section 2752(a)(10) to incorporate suggested change.

186. Comment: Section 2752(a)(25) – This language should be for Small Volume Evaporative Family. (EMA/OPEI)

Agency Response: Changed definition from "Small Volume Manufacturer" to "Small Production Volume Tank Exemption" to clarify applicability.

Certification Requirements and Procedures

187. Comment: Section 2753(b)(1) – The requirement to submit data should be expanded to allow the Executive Officer discretion over the means evidence of compliance is submitted. (EMA/OPEI)

Agency Response: Added Section 2767.1 which specifies the process for obtaining an Executive Order approving fuel system components. Modified Section 2753(b)(1) to allow the submittal of the Executive Order number approving the component pursuant to Section 2767.1.

188. Comment: Section 2753(b)(4) - The California standard is based on engine displacement and the term "handheld products" at the end of the first line and at the beginning of the second line does not have a meaning and should be deleted. (Honda)

Agency Response: Deleted term "used on handheld products".

Evaporative Standards and Requirements

189. Comment: Metric System Units Section 2754 – For harmonious metric terminology throughout the proposed regulation we recommend changing the equation for standard determination based on tank volume to liters (from gallons) and changing the multiplier so that the standard has the same value. (Honda)

Agency Response: Incorporated suggested change.

190. Comment: ARB should unify Sections 2754.1(a) and (b) into a single regulatory section. (EMA/OPEI)

Prior to the publication of the Proposed Modifications, and in an effort to provide ARB with a model for a more cost-effective and feasible program, EMA and OPEI jointly proposed a unified performance and design-based program (the "Unified Program"). That comprehensive Unified Program was submitted as a complete replacement for (not as an add-on to) the ARB's unworkable and cost-prohibitive draft Rule. The Unified Program provided, among other key elements, a single time line for implementation of emission standards, including a 3-year pull-ahead of a design-based program for walk-behind mowers. The Unified Program also was

premised on ARB's previously expressed support for industry's proposed validation program to prove out the efficacy of a design-based approach, and on ARB's commitment to exclude winter-time only products from the evaporative emission control requirements.

In its Proposed Modifications, however, ARB has retreated from its expressed commitment to consider industry's Unified Program as a whole, and instead has cherry-picked (solely to its advantage) certain select items from what industry intended to be a single and indivisible replacement program. For example, ARB has proposed to implement the revised pull-ahead schedule for the SORE emission standards, but has reserved unto itself the authority to suspend the design-based certification program (through the Suspension Provision). ARB also has undermined the utility of the validation program through the Suspension Provision, and has failed to exclude winter-only products from the evaporative emission requirements (although Staff has asserted that this latter failure may be an oversight). In addition, as discussed above, ARB has incorporated industry's design-based proposal as an alternative program, not as a replacement.

The ARB staff has acted in a manner inconsistent with its commitment to work with stakeholders by submitting the cherry-picked Proposed Modifications for approval. As discussed at length over the past months, there are many reasons why the Unified Program is the most cost-effective program for SOREs. Those reasons remain valid. Thus, ARB should not re-trade the deal that led to the development of the Unified Program, but instead should adopt that program in whole and as a replacement for the infeasible and overly-costly Option "A" program. (EMA)

To reduce market disruption and unfair competitive impacts, ARB has appropriately recognized the need to improve its regulations by establishing: (1) one single set of performance-based standards applicable to WBMs; and (2) equivalent design-based and performance-based standards for products other than WBMs that will be phased-in on the same schedule. The proposed regulations do not clearly or fully incorporate ARB's intent. Instead, the proposed regulations are still based on the bifurcated, regulatory vestiges of the prior unequal and problematic Options B and C. This unnecessary regulatory-bifurcation distorts the program and creates the misperception that there are still two separate and unequal compliance paths. To more clearly and accurately reflect ARB's intent, ARB should combine Sections 2754.1(a) and (b) into a single, unified regulatory section. (OPEI)

Agency Response: Modified Section 2754 to include a table that contains the performance standards in Section 2754.1(a) and the design standards in Section 2754.1(b). The section was also modified to impose consistent implementation dates and standards. The intent of the modifications is to establish equivalent compliance options.

191. Comment: Certification plans should be based on a much simpler streamlined process. (EMA/OPEI)

To prevent gaming between the prior unequal, Options B and C standards, ARB originally established certification plans that required a manufacturer to commit to

certify an evaporative family in all future model years under the same chosen compliance option. Because ARB has now unified the prior Options B and C into a single uniform program with equivalent standards and effective dates, the entire certification plan requirement should be streamlined or eliminated entirely since the plans are no longer necessary. There is no longer a need for ARB to require certification plans to prevent gaming between disparate options. Consequently, at a minimum, manufacturers should be allowed to change between the design-based and performance-based standards in successive model years for a particular evaporative family. (OPEI)

Agency Response: Deleted language in Section 2754.1 that required the selection of a particular compliance path.

192. Comment: Proposal to suspend design-based option under Section 2754.1(b)(2) is problematic. (OPEI)

The proposed regulations largely incorporate OPEI's proposed and expanded validation study program (Section 2754.3), which will provide ARB with a substantial data pool to evaluate whether ARB's evaporative regulations are achieving ARB's overall emission reduction goals. Industry agreed to incur the substantial additional costs of testing a much larger number of units under the validation program based on our following agreement: (1) the validation study would not result (without Board action) in either the industry, or an individual manufacturer losing the right to use and rely on the design-based compliance option in proposed Section 2754.1(b); (2) the separate standards and effective dates applicable under prior Sections 2754.1 (a) and (b), would be unified to create equivalent design-based and performance-based standards with the same effective dates; and (3) winter exclusive products would be exempt. In contradiction to this agreement, ARB's new proposed Section 2754.1(b)(2) would effectively require each manufacturer to comply with the diurnal emission factors or lose the ability to certify through the design-based approach.

It Would Be Unfair and Illogical For ARB to Apply Average Diurnal Emission Factors to Individual Units as a De Facto Compliance Level

ARB proposes to revoke (for two model year) an individual manufacturer's right to rely on Section 2754.1(b) if the emissions from the "majority of equipment" certified by a manufacturer under the design-based standards are higher than the modeled, average diurnal emission factors. This proposal is so vague that it raises new uncertainties which are addressed below. It also fails to respond to the general objections (raised by OPEI in our January 14th correspondence) with regard to the likely elimination of the design-based option for most manufacturers.

First, ARB cannot legally turn average diurnal emission factors into de facto, enforceable compliance levels that must be met by each individual unit in order for a manufacturer to rely on the design-standard certification option. Such a distortion of the design-based program would undermine its intended purpose – to allow manufacturers to rely on and install approved components or designs, rather than having to SHED test each individual product family because such SHED testing would not be cost-effective or practical. If an individual manufacturer is found to be

in non-compliance with an applicable design-based standard, then ARB has an already specified menu of enforcement remedies available (such as imposing penalties). If the validation program indicates that the design-based program is not adequate, then ARB has the power to increase the scope or stringency of the program through a future rulemaking.

Second, if an equipment manufacturer loses the ability to certify products through the design-based process, then that manufacturer will likely be prohibited (because of cost and practical considerations) from selling products in California. Consequently, a manufacturer should never lose the right to the design-based certification option. For this reason, OPEI urges ARB to eliminate proposed Section 2754.1(b)(2) in its entirety.

Proposed New § 2754.1(b)(2) is so Vague that it Fails to Provide the Needed Regulatory Clarity

The proposed new Section 2754.1(b)(2) is so vague that it fails to provide the necessary regulatory "clarity". (See California Government Code § 11349(c) and companion OPEI comments on the application of Governor's Order S-2-03, attached as Exhibit B.) It is difficult for OPEI to submit constructive comments on proposed § 2754.1(b)(2) because the regulated community does not understand what it means and how it would be applied.

First, Section 2754.1(b)(2) is unclear as to whether an individual manufacturer or the whole industry would risk ARB suspending the use of the design-based option. From oral discussions, we understand ARB intends to exclusively apply this provision as a remedial measure only against individual manufacturers. The current proposed wording requires further clarification.

Second, ARB's proposal implicitly assumes that ARB would receive a large enough database of test data on a manufacturer's product line to determine if diurnal emissions from "the majority of his equipment" is higher than the modeled emission factor. It is unclear how this process would work. In its proposed form, manufacturers could unfairly lose the design-based option because of limited and unrepresentative test results.

Third, ARB fails to define the scope or pool of data on which ARB would rely on to evaluate whether the diurnal emissions from a "majority" of a manufacturer's certified equipment were higher than the modeled, diurnal emission factors. What would be the scope of data considered? Assuming the scope includes all data generated under ARB's New Equipment Compliance Testing Program (§ 2765), the validation study (§ 2754.3) and other programs, how would all such data be treated equally? How would conflicts in data be resolved? Who would be responsible for determination if the high diurnal emitting product was compliant with the component design requirements as specified in 2754.1 (b)?

Fourth, how would ARB obtain data from a representative, substantial sample of a manufacturer's entire product line? For example, if a manufacturer only certifies one evaporative family in California, then could they lose the design-based certification

option based on test results from one product within the family? Conversely, if a manufacturer certifies 15 evaporative families, would ARB obtain diurnal data on all of these families to make a determination that the majority of families exceeded the diurnal emission factor?

Fifth, ARB staff has consistently represented that the loss of the design-based option would be an extreme enforcement measure reserved for manufacturers that have "substantially and repeatedly exceeded" the expected diurnal emission levels with a majority of their equipment. In the new product compliance determination, factors of up to 1.5 times the standard level are identified as acceptable production tolerances. (See Section 2765.) However, the proposed diurnal limits in Section 2754.1(b)(2) fail to recognize any similar compliance margin or to establish a more reasonable compliance bar representing a "substantial exceedance". In fact, Section 2754.1(b)(2) even fails to address how ARB will respond to the likely deviations between different products in the same evaporative family in order to determine the average level of emissions.

Sixth, what procedure would apply to a manufacturer that sought to dispute or rebut a proposed determination by the Executive Order that a "majority" of that manufacturer's design-based equipment failed to meet the modeled diurnal emission factors? For example, how would such a manufacturer be able to submit additional data showing that ARB had relied on inaccurate or unrepresentative data and that the majority of his equipment actually meet the diurnal emission factors?

ARB Cannot Revoke Or Suspend A Manufacturer's Right Or Privilege To Certify Product Under The Design-Based Program Without Establishing A Clear Executive Order Review Process

The loss of the design-based compliance option for all of the manufacturer's product lines would impose an even greater business impact than the loss of a certificate for a particular evaporative family. Despite this fact, Section 2754.1(b)(2) fails to establish any process under which a manufacturer could respond with relevant information to rebut an Executive Order's notice of his intent to suspend the manufacturer's use of the design-based option. This is yet another substantial problem with proposed Section 2754.1(b)(2). In addition, if the factors supporting any Executive Order suspension are not a result of a regulated component being out of compliance with the applicable design-based standards, the manufacturer cannot be prevented from producing products for a reasonable period of time required to implement additional controls not specified in the regulation. (OPEI)

Agency Response: Deleted Section 2754.1(b)(2).

193. Comment: Section 2754.1 – The proposed irrevocable election requirement should be deleted. The certification submitted no later than June 1, 2005 should not require any differentiation between utilization of 2754.1(a) versus 2754.1(b). (EMA/OPEI)

Pursuant to Section 2754.1 of the Proposed Modifications, "once an election [of either the Design-Based Option or the performance-based requirements that

comprise the Alternative Standards] is made for an evaporative family, manufacturers are committed to certifying evaporative families under that election for all future certifications." This provision is unwarranted and unduly-restrictive. Accordingly, at the very least this irrevocable election provision must be deleted.

The irrevocable election requirement is unwarranted because the whole premise behind the Alternative Standards is that the two options thereunder (either the Design-Based Option or the performance-based alternative) are equivalent in terms of their implementation, stringency and control of running loss emissions. Thus, there is no reason whatsoever for a manufacturer to change from the Design-Based Option to performance-based standards, or vice versa, as part of a scheme to avoid compliance with effective evaporative emissions controls. Consequently, the presumed rationale behind this regulatory provision -- to preclude "gaming" of emission control requirements -- simply does not exist.

Accordingly, since there is no reasoned justification for the proposed irrevocable election requirement, that requirement inherently imposes undue restrictions on the certification options that should remain available to manufacturers. The restriction also stands in conflict with the Suspension Provision, and again could leave manufacturers with no viable means to certify product. If a manufacturer elects the Design-Based Option, but then that option is suspended, and if the underlying regulations preclude a change of election to the performance-based alternative, what is a manufacturer to do? The utter unreasonableness occasioned by the language of the irrevocable election provision demonstrates the need to delete it. (EMA)

Agency Response: Deleted language in Section 2754.1 that required the selection of a distinct compliance option in the certification plan.

194. Comment: Section 2754.1(b) – Table for Engine Displacements > 225 cc footnote 4: Should be applicable to small volume families not manufacturers. (EMA/OPEI)

Agency Response: Replaced table with a new table (Table 1) in Section 2754.1 that integrates the tables in Sections 2754.1(a) and 2754.1(b). Footnote 4 of Table 1 references small production volume tanks to be consistent with the modified definition in Section 2752(a)(26).

195. Comment: Section 2754.1(a)(1)(A) // Section 2754.1(b)(1)(A) -Manufacturer's certifications that include a canister per TP-902 must be automatically approved without a separate determination by the Executive Officer. (EMA/OPEI)

Agency Response: Incorporated suggested change in Section 2754.1(a)(1)(A) and in Section 2754.1(b)(1)(A).

196. Comment: Section 2754.1(b)(2) – Request deletion of language allowing the suspension of the design option for models of equipment not meeting modeled diurnal emission factors. (EMA/OPEI)

Agency Response: Deleted Section 2754.1(b)(2).

Certification Averaging and Banking

197. Comment: ARB should consider a tank permeation averaging program. (OPEI)

Engine and equipment manufacturers should have the option to certify tanks to the design-based standards through a tank permeation averaging program. Such an averaging program would improve the cost-effectiveness of the final rule without adding any substantial administrative burdens or resulting in an increased level of emissions. ARB could readily model the tank permeation averaging program on the similar program U.S. EPA has established in the final recreational vehicle evaporative regulations. (OPEI)

Agency Response: Rejected suggested change to include tank averaging because it would create problems in validating the emissions from complete evaporative emission systems as required in Section 2754.2 when randomly sampled.

198. Comment: Section 2754.2(b)(5) – The term "EFELD" is not defined. (EMA/OPEI)

Agency Response: Defined "EFELD" in new subsection 2752(a)(11).

199. Comment: Section 2754.2(e)(1) – Add a description of the calculation of EFELD. (OPEI)

Agency Response: Modified Section 2754.2(e)(1) to incorporate suggested change.

Fuel Tank Permeation Standard

200. Comment: Section 2755(a) – Should not be a requirement to submit permeation data for exempt equipment. (EMA/OPEI)

Agency Response: Incorporated suggested change in Section 2755(a).

Fuel Cap Performance Standard

201. Comment: Section 2756(b) – The requirement under this section that a "fuel tank vapor seal" be established seems appropriate for equipment that is certified by design and for which there is no required diurnal standard. On the other hand, for equipment that is covered under Section 2754 and which is required to be certified to pass a specific 24 hour diurnal test, this language seems overly prescriptive since the diurnal test insures that the intent of the requirement will be fulfilled. This will be true even if a specific design only provides a "fuel tank seal" rather than the currently required vapor seal. By being overly prescriptive, the regulation, as presently worded, potentially limits the use of alternative or innovative designs than can be certified under Section 2754. (Random Technologies/Dupont)

Agency Response: Modified Section 2767 to allow the Executive Officer the discretion to exempt systems using innovative technology from Section 2756(b) after an engineering review.

202. Comment: Section 2756 – Language that restricts sales is not appropriate, existing equipment built prior to the regulation taking effect is not controlled and can continue to be sold. (EMA/OPEI)

Agency Response: Modified applicability in Section 2756.

Labeling

203. Comment: Section 2759(c)(4)(A) – Need confirmation that EPA staff concurs with the revised heading for the label language. (EMA/OPEI)

Agency Response: The ARB must apply to the U.S. EPA for an authorization to regulate small off-road engines. The proposed regulations and labeling requirements are approved as part of the authorization request.

204. Comment: Section 2759(c)(4)(C) – The requirement that abbreviations conform to SAE J1930 guidelines is not appropriate because SAE J1930 does not include any evaporative codes. The evaporative code (per CP-902 Attachment 1) should be allowed with the code included in the owner's manual. (EMA/OPEI)

Agency Response: The reference to SAE J1930 was retained. However, Section 2759(c)(4)(C) was modified to incorporate suggested change that allows the evaporative code to be included in the owner's manual.

205. Comment: Section 2759(c)(4)(D) – The date of engine or equipment manufacture can be located on the engine or equipment rather than the label provided that the location of this information is described in the application for certification. (EMA/OPEI)

Agency Response: Section 2759(h) allows the Executive Officer discretion to approve alternate labels and locations.

206. Comment: Section 2759(c)(4)(E) – Specific calendar or model year specifications are not appropriate because they require labeling changes each year. Also engines or equipment certified to a standard in advance of the requirements cannot be properly identified. (EMA/OPEI)

Agency Response: Reference to calendar year was deleted because the regulations are enforced on a model year basis. Added language that allows "model years" in the compliance statement so that labels do not necessarily have to be changed every year and models certified in advance can be properly identified.

207. Comment: Section 2759(g) – We recognize that ARB would like to identify the evaporative emission control system and other details, such as the certifying manufacturer, by looking at the emission label. However, we believe that there are

alternatives to the proposal as now outlined that would be more compatible with other emission label and family identification requirements. The three character code identifying the evaporative system is similar to and can be identified in the same way it is done for the exhaust emission control system (as detailed in Paragraph 2404(c)(4)(D)). We think moving the evaporative system identification out of the family name coupled with a second evaporative label to identify the certifying fuel system manufacturer, in the case where the product is not produced by one manufacturer, will clearly answer an of the ARB engine and product identification needs. Please consider moving the evaporative emission system identification to another part of the label or into the owner's manual as allowed for the exhaust emission system.

Engines of less that 80cc displacement are allowed to use the same family name for both exhaust and evaporative families because it has been assumed the product is made by an integrated manufacturer (meaning the same company manufactures and certifies both the fuel and exhaust systems). There are many engines greater than 80cc displacement where the fuel and exhaust systems are manufactured and certified by one company. There are also numerous examples, both above and-below 80cc, of whole products produced by a single company. The family name for any integrated product or engine, without regard to the displacement category, should use the currently accepted family name for both exhaust and evaporative emissions. *Integrated product* should be defined as a product or engine with the fuel and exhaust systems certified by one manufacturer. Integrated product can be a whole product or simply the engine with a complete fuel and exhaust system.

The label(s) for products produced with parts certified by more than one manufacturer could provide separate exhaust and evaporative labels, one each from the exhaust and evaporative certifying manufacturers. However, even in this case, the evaporative emission system can and should be identified separately from the family name.

We have additional concerns with the requirements of Paragraph 2759 and CP-902 to use three character spaces in the emission family name to identify evaporative controls. The ARB and the US EPA have specified the use for ten of the twelve characters and the remaining two characters are for the discretionary use of the manufacturer. Honda is already using these two characters to identify engine families and certifying using those characters. Changing those two characters to identify evaporative systems would make it impossible to name some current families. Also, the third character requested in CP902 that identifies WBM, Class 1 non-WBM and Class 2 would be in direct conflict with the US EPA requirements for that character slot and with the US EPA engine Class 3 identification. (Honda)

Agency Response: Reduced the family evaporative code to two characters in CP-902, Attachment 1. Modified the language in Section 2759(c)(4)(C) to allow abbreviations defined in the owner's manual. Section 2759(h) already allows the Executive Officer to approve alternate labels and locations. It is also ARB's intent to allow the evaporative code to be placed anywhere on the label where it is visible.

Defects Warranty Requirements

208. Comment: Section 2760(a) – The model year reference should be deleted. (EMA/OPEI)

Agency Response: Deleted model year reference.

Ordered Recalls

209. Comment: The proposed provisions must be revised. (EMA)

The Proposed Modifications still include recall provisions that are inconsistent both with federal regulations and with the realities of the marketplace for small off-road engines and equipment. U.S. EPA has specifically recognized that it is impractical, at best, to remedy a potential nonconformity within a class of SOREs by ordering a recall. Among other reasons for this, it would be next to impossible to identify the individual owners of the SOREs in question, and it is just as likely that those owners would not respond to an emissions-related recall in any event.

Thus, and again as explained in the comments of OPEI as well, ARB should delete the proposed recall provisions from any final SORE Rule, and provide an alternative remedial program modeled on that adopted by EPA. (EMA)

Agency Response: See agency response to Comment 24.

210. Comment: ARB needs to incorporate the limitations on the U.S. EPA's recall authority as set forth in the federal register. (OPEI)

In the governing federal register preamble, U.S. EPA has carefully constructed a federal recall policy that: (1) recognizes the impracticality of trying to recall non-registered or tracked lawn and garden equipment; and (2) provides guidance on implementing more effective alternative processes and criteria to address potential non-compliance situations. If ARB simply incorporates U.S. EPA's abbreviated recall regulations without incorporating EPA's much clearer and expansive federal register policy, then ARB's regulations program will distort rather than harmonize with the federal program. In order to harmonize with U.S. EPA, ARB should simply add the following sentence: "To provide the Executive Officer with options to a mandatory recall, which would be impractical to implement, the federal policy as set forth in the *Federal Register* at 15208, 15219-15220 (March 30, 1999) restricting the recall of small gasoline engines will be used to evaluate an individual manufacturer's proposal to implement alternative plans to address potential non-compliance situations." We also request that ARB issue enforcement guidance and clearly respond to these comments in its FSOR with the requested recall clarifications set forth in the enclosed technical issues list. Without the requested regulatory improvements and FSOR clarifications, it is likely that ARB compliance and enforcement personnel could impose millions of dollars in recall expenses in direct contradiction to ARB's stated intent to only use recall authority when more effective, alternative remedies have failed with no benefit in air quality. (OPEI)

Agency Response: See agency response to Comment 24.

211. Comment: Section 2763(a)(3)(B) – The regulation should acknowledge the impracticality of a recall and the Executive Officer must have alternatives or flexibility to allow other options. (EMA/OPEI)

Agency Response: See agency response to Comment 24.

Exemptions

212. Comment: Create wintertime products exemptions. (OPEI)

In prior rulemakings, ARB has imposed only CO limits for winter-time products, since snow throwers and other winter equipment are not used in conditions that are conducive to ozone formation. For the following reasons, ARB should apply the existing winter-time products exclusion to the new evaporative regulations. First, most owners of winter-time products are required to drain the fuel at the end of the winter season pursuant to the manufacturer's recommended practices. Also, equipment manufacturers understand that a common method of fuel system draining is to run the engine until it stops. This assures all fuel is out of the fuel system during the seasons when the equipment is not being used. Second, it would be particularly difficult and costly to control diurnal emissions from winter-time products because of the unique demands of starting and operating these engines in sub-zero temperature with the elevated levels of humidity and snow in the ambient air in proximity to the engine/equipment. Third, evaporative running losses would occur only in the winter when the products were actually operating. Fourth, the inventory of such equipment is small statewide and most of the equipment in the state is present in mountainous areas where air quality is generally good. For these reasons, ARB Staff has confirmed that they will establish the needed, broad exclusion for snow blowers and ice augers in Section 2751(b). (OPEI)

Agency Response: Modified Section 2751 to exclude snowthrowers and ice augers from the evaporative regulations.

213. Comment: Section 2766 – Clarify scope of small-volume tank family exemption. This exemption should be expanded to include Small Volume Evaporative Families. (OPEI)

OPEI and its members documented the following facts to ARB Staff's satisfaction last spring. First, it would not be cost-effective or practical for any (large or small) equipment manufacturer to retool the roto-molded fuel tanks that necessarily are used on commercial turf care and similar types of low-volume equipment. Second, these roto-molded tanks could not meet and should be exempt from ARB's tank permeation standards. Third, ARB committed to establish a small-volume tank exemption based on the annual sale in California of less than 400 of the same type of fuel tanks across a large or small manufacturer's entire product line.

ARB's proposed regulations deviate from the "small-volume tank family" approach ARB agreed to last spring. Instead, ARB proposes to inappropriately limit the small-volume tank family exemption to "small-volume manufacturers" through a confusing proposed definition. ARB's proposed "small-volume manufacturer" exemption would also have an unfair impact in the marketplace. Under the proposal, large manufacturers of commercial turf care equipment would have to retool their roto-molded tanks while tanks used on competing commercial equipment would be exempt if produced by a "small manufacturer". This would effectively mean that a large manufacturer could not compete in the commercial turf market in California. ARB has no reasonable basis to arbitrarily discriminate against large manufacturers that produce small-volume, roto-molded tanks. For all the reasons cited above, OPEI urges ARB to clarify its "small-volume manufacturer" definition to a clearer "small-volume family" definition. (See suggested language in Section 2766 of enclosed Issues List, attached as Exhibit A.)

There is an exemption for Small Volume Manufacturer. This is not appropriate. This exemption should be expanded to include all Small Volume Evaporative Families per definition cited earlier regardless of the status of the manufacturer. EPA has long recognized that there are limitations on the ability to conform with extensive testing and certification requirements for small volume engine families as well as small volume equipment models. The appropriate scaling of these limits to the state level would prevent manufacturers in these markets from being excluded from California. (OPEI)

Agency Response: Modified language to clarify the intended target class for the exemption, which are Small Production Volume Tanks.

214. Comment: Section 2766(a) – "Low permeation" fuel tanks are not defined. (EMA/OPEI)

Agency Response: Low Permeation Tanks is simply the title of the subsection. The exemption clearly applies only to metal, coextruded, and structurally integrated nylon fuel tanks, which are tanks that have low permeation characteristics.

215. Comment: Section 2766(b) – "Small Volume Manufacturer" should read "Small Volume Family". (EMA/OPEI)

Agency Response: Changed title of subsection to Small Production Volume Tank Exemption. The change is intended to accurately reflect the intended target of the exemption.

<u>Denial, Suspension or Revocation of Certification</u>

216. Comment: Section 2770 duplicates and conflicts with Section 2765(c). Revocation should be reserved for material violations. ARB should strike the provision that labeling discrepancies may lead to Executive Order revocation. (EMA/OPEI)

Agency Response: See agency response to Comment 95. Additionally, removal of labeling violations from the suspension/revocation provisions does not have merit. The Executive Officer is capable of making appropriate determinations based on facts presented. There is no point in limiting the discretion of the Executive Officer before a set of facts is ever presented. It is certainly within the realm of possibility that the continued refusal of a manufacturer to correct "minor" labeling defects may require the specter of suspension to gain compliance.

Penalties

217. Comment: The provisions as proposed in section 2772 are not acceptable. Limits need to be in place to provide guidance on the maximum penalties. OPEI suggests that ARB clarify its current enforcement policy with suggested language below:

The penalty for a non-compliant product that is sold to a California consumer shall not exceed one-third of the retail price (or a total penalty of $50 per unit – whichever is less). The penalty for a non-compliant product that is temporarily offered for sale, but never purchased by a California consumer shall never exceed one-tenth of the retail price of that unit or a total penalty of $10 per unit – whichever is less. In assessing appropriate penalties, ARB shall not impose a penalty on a manufacturer which devoted substantial resources and effectively prevented a non-compliant product (which was temporarily offered for sale) from ever being actually purchased by a California consumer. Manufacturers also can establish an affirmative defense that they undertook all reasonably prudent precautions to prevent products (intended to be transshipped through California distribution centers to the national market) from being sold to California consumers. (EMA/OPEI)

Agency Response: See agency response to Comment 96.

218. Comment: ARB should create in the final regulations a “reasonable prudent precaution” defense.

ARB counsel informally recognizes and generally applies to lawn and garden engine and equipment manufacturers, a “reasonable prudent precaution” defense, which is based on ARB’s “consumer products” emission regulations. Under this defense, a manufacturer or distributor who sells, supplies or offers for sale in California a consumer product that does not comply with ARB’s VOC standards is exempt as long as “the manufacturer or distributor can demonstrate both that the consumer product is intended for shipment in use outside of California, and that the manufacturer or distributor has taken reasonable prudent precautions to assure that the consumer product is not distributed in California.” (See Section 94510 of the ARB Consumer Product Regulations.) For example, if the consumer product manufacturer can document he clearly notified the downstream retailer and properly segregated and labeled his products, then the manufacturer is not be liable for the mistakes of the retailer.

The outdoor power equipment industry shares the same following distribution characteristics as the consumer product industry:

The product manufacturers cannot control and typically do not know the location of the retail store where the downstream distributor or retailer ultimately sends and sells their products.

The product manufacturer can "reasonably" only notify the retailer and implement a labeling program to distinguish "national" products from California-only products.

Because ARB's current enforcement policy for lawn and garden equipment is not clearly set forth in the regulations, it is subject to the discretion of an individual enforcement officer. Consequently, individual engine and equipment manufacturers frequently have to "re-prove" in their individual cases that they are entitled to the "reasonable prudent precaution" defense. In order to promote regulatory clarity and the efficient administration of resources, ARB should clearly establish a "reasonable prudent precaution" defense in the final regulations. (See Section 2772 of the Issues List, attached as Exhibit A.) This needed regulatory clarity would also put retailers on notice that they must follow the compliance instructions provided by their upstream suppliers. Consequently, such clarification will likely result in the improved overall enforcement of ARB's final regulations. (OPEI/Briggs)

Agency Response: Staff does not agree that there is any "informal recognition" by ARB counsel of the reasonably prudent precaution defense outside of the consumer products regulations. The reasonable prudent precaution defense was developed in light of the unique manufacturing/marketing/distribution/sales model that characterizes the consumer product industry. In retrospect, staff does not believe that the inclusion of that provision in the consumer products regulations was beneficial at all. The provision seems to have done nothing more than add an additional point of dispute to the enforcement effort. In light of its concerns, staff cannot support the expansion of that provision into other areas. The application of enforcement discretion, based on the particular facts of a given case, is the preferred approach. The actions of, or the failure to take action by, a manufacturer to ensure that uncertified engines or equipment are not sold to California consumers, such as labeling, separate sku identification, buyer notification, and invoice notation would certainly be factors to be considered.

D. Comments On The Evaporative Certification Procedures

Comments on CP-901

219. Comment: Fuel Tanks – TP-901 has now been made available to all engine displacement categories. We request that the companion CP-901 should also be available for all displacement categories and not restricted to less than or equal to 80cc products.

In parallel with that request, we would like to have included in this regulation the option for a tank manufacturer to certify the performance of its fuel tank. Although several fuel tank manufacturers have clearly stated that they could not become the certifying manufacturer, we believe that there is a clear need for that option if a tank manufacturer was willing. If a tank manufacturer were to become a full service tank

designer and manufacturer, in an effort to better serve their customers, they could offer the additional benefit of a pre-approved tank. This could be especially useful where a standard tank size shape could be used in multiple products. (Honda)

Agency Response: Added 13 CCR Section 2767.1 which allows a manufacturer to certify a tank and obtain an Executive Order which can be referenced in a certification application. Because of this new section, no changes to CP-901 are required.

220. Comment: OPEI requests that ARB create an alternative mechanism under which manufacturers or a material supplier could conduct a "coupon tank test" and obtain a generic design-based approval of a particular low permeation tank material or process. (OPEI)

Agency Response: As stated in TP-901, alternative test procedures are allowed if approved by the Executive Officer.

221. Comment: Section 4 – "A manufacturer must test a minimum of one fuel tank for every engine family..." is not in agreement with CP-901, par. 5.1.1, page 2 – "A manufacturer may test its largest fuel tank in all tank/exhaust families and use these results for all tanks in all other tank/exhaust families made of the same material/process." and with Chapter 15, Article 1, Section 2753, par. 4, page 8 – "..., the manufacturer need only test the tank with the most surface area for all evaporative families with the same material/process." (EMA/OPEI)

Agency Response: Modified Section 5.1.1 to make it consistent with 13 CCR Section 2753.

222. Comment: Section 5.1.2 – This section discusses the application format. It is our understanding the revised certification application will be based on FileMaker Pro. ARB should work together with the OPEI Handheld Committee to revise the FileMaker Pro application. (OPEI)

Agency Response: ARB does not have access to the FileMaker Pro software application. ARB will specify the format (hardcopy and electronic) of the certification application.

<u>Comments on CP-902</u>

223. Comment: Walk Behind Mower Certification – If an engine is used for WBMs and other applications in non-WBM Class 1, we do not believe that it should be necessary to divide that engine into two families (or use two evaporative emission system descriptions) if the engine is certified to the walk behind mower standard. Please consider this and revise the regulation accordingly. (Honda)

Agency Response: Modified the evaporative family naming criteria to exclude engine displacement. The new criteria allows engines used on both walk behind mowers and non walk behind mowers with similar evaporative emission control systems to be certified under the same evaporative family.

224. Comment: Section 2.2 - Last sentence refers to useful life. There is a durability test but no way to prove the system works at end of life. Discuss in relation to TP-902 durability requirements. (EMA/OPEI)

Agency Response: Deleted reference to useful life and incorporated language suggested by EMA and OPEI.

225. Comment: Section 4 - Terminology added "Any engine certified as a complete ….. under the exhaust family name where the last three letters is an evaporative code." It is not possible to use the last three letters of an exhaust family name for an evaporative code. The third from the last character in the exhaust family name is a number representing the engine displacement class. The final two letters are to be used by manufacturers to differentiate between otherwise identical engine families. For integrated engine manufacturers the exhaust emission family name should be sufficient for both evaporative and exhaust emission certification purposes. (EMA)

Section 4 will conflict with exhaust family name as specified. Manufacturers are using the last two digits for uniquely identifying engine families. The third digit from the end is the engine class designation. We suggest removing the "…last three letters is an evaporative code." (OPEI)

Agency Response: Changed the evaporative family code requirement from three characters to two characters.

226. Comment: Selection of the Worst Case – CP-902 Section 4 in the 4th paragraph the last sentence on page 3, "The model year test engine or equipment selected for testing must be of a configuration that is expected to yield the highest evaporative emissions within an evaporative family." This statement is not in agreement with other parts of the proposed regulation nor we think with the ARB Staff intent.

In several other places in the regulation for example 2754.2(b)(5) the worst case determination is correctly described as the engine or equipment most likely to exceed the applicable standard. Because part of the regulation is based on a sloped line that is fuel tank volume dependent, the highest absolute value may not be the worst case. We believe that the worst case has to be determined based on the difference between the standard applicable to the product and the performance of the product. (Honda)

Agency Response: The regulation requires manufacturers to test the model within an evaporative family that is expected to have the smallest evaporative emission differential (difference between the expected evaporative emissions and the applicable standard) for all models within an evaporative family.

227. Comment: Section 6.2 – Modifications should be allowed that are determined to be equivalent. The determination of equivalence should be at the discretion of the Executive Officer. (EMA/OPEI)

Agency Response: Incorporated suggested change in Section 6.2.

228. Comment: Section 7.9 - The reference to SAE J1737 is not accurate. Reference Section 2752 (a) (6); The specification should indicate that the fuel line permeation is determined utilizing the SAE J1737 test method, using CA Certification fuel, at a steady state temperature of 40° C per Section 2752(a)(6). (EMA/OPEI)

Agency Response: Modified Section 7.9 to reference 13 CCR Section 2752(a)(6).

229. Comment: Section 7.13 - The requirement to submit the "entire application" if the certification summary is affected should be deleted. It should be the manufacturer's option to only submit those portions that change. As identified in Section 7.6, the engine family and engine displacement should not be required. (EMA/OPEI)

Agency Response: Incorporated suggested change in Section 7.13.

Comments on CP-902, Attachment 2

230. Comment: Inclusion of engine family listing is not appropriate (reference OPEI letter requesting removal of Option A which would decouple engine and evaporative requirements). (OPEI)

Agency Response: Non regulatory change, handled as part of certification. Tracking of engine families with certified evaporative systems for compliance purposes is aided by requiring the engine family listing.

231. Comment: "Equipment model" listing at the end of the form (Attachment 2) is confusing. (OPEI)

Agency Response: Modified form by replacing "Equipment models" with "Equipment types".

232. Comment: Equipment Models: Information is only appropriate if the evaporative family is equipment not engine based. Engines certified as a complete system are independent of the equipment that they are utilized on with the exception of walk behind mowers which can be determined by the evaporative family code. Suggest that the terminology be changed to "Equipment Types" with guidance to use consistent terms such as walk behind mower, general utility, lawn and garden tractors, etc. (EMA)

Agency Response: Incorporated suggested change.

Comments on CP-902, Attachment 3

233. Comment: Column S8 now seems irrelevant since the test procedure and fuel do not follow any of the specific SAE fuel line categories. (Honda)

Agency Response: Deleted reference to SAE in column S8.

E. Comments On The Evaporative Test Procedures

Comments on TP-901

234. Comment: The title needs to be revised to cover both engines and equipment. (EMA/OPEI)

Agency Response: Modified title to incorporate suggested change.

235. Comment: Section 1 - The description needs to be expanded to cover both small off-road engines and equipment that use these engines. (EMA/OPEI)

Agency Response: Incorporated suggested change.

236. Comment: New Section for Definitions should be added to define Surface Area. The following definition of tank surface area is required for determination of permeation rates expressed on an area basis. The fuel tank's internal surface area are those surfaces that are subjected to fuel liquid or vapor under normal operating conditions and have an opposing surface through the wall section that is in communication with the atmosphere. Internal webs and strengthening structures not in communication with the atmosphere are not considered internal surfaces for the purposes of this testing. Surface area to be reported in square-meters to at least three significant figures. (EMA/OPEI)

Agency Response: Incorporated suggested definition in Section 14.

237. Comment: Section 3 - The sealing method (fusion welding) is too restrictive. Any sealing method should be allowed. (EMA/OPEI)

Agency Response: Modified Section 3 to allow any method of sealing.

238. Comment: Section 3 – The reference to fuel should be CERT fuel or Indolene, for consistency. (OPEI)

Agency Response: Modified Section 3 to incorporate suggested change.

239. Comment: Section 4 - The reference to the ARB certification fuel should not contain the qualifier “currently”, certification fuel is as specified and can not change without significant effects on this and other regulations that depend on this fuel specification. (EMA/OPEI)

Agency Response: Deleted qualifier “currently” from section.

240. Comment: ARB fails to provide specific information regarding a vented enclosure or shed. (OPEI)

Agency Response: Comment withdrawn by OPEI.

241. Comment: Harmonize test procedure with U.S. EPA. (OPEI)

Agency Response: Rejected request to harmonize test temperature. The Staff Report provides test data that demonstrates the feasibility of the proposed permeation standards at 40 ºC.

242. Comment: Section 6.1 – Do not require the use of a fusion welder or coupons. Any means of sealing the tank should be sufficient. (EMA/OPEI)

We recognize that the method specified in the test procedure for sealing a fuel tank with a coupon and hotplate are those used by the ARB staff in performing tests for the development of the regulation. These methods with material matches work in most cases. However, there are numerous other means of sealing the fuel tank prior to conducting the tests. There is certainly no incentive for a manufacturer to do an improper job of sealing the tank, as it would naturally have an adverse affect on the test results. We think it would be sufficient for the regulation to require the tank be "properly sealed" and allow the actual sealing method to be at the discretion of the manufacturer. If there were any questions by the Executive Officer about the method used the manufacturer could easily provide the information upon request. (Honda)

Agency Response: Modified section to allow alternative methods for sealing tank.

243. Comment: Section 6.4 - Barometric pressure transducer accuracy should be modified to within 2.0 mm of mercury. No equipment available to do this. (EMA/OPEI)

Agency Response: Incorporated suggested change.

244. Comment: Section 8 - Remove HDPE restriction in the new language. Any tank, regardless of the material or process of manufacture should be allowed to eliminate these secondary operations, i.e. delete the HDPE. (EMA/OPEI)

Agency Response: Incorporated suggested change.

245. Comment: Section 10.1 - Modify language to allow other methods for leak checking in addition to water submersion. (EMA/OPEI)

Agency Response: Incorporated suggested change.

246. Comment: Section 11.5 – Reduce number of consecutive days from 10 to 4 to reduce testing requirements over weekends. Should be at least for 4 days or until 95% r2 value is met but no greater than 10 days. (EMA/OPEI)

Agency Response: Rejected suggested change. The SAE recommended acceptance criteria is to collect data for ten consecutive days. Allowing fewer days would underestimate the stable permeation rate.

247. Comment: Section 15 – "Plot the cumulative daily ....a linear regression on ten consecutive data points." Should be revised to allow four to ten consecutive data points provided that the correlation coefficient is at least 95%. (EMA/OPEI)

Agency Response: Same as response to Comment 246.

248. Comment: Section 17 - ARB should allow the ability to test for tank permeation in a SHED at constant temperature. OPEI suggests that following language in a new Section 15 entitled "ALTERNATIVE TEST PROCEDURES." "An approved option to the gravimetric weight loss method is to directly measure the emissions using the enclosure technique (SHED). After following the above preconditioning and durability procedures, measure the 40ºC emissions rate for two or more hours in a properly calibrated and functioning SHED. Calculate the permeation rate in grams/m2/day using the measured emissions calculated per 24-hour day and dividing by the fuel tank surface area." (EMA/OPEI)

Agency Response: Rejected suggested change. Section 15 already allows the Executive Officer to approve alternative test procedures. Section 15 was modified to permit the use of an approved alternate test procedure by any manufacturer.

Comments on TP-902

249. Comment: Engine with Equipment Manufacturer's Fuel System – The proposed regulation is designed to control the evaporative emissions from the fuel system. In the regulatory development the reported results assumed the contribution from the equipment itself was zero. In an effort to assist equipment manufacturers using their own fuel tank, hose and canister with a Honda engine it would significantly reduce the testing burden and help logistics if the engine and fuel system could be tested separately from the product. We would create a test fixture that simulated the in-product positioning of the fuel system components and engine to perform the test. The hot soak could also be simulated based on product temperature measurements if the tank or other components are located in an area that would create a temperature rise in normal operation. We see a direct correlation between this test proposal and performing whole equipment testing while significantly reducing the burden on both equipment and engine manufacturers. This option will reduce the obstacles to SHED testing and could result in more products in the California market with known evaporative emissions rather than assumed design values. (Honda)

Agency Response: Added language in TP-902 Section 4 that allows an engine with complete evaporative emission control system to be tested without the equipment chassis.

250. Comment: The title needs to be revised to cover both engines and equipment. (EMA/OPEI)

Agency Response: Modified title to incorporate suggested change.

251. Comment: Section 3 - ARB should attach the industry's improved alternative test procedure for canister working capacity into TP-902. (EMA/OPEI)

Industry has developed and proposed an improved alternative test procedure that will more accurately evaluate the smaller canisters which will be used on lawn and garden equipment. (See Attachment X and XX to TP-902, attached as Exhibit A.) ARB technical staff apparently recognizes the industry's alternative procedure will be more accurate than the proposed TP-902. ARB's legal office has also recognized that the industry's improved alternative could be included in the final regulations as an attachment to TP-902, which was approved by the Board. ARB Staff's principle resistance to including TP-903 in the final regulations is that ARB Staff would prefer for the Executive Officer to review and approve the improved TP-903 after the rule has been finalized – pursuant to Section 8 of proposed TP-902.

OPEI generally agrees that the Executive Officer should have the ability to review and approve alternative test procedures. However, in this case, it makes more sense to approve the improved and well-defined alternative procedure as part of the rule for the following reasons. First, the improved alternative procedure has been closely reviewed by staff over the last several months and there is no basis for anyone to object to its approval. Second, requiring Executive Officer approval after the rule is finalized will unnecessarily delay the ability of manufacturers to rely on the improved test procedure under the current schedule. The final rule will not be finalized and become effective until September 2004. It could take the Executive Officer several more months to approve the attached procedure – despite the fact it is a more accurate alternative. Thus, industry could lose 6 to 9 months in lead-time in being able to rely on the improved procedure to evaluate and certify canisters. Manufacturers need to know now with certainty that they can rely on the improved test procedure. (OPEI)

The completely new text in the second bullet of Section 3 (starting with: For evaporative emissions, useful life, in years, is equipment specific.) will be difficult if not impossible to implement in a fair and consistent way across the range of engines, products, and manufacturers in the small engine and equipment industry. We understand that the Board directed staff to reinforce the importance of products to meet the standards in use. We think the original proposal to test the components and assembly though a specific number of operational cycles is the most sensible solution in this diverse small engine market. The durability demonstration already specifies the cycles for controls, cables, linkages, pressure / vacuum cycles, and vibration of the components.

Making the requirement product specific in a market where engines with fuel systems are used to power a wide variety of products, most not made by the engine manufacturer, makes user surveys impossibly complex to conduct. The survey process also has too many potential variables to expect consistency. One example would be that in anyone product segment there is a price range of products sold by different manufacturers, sometimes using the same engine. Another example is that commercial users buy consumer equipment and consumers buy commercial equipment or both buy the same equipment/engine. Honda recommends that staff retain the original proposal for durability cycling of components. We think that

procedure will assure products that are durable in use and the assessment will be consistent for engines, products and different manufacturers. (Honda)

Agency Response: Incorporated industry suggested alternative test procedure into TP-902.

252. Comment: With respect to canister purge, somewhere in the regulation, not just one sentence of TP-902 in the durability section, it should be required that the canister be actively purged by the operation of the engine. (Honda)

Agency Response: Added language in 13 CCR Section 2754 that requires the Executive Officer to approve the determination of running loss control except for systems using actively purged carbon canisters that meet the working capacity requirements of TP-902.

253. Comment: Section 5.1 - ARB should allow manufacturers of all equipment to test the diurnal emissions from a complete evaporative system in a mini shed. In addition, ARB should clarify that manufacturers need only test the Evaporative Emissions Control System as defined in 2752(a)(8). In paragraph 2: Remove the text, "The instantaneous tolerance must also be within ± 5.0 °F." Duplicative text (EMA/OPEI)

OPEI members are concerned that there will be a greater demand than supply for the large and very expensive automotive SHEDS to measure diurnal emissions from lawn and garden equipment. In numerous conference calls over the last several months, ARB Staff has indicated that as a test procedure option, manufacturers would be able to test diurnal emissions from a complete evaporative system (exclusive of the entire piece of equipment) in an approved mini-SHED. This critical test procedure option needs to be incorporated clearly in the final test procedures. OPEI urges ARB to include language in Section 5.1 of TP-902 that states manufacturers can test in a mini-SHED diurnal emissions from a complete evaporative system (i.e., engine, tank, fuel lines, canister) on all equipment (exclusive of the rest of the equipment). Section 8 (Alternative Test Procedures) of proposed TP-902 allows the Executive Officer to approve the use of a mini-SHED to measure diurnal evaporative emissions. However, such approval may only be granted "on a case-by-case" basis if the Executive Officer determines the alternative test procedure is equivalent to TP-902. Within the next several weeks, OPEI plans on submitting for ARB to review, approve and attach to the final TP-902 a generic, equivalent mini-SHED test procedure.
ARB should add flexibility to allow mini-SHEDs as well as SHEDs. The locations of temperature measurement and enclosure volumes should be appropriately scaled to the size of the SHED.

In addition, ARB should clarify that manufacturers need only test the Evaporative Emission Control System as defined in 2752(a)(8). (OPEI)

Agency Response: Modified Section 5 to clarify ARB's intent to consider diurnal emission data generated with a mini shed if approved as an alternative test procedure. Section 4 was modified to allow the testing of engines or equipment with

complete evaporative emission control systems. Removed duplicative text in second paragraph.

254. Comment: Section 5.2 through 6 - ARB should simplify the regulations and make things consistent by eliminating references to methanol. (EMA/OPEI)

Agency Response: Added language in Section 5.1 to allow manufacturers to disregard references to methanol in the test procedure.

255. Comment: Figure 1 – Change “Hot Soak Test” to “Hot Soak”. (EMA/OPEI)

Agency Response: Incorporated suggested change.

V. MODIFICATIONS TO THE ORIGINAL PROPOSAL – SECOND NOTICE OF MODIFIED TEXT

At its September 25, 2003, public hearing, the Air Resources Board (the Board) approved the adoption of sections 2750, 2751, 2752, 2753, 2754, 2755, 2756, 2757, 2758, 2759, 2760, 2761, 2762, 2763, 2764, 2765, 2766, 2767, 2768, 2769, 2770, 2771, 2772, and 2773, title 13, CCR, along with the incorporated “Small Off-Road Engine Evaporative Emission Test Procedures, TP-901 and TP-902” and the incorporated “Small Off-Road Engine Evaporative Emissions Control System Certification Procedures, CP-901 and CP-902.” The purpose of those regulations and test procedures is to establish evaporative emission standards for small off-road engines, and equipment that use small off-road engines, less than or equal to 19 kilowatts. The Board also approved the adoption of sections 2405.1, 2405.2, and 2405.3 and amendments to sections 2400, 2401, 2403, 2404, 2405, 2407, 2408, and 2409, title 13, CCR, along with amendments to the incorporated "California Exhaust Emission Standards and Test Procedures for 1995 and later Small Off-Road Engines," as last amended January 28, 2000, title 13, CCR. In addition, the Board approved the adoption of the incorporated “California Exhaust Emission Standards and Test Procedures for 2005 and Later Small Off-Road Engines.” The purpose of those modifications to the regulations and test procedures is to include more stringent exhaust standards for small off-road engines less than or equal to 19 kilowatts. In addition, the purpose of the updated test procedures is to more closely harmonize with the federal small engine test procedures (40 CFR, part 90, subparts A, B, D, and E and corresponding appendices).

At the hearing, the staff presented, and the Board approved modifications to the regulations originally proposed in the Staff Report released on August 8, 2003. In response to comments received during the 45-day comment period and at the Board hearing on September 25, 2003, modified text was made publicly available for a 30-day comment period on February 9, 2004. The modified text described below responds to comments received during the 30-day comment period that ended March 11, 2004. The following describes the modifications, by category and section number.

A. Exhaust Regulations

§2403 – Exhaust Emission Standards and Test Procedures - Small Off-Road Engines

The standards table in paragraph (b)(1) was modified to remove all references to the emission standards proposed in the August 8, 2003 Staff Report (compliance “Option A”).

Paragraph (b)(1) footnote seven was deleted to coincide with the modifications made to the table in paragraph (b)(1).

Paragraph (b)(2) was modified to clarify existing language and delete references to Sections 2754, 2754.1, 2751(b) and 2757.

§2404 – Emission Control Labels and Consumer Information - 1995 and Later Small Off-Road Engines

Paragraph (c)(4)(H) was modified to clarify that emission labels may incorporate multiple model years in the compliance statement. In addition, the label must clearly state that the engine meets the exhaust (EXH) emission regulations.

§2408 – Emission Reduction Credits – Certification Averaging, Banking, and Trading Provisions

Paragraph (f)(1) was modified to include "maximum modal power of the test engine" as an example of an alternate definition of "power" that may be approved by the Executive Officer, for use in calculating emission credits.

B. Exhaust Test Procedures

§90.103 – Exhaust emission standards

The standards table in paragraph (a)(1) was modified to remove all references to the emission standards proposed in the August 8, 2003 Staff Report (compliance "Option A").

Paragraph (a)(1) footnote four was deleted to coincide with the modifications made to the table in paragraph (a)(1).

Paragraph (a)(3) was modified to clarify existing language and delete references to Sections 2754, 2754.1, 2751(b) and 2757.

§90.104 – Compliance with emission standards

Paragraph (h)(2) and (h)(2)(vii), (viii) and (ix) were added and modified to clarify the protocol for determining the DF if the manufacturer chooses to conduct more than one test per test point and/or test multiple engines. If the engine manufacturer conducts more than one test at a test point, the number of tests at every test point must be the same. Additional engines identical to the original test engine may be tested with prior approval from the Executive Officer. In such cases, data collection must remain consistent for all test engines. The testing of multiple engines requires the determination of separate DFs for each test engine. The official DF shall be the average of the separate DFs for each test engine. In the case of multiple zero-hour tests on a single engine, the engine manufacturer must select the last zero-hour test as the official zero-hour test upon which the DF are applied. If multiple engines are tested, the manufacturer must select the highest test result among the last zero-hour test of each engine as the official zero-hour test upon which the DF is applied.

§90.117 – Certification procedures – test engine selection

Paragraph (c) was modified to remove the requirement that the manufacturer must receive pre-approval of the test engine selected prior to applying for certification.

The manufacturer must include in its application for certification the reason for its choice of test engine, and the Executive Officer will notify the manufacturer if the Executive Officer determines that the test engine configuration does not meet the requirements for selection.

§90.118 – Certification procedure – service accumulation and usage of DFs

Paragraph (f) was modified to require manufacturers to indicate in the application for certification if auxiliary fans are used, and not require approval by the Executive Officer prior to service accumulation. The manufacturer must maintain and make available at the request of the Executive Officer all records regarding the use of auxiliary fans.

§90.307 – Engine cooling system

Similar to the modification to Section 90.118 noted above, this section was modified to require manufacturers to indicate in the application for certification if auxiliary fans are used during the engine emission test, and not require approval by the Executive Officer prior to service accumulation. The manufacturer must maintain and make available at the request of the Executive Officer all records regarding the use of auxiliary fans.

§90.409 – Engine dynamometer test run

Paragraph (a)(3) was modified to fix a typographical error and to specify that, for vertical shaft engines greater than 80 cubic centimeters (cc) but less than 225 cc displacement volume equipped with an engine speed governor, the manufacturer may carry over certification of its 2004 model year California certified engine family to the 2005 model year. The engine test results done without the use of the governor may be used for compliance. Prior written approval of the Executive Officer is required and the manufacturer must meet all other requirements for 2005 model year compliance.

§90.410 – Engine test cycle

Similar to the modification to §90.409(a)(3) noted above, paragraph (b) was modified to specify that, for vertical shaft engines greater than 80 cc but less than 225 cc displacement volume equipped with an engine speed governor, the manufacturer may carry over certification of its 2004 model year California certified engine family to the 2005 model year. The engine test results done without the use of the governor may be used for compliance. Prior written approval of the Executive Officer is required and the manufacturer must meet all other requirements for 2005 model year compliance.

C. Evaporative Regulations

§ 2750 – Purpose

Modified paragraph (b) to reflect two compliance options.

§ 2751 – Applicability

Paragraph (d) was added to exempt snow throwers and ice augers from the regulations because they are not a significant source of emissions.

§ 2752 – Definitions

Paragraph (a)(6) was modified to allow permeation testing at temperatures higher than 40 °C and with fuels containing 10 percent ethanol or 15 percent methanol in addition to California CERT fuel.

Paragraph (a)(9) was modified to clarify that the engine family and the evaporative family may be considered equivalent for integrated equipment greater than 80 cc at the manufacturer's discretion.

Paragraph (a)(10) was modified to replace "Evaporative Family Emission Limit" with "Evaporative Model Emission Limit" (EMEL) to clarify definition.

Paragraph (a)(11) definition was added to clarify differential between effective standard for a specific model and the declared EMEL.

Paragraph (a)(26) definition was modified to clarify applicability.

§ 2753 – Certification

Paragraph (b) was modified to describe certification under Section 2754, and Section 2757.

Paragraph (b)(1) was modified to allow the submittal of Executive Order numbers approving fuel hose designs in lieu of actual fuel hose permeation data.

Paragraph (b)(2) was modified to allow the submittal of Executive Order numbers approving component designs in lieu of actual data.

All but the last two sentences of paragraph (b)(4) were moved to paragraph (b)(3) for clarity and modified to remove reference to handheld equipment.

Paragraph (c)(1) was modified to reference applicable standards.

§ 2754 – Evaporative Emission Performance Standards

Deleted Section 2754 (original standards proposed on August 8, 2003).

§ 2754.1 – Alternative Performance Standards

Section was re-enumerated to Section 2754. This section was also modified to remove the requirement to submit a certification plan and limits on the selecting an alternative certification option. A combined table "Table 1, Evaporative Emission

Standards" was added to streamline and clarify regulatory intent. Table 1 replaced performance and design tables in Section 2754.1(a) and in Section 2754.1(b). Diurnal standard in Table 1 for equipment > 80 cc, except walk-behind mowers, references tank volume in liters. Previously, the standard was based on tank volume in gallons.

§ 2754.1(a) – Re-enumerated to subsection 2754(a). Paragraph was modified to reference models and requirements in Table 1 of Section 2754. Evaporative Emission Performance Standards for Small Off-Road Engines table was removed.

§ 2754.1(a)(1)(A) – Re-enumerated to subsection 2754(a)(1)(A). Paragraph was modified to clarify that approval by the Executive Officer is not needed for actively purged carbon canisters.

§ 2754.1(a)(1)(C) – Re-enumerated to subsection 2754(a)(1)(C). Paragraph was modified to allow permeation testing at higher temperatures and with fuel containing 10 percent ethanol, or 15 percent methanol, or Indolene. Paragraph was also modified to allow the submittal of Executive Order numbers approving fuel hose designs in lieu of actual fuel hose permeation data.

§ 2754.1(b) – Re-enumerated to subsection 2754(b). Paragraph was modified to reference models and requirements in Table 1 of Section 2754. The following tables were removed to and combined in Table 1 of Section 2754 to add clarity; Diurnal Evaporative Emission Standards for Walk-Behind Mowers, System Design Requirements for Equipment Other than Walk-Behind Mowers Using Small Off-Road Engines with Engine Displacements > 80 cc - < 225 cc, and System Design Requirements for Small Off-Road Engines with Engine Displacements $\geq$ 225 cc.

§ 2754.1(b)(1)(A) – Re-enumerated to subsection 2754(b)(1)(A). Paragraph was modified to clarify that approval by the Executive Officer is not needed for actively purged carbon canisters.

§ 2754.1(b)(1)(C) – Re-enumerated to subsection 2754(b)(1)(C). Paragraph was modified to allow permeation testing at higher temperatures and with fuel containing 10 percent ethanol, or 15 percent methanol, or Indolene. Paragraph was also modified to allow the submittal of Executive Order numbers approving fuel hose designs in lieu of actual fuel hose permeation data.

§ 2754.1(b)(2) – Deleted subsection 2754(b)(2). Paragraph and table were removed because it is not ARB's intent to eliminate the option to certify by design.

§ 2754.2 – Certification Averaging and Banking

Re-enumerated Section to 2754.1.

§ 2754.2(b)(5) – Re-enumerated to subsection 2754.1(b)(5). Paragraph was modified to clarify intent with regard to Evaporative Family Emission Limit Differentials (EFELD) and declared EMEL.

§ 2754.2(e)(1) – Re-enumerated to subsection 2754.1(e)(1). Paragraph was modified to reference definition for “EMEL” and EFELD” in calculations.

§ 2754.3 – Validation Study

Re-enumerated section to 2754.2.

§ 2754.3(a) – Re-enumerated subsection to 2754.2(a). Paragraph was modified to applicable certification options.

§ 2754.3(f) – Re-enumerated subsection to 2754.2(f). Paragraph was modified to applicable standards.

§ 2755 – Permeation Emissions Performance Standard

§ 2755(a) – Added language clarifying that permeation data is not required for engines or equipment meeting the requirements of Section 2766.

§ 2756 – Fuel Cap Performance Standard

Added language that allows engines or equipment to be exempted in an Executive Order issued pursuant to Section 2767.

§ 2757 – Optional Performance Standards

Paragraph was modified to reference applicable standards.

§ 2759 – Equipment and Component Labeling

Paragraph (c)(4)(C) was modified to clarify allowable abbreviations.

Paragraph (c)(4)(E) was modified to clarify applicability and an acceptable statement of compliance.

§ 2760 – Defects Warranty Requirements for Small Off-Road Engines

Paragraph (a) was further modified to clarify applicability.

§ 2765 – New Equipment Compliance Testing

Paragraph (a)(1) was modified to reference applicable standards.

Paragraph (b) was modified to reference applicable standards.

§ 2766 – Exemptions

Paragraph (b) was modified to clarify applicability and reference applicable standard.

Paragraph (c) was added to conditionally exempt generators used in on-road motor vehicles and marine vessels.

§ 2767 – Innovative Products

Paragraph (a) was re-enumerated to subsection 2767(c).

Paragraph (a) was added to allow the Executive Officer to make a determination that tank vent emission control achieved by an innovative technology may be approved pursuant to Section 2767.1 if it can be demonstrated that the technology meets the evaporative standards in Section 2754.

Paragraph (b) was added to allow the Executive Officer to exempt engines and equipment from the requirements of subsection 2756(b) if it can be demonstrated that they meet the diurnal emission standards in Section 2754.

§ 2767.1 – Approved Evaporative Emission Control System Components

Added section that allows the Executive Officer to evaluate and approve fuel line, fuel tank, and carbon canisters for use on evaporative emission control systems.

D. Evaporative Certification Procedures

CP-901, Certification and Approval Procedures for Small Off-Road Engine Fuel Tanks

Section 4 – Certification Overview

Clarified the submittal requirements for permeation data.

Section 5 – Certification

Modified subsection 5.1.1 to make it consistent with 13 CCR Section 2753.

CP-902, Certification and Approval Procedure for Evaporative Emission Control Systems

Section 2.2 – Performance Specifications

Removed reference to useful life.

Section 4 – Certification Overview

Reduced the number of letters representing the evaporative family code to two. Added language allowing manufacturers certifying engines and equipment under Section 2754(b) to submit Executive Order numbers for approved evaporative emission system components in lieu of test data.

Subsection 5.1.1 – Added language allowing manufacturers certifying engines and equipment under Section 2754(b) to submit Executive Order numbers for approved evaporative emission system components in lieu of test data.

Section 6.2 – Evaporative Emission Control System Modifications

Added language allowing the Executive Officer to approve fuel tank and fuel line modifications.

Section 7.9 – Test Procedures

Added language to reference “Equivalent Fuel Line”, which replaced footnote reference.

Section 7.13– Amendments to the Application

Added language specifying that only those pages affected need be submitted as part of a revised certification application. Clarified information to be submitted for identification purposes in a revised application.

Attachment 1 – SORE Evaporative Family Classification Criteria

Reduced from three to two the number of evaporative family classification codes.

Attachment 2 – Small Off-Road Engine Certification

Modified “For Systems Certified by Design” Table to allow submittal of Executive Order numbers for components in lieu of measured design values.

E. Evaporative Test Procedures

TP-901, Test Procedure for Determining Permeation Emissions from Small Off-Road Engines and Equipment Fuel Tanks

Modified title by adding “and equipment” to clarify applicability.

Section 1 – Applicability

Clarified applicability of test procedure.

Section 3 – Principle and Summary of Test Procedure

Added reference to Indolene as a test fuel. Removed reference to fusion welding. Added language requiring a seal over the tank inlet.

Section 6.1 – Added language allowing an alternative method for sealing tanks.

Section 6.4 – Relaxed resolution for measuring barometric pressure.

Section 8 – Durability Demonstration

Removed reference to High-Density Polyethylene (HDPE).

Section 10.1 – Added language allowing alternative methods for performing leak checks.

Section 14 – Calculating Permeation Rate Using Trip Blank Correction

Added footnote defining a tank's internal surface area.

Section 15 – Alternative Test Procedures

Removed language limiting use of approved alternative test procedures. Added language allowing the broad use of an approved alternative test procedure.

TP-902, Test Procedure for Determining Diurnal Evaporative Emissions from Small Off-Road Engines

Modified title by adding "and equipment" to clarify applicability.

Section 1 – Applicability

Added reference to equipment to clarify applicability.

Section 3 – Durability Demonstration

Replaced entire section with an industry suggested alternative titled "Pre-Certification Requirements" that achieves the same objective as the original language. New Section references a new procedure for determining canister-working capacity that replaces reference to 40 CFR test procedure.

Section 4 – General Summary of Test Procedure

Clarified applicability of test procedure. Added language to allow engines with complete evaporative emission control systems to be tested without the chassis.

Section 5 – Instrumentation

Added language that ARB will consider data generated with a mini-SHED if approved as an alternative test procedure.

Section 5.1 – Added language to disregard references to methanol in test procedure. Removed requirement to control instantaneous temperature to within +/- 5.0 $^{\circ}$F.

Section 8 – Alternative Test Procedures

Removed language limiting use of approved alternative test procedures. Added language allowing the broad use of an approved alternative test procedure.

Attachment 1

Added new language that describes the procedure for determining carbon canister working capacity. The new procedure replaces the reference to an automotive procedure for determining canister working specified in 40 CFR Part 86.

VI. SUMMARY OF COMMENTS AND AGENCY RESPONSE – SECOND NOTICE OF MODIFIED TEXT

Written comments during the 15-day comment periods were received from the following stakeholders:

- Patricia M. Hanz, Briggs
- Steve Whitehead, Fluoro-Seal International
- David Raney, Honda
- John McKnight, NMMA
- William M. Guerry, Jr., OPEI
- Alan Dubin, Ticona/Celanese AG
- Roger Gault, EMA

A. General Comments

256. Comment: The Second Notice of Proposed Modifications continues to include recall provisions that are inconsistent both with federal regulations and with the realities of the marketplace for small off-road engines and equipment. Thus, and again as explained in the comments of OPEI as well, ARB should delete the proposed recall provisions from any final SORE Rule, and provide an alternative remedial program modeled on that adopted by EPA. (EMA)

In the governing federal register preamble, U.S. EPA has carefully constructed a federal recall policy that: (1) recognizes the impracticality of trying to recall non-registered or tracked lawn and garden equipment; (2) provides guidance on implementing more effective alternative processes and criteria to address potential non-compliance situations, and (3) sets a maximum cost cap of 75% above and beyond the foregone costs adjusted to present value. There is no reason for ARB to create regulatory confusion and uncertainty by imposing a recall policy different than the well-established policy adopted by U.S. EPA. If ARB simply incorporates U.S. EPA's abbreviated recall regulations without incorporating U.S. EPA's much clearer and expansive federal register policy, then ARB's regulations program will distort rather than harmonize with the federal program. In order to harmonize with U.S. EPA, ARB should simply add the following sentence into the final regulations: "To provide the Executive Officer with options to a mandatory recall, which would be impractical to implement, the federal U.S. EPA policy restricting the recall of small gasoline engines will be used to evaluate an individual manufacturer's proposal to implement alternative plans to address potential non-compliance situations." At a minimum, the final regulations should make it clear that the Executive Officer has available remedial options other than recall. We also request that ARB issue enforcement guidance and clearly respond to these comments in its FSOR by incorporating in its entirety the U.S. EPA recall policy set forth at 64 Federal Register. At 15219-15220 (March 30, 1999). Without the requested regulatory improvements and FSOR clarifications, it is likely that ARB compliance and enforcement personnel could impose millions of dollars in recall expenses in direct contradiction to ARB's stated intent to only use recall authority as a last resort when more effective, alternative remedies have failed. (OPEI)

Agency Response: See agency response to Comments 24 and 165.

B. Comments On The Exhaust Regulations And Test Procedures

Trans-shipment

257. Comment: The use of the phrase "introduced into commerce" in section 2403(b)(1) and section 90.103(a)(1) of the test procedures is too broad and could result in the barring of trans-shipment of products through California distribution centers to out-of-state retailers. OPEI requests that ARB consider the following language.

(a) For the model year engines or equipment subject to this Article, no person shall:

(1) manufacture for sale or lease for use or operation in California, or
(2) sell or lease or offer for sale or lease for use or operation in California or
(3) deliver or import into California for introduction into commerce [and ultimate use or operation] in California [as opposed to the legal transshipment through California distribution centers to retail locations outside of California], [should be consistent with 2403 (b)(2)(A)]. (OPEI)

Agency Response: See agency response to Comment 25.

Auxiliary Cooling Fan

258. Comment: ARB has indicated its intent in sections 90.118 and 90.307 to require manufacturers to demonstrate the need for supplemental cooling by showing that it is "representative of in-use engine operation". We believe this demonstration should be an integral part of the annual approval and certification process for these engines. (Honda)

Agency Response: Staff agrees. The regulation text reflects the comment. See agency response to Comment 167.

Testing of Multiple Engines

259. Comment: ARB should modify the revised language in section 90.104(h)(2) to prevent conflicts between the regulatory language and MSO 99-08 with regard to multiple tests required due to limits of adjustment (e.g. rich limit and lean limit), before and after maintenance, and confirmatory tests. We recommend the following:

"(vii) If the engine manufacturer conducts more than one test at a test point, the number of tests at every test point must be the same except as follows:

(A) For engines with adjustable parameters (e.g., carburetors) the tests required at the extremes of the adjustment range.

(B) For engines tested before and after maintenance is performed, the test results are averaged and consider one test point.

(C) For engines utilized for both and certification and deterioration test, a second zero hour test, conducted as a confirmatory test, is considered to be the zero hour test for deterioration and the certification.

All applicable tests must be used in the liner regression analysis as separate points to determine the DF."

"(viii)Additional engines identical to the original test engine may be tested for the purpose of determining a DF with prior approval from the Executive Officer. In such cases, data collection must remain consistent for all test engines. The testing of multiple engines requires the determination of separate DFs for each test engine. The official DF shall be the average of the separate DFs for each test engine."

"(ix) The product of the zero-hour (break-in) results from the engine multiplied by the DF is the emissions certification value for that engine family and pollutant. In the case of multiple zero-hour tests on a single engine, the engine manufacturer must select the last zero-hour test (unless, for adjustable parameters (e.g., carburetors), such a test was conducted at the extremes adjustment) as the official zero-hour test upon which the DF is applied. If multiple engines are tested for purposes of DF determination, the manufacturer must select the highest zero-hour result among the last zero-hour test of each engine as the official zero-hour test upon which the DF is applied. A manufacturer may break-in and test a separate engine for purpose of certification. This engine may be retained and used for future running change documentation."
(EMA/OPEI)

Agency Response: The proposed language in section 90.104(h)(2) is consistent with the current ARB certification guidelines (MSO 99-08 Attachment A). As for OPEI suggested language (vii)(A)-(C), these issues have already addressed in sections 90.112(c), 90.119(e)(7), and 90.104(h)(2)(ix), respectively. Commenter's proposed additional language appears too highly detailed for regulations. These issues are best handled on a case by case basis through certification because they are specific to engines and manufacturers. No additional regulatory changes were made. Please also see agency response to Comment 33.

C. Comments On The Evaporative Regulations

260. Comment: Section 2751(a)(3) - Proposed Evaporative Emission Requirements for Off-Road Equipment 2751(a)(3**)**–"introduction into commerce" is too broad and could result in the barring of transshipment of products through California distribution centers to out-of-state retailers. OPEI requests that ARB consider the following language.
(a) For the model year engines or equipment subject to this Article, no person shall:
(1) manufacture for sale or lease for use or operation in California, or
(2) sell or lease or offer for sale or lease for use or operation in California or
(3) deliver or import into California for introduction into commerce [and ultimate use or operation] in California [as opposed to the legal transshipment through California distribution centers to retail locations outside of California] (OPEI)

Agency Response: See agency response to comment 25.

261. Comment: Section 2752(a)(6) – In order to provide clarity, OPEI suggests that ARB adopt the following definition for "Equivalent Fuel Line"

"Equivalent Fuel Line" means a fuel line that permeates less than 15 grams per square meter per day when tested per SAE J1737 at 40° C and ambient pressure using Phase II California Reformulated Certification (CERT). At the manufacturers' discretion higher temperature and/or the following fuels can be utilized: CE10, CM15, or Indolene.

In addition, OPEI requests that ARB also revise similar language in Sections 2754(a)(1)(C) and 2754(b)(1)(B). (OPEI)

Agency Response: Rejected suggested change. The existing language allows manufacturers to test with alternative fuels at higher temperatures than those specified by SAE J1737.

262. Comment: Section 2753 (b)(1) - The revised requirement to allow testing on multiple fuels at any temperature (in excess of a minimum) must be clarified to identify the conditions for determination of compliance (40° C, ambient pressure, CA Phase II fuel) and the options for demonstration of compliance; e.g. higher temperature testing on any of the fuels identified. EMA recommends the following language change: "Equivalent Fuel Line" means a fuel line that permeates less than 15 grams per square meter per day when tested per SAE J1737 at 40° C and ambient pressure using Phase II California Reformulated Certification (CERT). At the manufacturers' discretion higher temperature and / or the following fuels can be utilized: CE10, CM15, or Indolene. (EMA)

Agency Response: Rejected suggested change. Section 2752(a)(6), 2754(a)(1)(C), and 2754(b)(1)(B) already allows manufacturers the option to test at higher temperatures and/or to use CERT fuel, CE10, CM15, or Indolene to demonstrate compliance.

263. Comment: Section 2754(a)(1)(C) – Fuel line requirements must be modified and consistent with section 2753(b)(1). (EMA)

Agency Response: See agency response to Comment 262.

264. Comment: Section 2754(b)(1)(B) – Fuel line requirements must be modified and consistent with section 2753(b)(1). (EMA)

Agency Response: See agency response to Comment 262.

265. Comment: Section 2763(a)(3)(B) - The only options provided for the Executive Officer are to withdraw the determination of nonconformity or force a mandatory recall. The regulations should acknowledge the impracticality of a recall for this industry and the Executive Officer must have alternatives or flexibility to allow other options. See language 2405.3 (a) earlier. (OPEI)

Agency Response: See agency response to Comment 24.

266. Comment: Section 2770 - Denial, suspension or revocation duplicates and conflicts with § 2765 (c) suspension and revocation of executive orders. Revocation of Executive Orders should be reserved for material violations (i.e., those that have a demonstrated adverse impact on air quality) rather than for administrative or paperwork violations (e.g., minor labeling discrepancies). ARB should strike the provision that labeling discrepancies may lead to Executive Order revocation. (OPEI)

Agency Response: See agency response to Comment 95 and Comment 216.

267. Comment: Section 2772 - Penalties - The provisions as proposed are not acceptable. Some limits need to be in place to provide guidance on the maximum penalties. OPEI suggests that ARB clarify its current enforcement policy and include in it and in the final regulations a reasonable prudent precaution defense. (OPEI)

Agency Response: See agency response to Comment 96 and Comment 217.

D. Comments On The Evaporative Certification Procedures

Comment on CP-902

268. Comment: CP 902 Attachment 2 Item (d) identifies "Running Loss Vented Emissions Controlled (yes/no)". This is not appropriate because all regulatory options now require running loss control. (EMA/OPEI)

Agency Response: Rejected suggested change. The regulations require that running loss emissions be controlled from being emitted into the atmosphere. The purpose of the yes/no checkbox in the certification application is to obtain affirmation from the manufacturer that running loss emissions are controlled. The checkbox also allows certification staff to quickly ascertain that running loss emissions are controlled.

269. Comment: Section 4 – Under CP-902 Certification Procedures Section 4, Certification Overview, a new sentence was revised in both the 30-day and 15-day notice. It is Honda's understanding that the ARB staff's intention with this sentence was that the words "manufacturer's option" are intended to allow the 2 letters to be part of the engine family name or to appear somewhere else on the label (similar to the exhaust control identification). The language is not perfectly clear and we suggest a revision of the sentence to clarify staff's intent.

In the 15-day notice – "Any engine certified as complete (both exhaust and evaporative emissions) unit can be certified, at the manufacturer's option, under the exhaust family name where the last two letters represent the evaporative family code."

Honda's suggested revision to this sentence would be – "Any engine certified as a complete unit (both exhaust and evaporative emissions) can be certified as one common exhaust and evaporative family name. At the manufacturer's option the two letters identifying the evaporative control system can be part of the family name or be placed elsewhere on the emission label (as allowed for the exhaust control system)." (Honda)

Agency response: Incorporated suggested change.

E. Comments On The Evaporative Test Procedures

Comment on TP-901

270. Comment: Ticona Technical Polymers recently conducted a new round of permeation testing on blow-molded fuel tanks, per ARB test procedure TP-901, at Automotive Testing Laboratories in Mesa, AZ, completed on 5-21-2004. The results from this testing demonstrate the viability of two (2) separate and distinct polymer material candidates as potential barrier solutions for SORE fuel tanks, to meet the evaporative emissions requirement of 1.0 g/m2-day. However, some of the data exhibited significant variation due to inconsistencies and difficulties with the test protocol itself, as described in TP901, Section 6 (Equipment) and Section 10 (Sealing Procedure). Specifically these issues had to do with sealing of the fuel tank via fusion or hot-plate welding; leak verification; measurement technique (weight loss measurement via scale); and determining the appropriate correlation coefficient (r^2) to use. Representatives from Ticona would welcome the opportunity to discuss these issues with ARB in greater detail, in order to find a more accurate and consistent method for fuel permeation testing of molded plastic tanks.

Second, we would like to discuss an alternative to the current certification procedure, whereby the material itself could be certified based on its demonstrated permeation resistance to California CERT fuel. Fuel tank manufacturers would then be able to certify that their tanks meet ARB requirements based on their use of such a material, at a given wall thickness, as an alternative to having to test the tank itself. This would greatly alleviate the difficulties and hardships inherent in testing of larger fuel tanks, whereby the sealing of the tank and leak verification procedures become even more problematic. Ticona's fuel permeation specialists believe that an accurate and consistent method for certifying the permeation resistance of a polymeric material is via the so-called "speciation method", as described in SAE J2659 "Test Method to Measure Fluid Permeation of Polymeric Materials by Speciation". Representatives from Ticona request the opportunity to discuss this proposal with ARB in greater detail, as to the feasibility of certifying the barrier material itself for fuel tank applications via SAE J2659. (Ticona)

Agency Response: The 15-day modifications to TP-902 sections 6.1 and 10.1 released on May 14, 2004 allow alternative methods to seal tanks and to verify that a tank is sealed other than water immersion. Good engineering judgment should be used in selecting alternative methods to seal the tank as specified in TP-901 section 10.2. The existing method in TP-901 to check for leaks has worked well for ARB for portable fuel containers and lawn and garden equipment fuel tanks. The ARB recognizes that using a balance to measure extremely low permeation rates must have certain sensitivity requirements. TP-901 section 5 contains the minimum sensitivity requirements for balances used to measure permeation. Additionally, ARB can approve alternative test procedures pursuant to TP-901 section 15.

271. Comment: OPEI continues to be concerned that there is poor data support for the tank permeation standard proposed in the regulations per the test method in

TP-901. In addition, for test purposes, EPA requires a constant temperature profile of 28º C during the duration of the test. In order to harmonize with the federal regulations, and avoid inconsistent testing requirements, OPEI requests that ARB adopt the same 28º C temperature profile in lieu of ARB's proposed 40° C temperature profile. OPEI is not suggesting that ARB should change the current specified ARB test fuels. (OPEI)

Fluoro-Seal International agrees with OPEI in the concern that there is poor data support for the tank permeation standard proposed in the regulations per the test method in TP-901. Harmonization with the federal regulations will make testing protocols consistent and by using an ethanol blended fuel, more closely match fuels used in these pieces of equipment. Fluoro-Seal International requests that ARB adopt the same 28°C temperature profile in lieu of ARB's proposed 40° C temperature profile. (Fluoro-Seal)

Agency Response: Same as response to Comment 140. Additionally, in an effort to harmonize with federal protocols, the ARB will accept data generated when using aggressive fuels containing alcohol such as CM15 and CE10. However, the testing must be performed at 40º C as specified by TP-901.

272. Comment: Section 4 - Polymer conditioning is influenced by a number of factors; wall thickness, polymer, additives, EVOH layering, fluorination treatment, coatings etc. Experience and testing has shown that these conditions at 30° C can cause a variation of preconditioning equilibrium to in some cases less 14 days or as much 365 days. The majority of conditions allow conditioning in much less than 140 days.

Testing time is a major pricing factor and reducing the required preconditioning time will save both time and money. ARB can achieve their goal of preconditioning equilibrium by simply requiring documentation that the tank has reached equilibrium. Suggested changes to item #4 are shown below and will allow ARB accomplish its goal of knowing that equilibrium has been accomplished and at the same time save industry a great deal of time and money. (Fluoro-Seal)

4. PRECONDITIONING PROCEDURE

After performing the durability tests, ensure that the fuel tank and any vent outlets are sealed and leak tight. This can be accomplished by fusion welding a **~~HDPE~~** coupon over the fuel outlet(s) or by inserting and clamping metal plugs into each outlet. Once sealed, fill the tank to its nominal capacity with CERT fuel and attach the OEM fuel cap. Place the tank in a suitable vented enclosure. Record the preconditioning start date on the field data sheet. Soak the tank at 30º C ± 10° C. ~~for not less than 140 days.~~ Data documenting that the tank has reached equilibrium must be provided. ~~for tanks soaked less than 140 days.~~ Accelerated preconditioning of the tank can be accomplished by soaking the tank at an elevated temperature.

Agency Response: See agency response to Comment 273 below.

273. Comment: Section 9 – "Preconditioning": The language should be revised to clarify that soak times of less than 140 days are possible provided equilibrium has been achieved. We suggest the following language: "Soak the tank at 30°C ± 10°C. However, accelerated preconditioning of the tank can be accomplished by soaking at an elevated temperature. Data documenting that the tank has reached equilibrium must be provided for tanks soaked less than 140 days." (EMA)

Agency Response: Rejected suggested change. Existing language allows tanks to be soaked for fewer than 140 days if the manufacturer provides data showing that tank permeation has reached equilibrium.

274. Comment: Sections 11.5 and 15 - OPEI is disappointed that ARB did not consider its comments on these two sections – namely, to reduce the number of consecutive days from 10 to 4 so as to reduce testing requirements over weekends. OPEI requests that testing should be at least for 4 days or until 95% r^2 value is met but no greater than 10 days. In the alternative, OPEI requests that ARB allow this reduced testing, based on data generated and submitted to ARB by manufacturers as part of the certification process. (OPEI)

Agency Response: Same as response to Comment 246.

Comment on TP-902

275. Comment: Section 3 - OPEI requests that the following changes be made to the paragraph below in this section. Specifically, OPEI is requesting that the last sentence in the paragraph be struck since it is potentially confusing with regulatory language in Section 2754 (see ~~strikeout~~ below). In addition OPEI urges ARB to state that it will apply the same criteria and procedures to pressurized canister systems that it will apply to innovative products under Section 2767. Therefore, OPEI suggests adding the language shown in underline below.

"For evaporative emission control systems that only use a carbon canister and do not pressurize the fuel tank, the carbon canister must have a working capacity of at least 1.4 grams of vapor storage capacity per liter of nominal fuel tank volume for tanks greater than or equal to 3.78 liters, and 1.0 grams of vapor storage capacity per liter of nominal fuel tank volume for tanks less than 3.78 liters. For evaporative emission control systems that use a carbon canister and pressurized fuel tank, the working capacity can be specified by the applicant. To determine their overall compliance with the diurnal standards in Section 2754, the Executive Order will apply the same criteria and procedures to these pressurized canister systems that it will apply to innovative products under Section 2767. ~~For all systems utilizing actively purged carbon canisters, running loss emissions must be controlled from being emitted into the atmosphere.~~" (OPEI)

Agency Response: Rejected suggested change. Section 2754 requires the Executive Officer to approve running loss control for all evaporative systems, except for those systems using actively purged carbon canisters that meet the working capacity requirements of TP-902. Evaporative systems using actively purged

carbon canisters that do not meet the working capacity requirements of TP-902 are already required to meet a diurnal performance standard in Section 2754(a).

276. Comment: Section 3.2(a) - The elimination of a working capacity specification for systems that utilize a pressurized tank in combination with a carbon canister is not appropriate. No data has been made available in the public domain to indicate what level of control can be achieved. The ARB Staff has identified a means for development and approval of innovative products in Section 2767. The language related to this concept should be deleted. Also given the expressed approval for actively purged carbon canisters for running loss control (reference Sections 2754 (a)(1)(A) and 2754 (b)(1)(A)) the last sentence referring to canisters and control of running losses should be deleted. (EMA)

Agency Response: See agency response to Comment 275 and Comment 280 below.

277. Comment: Section 6.1 - The same clarification is required for preconditioning as identified above for TP-901 section 9. We recommend the following language: "Soak the tank at 30° C ± 10° C. Data documenting that the tank has reached equilibrium must be provided for tanks soaked less than 140 days. The period of slosh testing …." (EMA)

Agency Response: See agency response to Comment 273.

278. Comment: Section 9 - OPEI requests that ARB revise the language as shown in *italics* in the following section under TP-901 Section 9 "Preconditioning." This will streamline the language and avoid confusion in interpretation. (OPEI)

"After performing the durability tests, ensure that the fuel tank and any vent outlets are sealed and leak tight. This can be accomplished by fusion welding a ~~**HDPE**~~ coupon over the fuel outlet(s) or by inserting and clamping metal plugs into each outlet. Once sealed, fill the tank to its nominal capacity with CERT fuel and attach the OEM fuel cap. Place the tank in a suitable vented enclosure. Record the preconditioning start date on the field data sheet. Soak the tank at 30° C ± 10° C. However, accelerated preconditioning of the tank can be accomplished by soaking the tank at an elevated temperature. Data documenting that the tank has reached equilibrium must be provided for tanks soaked less than 140 days."

Agency Response: Rejected suggested change. Existing language already states that ARB will accept data generated in less than 140 days if the manufacturer provides data indicating a stable permeation rate was attained.

279. Comment: Section 6.1 – OPEI requests that ARB revise the language (shown in *italics* and ~~strikeout~~) in the para 1 of TP-902 Section 6.1. This will streamline the language and avoid confusion in interpretation. (OPEI)

"The purpose of the preconditioning period is to introduce gasoline into the fuel system and precondition all fuel system components. Precondition the tank and other fuel delivery system components by filling the tank to its nominal capacity with fresh test fuel as specified in Section 7 of these procedures. After filling the tank

start the engine and allow it to run at rated speed (unloaded or blade load) for approximately five minutes. Soak the tank and other components at 30° C ±10° C. ~~for not less than 140 days.~~ Data documenting that the tank has reached equilibrium must be provided for tanks soaked less than 140 days. The period of slosh testing may be considered part of the preconditioning period provided each tank and all fuel system components tested remain filled with fuel and are never empty for more than **~~fifteen minutes~~ one hour** over the entire preconditioning period."

Agency Response: It is ARB's intent to allow manufacturers accelerated preconditioning of the tank if the manufacturer provides data indicating a stable permeation rate was attained. For clarification, ARB incorporated the suggested change.

280. Comment: The text for section 3.2 of Test Procedure 902 contains further revisions from section 3 in the February 9, 2004, proposed text, in what appears to be another attempt to preserve an advantage for evaporative emission control systems that use pressurized fuel systems. We provide comments on that aspect of the new text later in these comments. Initially, however, it is important to note that the new revised text has added a requirement that all actively purged canister systems must control running losses. That requirement is in turn carried over in the proposed amendments to the title 13 regulatory text. See proposed 13 CCR §2754(a)(1)(A). If this requirement has any meaning other than simply to specify the use of an actively purged canister, it would lack the clarity required for a valid regulation.

Given any other meaning than as requirement to design the canister for active purge, enforcement of this new requirement would necessarily be so subjective as to violate principles of objectivity and fairness required by the due process clause and general principles of administrative law. The rule should provide that any system using an actively purged canister will be deemed to adequately control running losses and will meet emissions requirements.

With respect to the special allowance made for pressurized fuel systems (sometimes called "hybrid" systems), it is now evident that this provision was added to the rule after the public hearing by the ARB staff at the request of American Honda Motor Company. As indicated in comments being filed by the Engine Manufacturers Association, which we support, ARB has never provided the public with access to any data to support this provision. Unless and until the reason for this addition has been adequately explained and there has been an opportunity for public comment on that explanation, Briggs will continue to oppose this provision.

In addition to its potential anticompetitive aspects, this feature of the rule raises significant environmental issues. Compared to a system that has minimum the working capacity specified by the regulation, an evaporative emissions control system operating with positive pressure in the fuel system without that minimum working capacity will produce more evaporative emissions under some normal and abnormal operating conditions than a system that has the minimum working capacity specified by the regulation. If the special hybrid systems were expected to have the regulation's minimum working capacity, then there would be no need for the special provisions for hybrid evaporative systems, and the second sentence of section 3.2(a) in Test Procedure 902 should be simply deleted.

Finalization of the special provisions for hybrids in the current posture of this rulemaking would be inconsistent with two different statutes. The first is the Government Code. Industry participants in the current rulemaking have asked on a number of occasions if there is any data or other evidence that supports the special provisions for so-called "hybrid" evaporative control systems. ARB staff recently advised an EMA representative that in considering those provisions and in deciding to propose them for inclusion in the regulation, the ARB staff considered test results or analysis obtained from U.S. EPA related to marine engines or equipment.

The relevant data or other information are not contained in this rulemaking file, have never been identified with sufficient specificity for the public to locate them, and cannot be located without further and more specific references from ARB. Those data or other information are clearly of central importance to the decision to include these special provisions for hybrids. ARB must add relevant records to the rulemaking file under Government Code § 1347.3(b)(6) or (7). In addition, the Government Code requires that any documents embodying such data or information must be made available for public review or comment for at least 15 days to EMA and other parties who testified at last year's public hearing.

Moreover, CEQA generally requires an additional period for public comment on this special provision being added to the rule. The Public Resource Code ("PRC") requires a 30 –day comment period if any "significant " changes occur after the initial comment period is completed. PRC §§21092.1 (requiring more notice and comment if "new information is added"), 14 CCR § 15088.5(a) ("the term 'new information' can include changes in the project"), PRC § 21091 (requiring at least 30-days), 14 CCR § 15105 (requiring 30-day comment period). Although ARB's adoption, of a certified regulatory program exempts it from some CEQA requirements, CEQA's other procedural programs must comply with the notice and comment periods applicable to other public agencies under CEQA.

Those two statutory requirements to permit public comment on the basis for the new special provision for hybrid evaporative control systems would apply to any data or other information from any source on which ARB would basis the special provision for hybrids, even if it did not come from EPA. Depending on the data or other information, it might be necessary for ARB to conduct further proceedings, including a public meeting or hearing, specifically to consider whether to include the special provisions for hybrid canisters in the final rule. Finalization of this rule at this point would also be inconsistent with ARB's statutory authority. (Briggs)

Agency Response: The proposed regulations released on February 9, 2004 for a 30-day comment period contained a requirement to control running loss evaporative emissions. This requirement was also contained in the proposed regulations released on May 14, 2004 for a 15-day comment period. The general requirement applies to both canister only and hybrid evaporative emission control systems. The regulations clearly specify that actively purged carbon canisters that meet the working capacity specifications in TP-902 are considered compliant with the running loss requirements. The regulations also specify that evaporative systems that do not meet the working capacity requirements of TP-902 must be approved by the Executive Officer during certification. For systems that do not meet the canister working capacity requirements in TP-902, the ARB intends to perform an

engineering evaluation of the complete evaporative system to determine compliance with the running loss requirements.

Staff recognizes that canisters on hybrid systems would absorb fewer hydrocarbon emissions over periods between uses. This is supported by the observation that pressurized systems control a portion of diurnal emissions as documented by an ARB study Diurnal Testing of Walk-Behind Mowers Configured with Fuel Tank Pressure Relief Valves (September 2002), which was cited as a reference in the Staff Report. Because there are three distinct evaporative emission phases (running loss, hot soak, and multiple diurnals) during the period between equipment uses, controlling a portion of the diurnal emissions by tank pressurization allows the use of a smaller carbon canister than would otherwise be needed with a canister only system. Based on the study cited above, ARB modified the regulations to allow the Executive Officer to determine running loss control for hybrid or other pressurized systems.

ARB staff was aware of the U.S. EPA marine tank study that corroborated ARB's findings. However, the U.S. EPA study was not cited as a reference in the Staff Report because staff used ARB's own study, cited above, to support the requirements for running loss control.

VII. MODIFICATIONS TO THE ORIGINAL PROPOSAL – THIRD NOTICE OF MODIFIED TEXT

At its September 25, 2003, public hearing, the Air Resources Board (ARB or the Board) approved the adoption of sections 2750, 2751, 2752, 2753, 2754, 2755, 2756, 2757, 2758, 2759, 2760, 2761, 2762, 2763, 2764, 2765, 2766, 2767, 2768, 2769, 2770, 2771, 2772, and 2773, title 13, CCR, along with the incorporated “Small Off-Road Engine Evaporative Emission Test Procedures, TP-901 and TP-902” and the incorporated “Small Off-Road Engine Evaporative Emissions Control System Certification Procedures, CP-901 and CP-902.” The purpose of those regulations and test procedures is to establish evaporative emission standards for small off-road engines, and equipment that use small off-road engines, less than or equal to 19 kilowatts (kW). The Board also approved the adoption of sections 2405.1, 2405.2, and 2405.3 and amendments to sections 2400, 2401, 2403, 2404, 2405, 2407, 2408, and 2409, title 13, CCR, along with amendments to the incorporated "California Exhaust Emission Standards and Test Procedures for 1995 and later Small Off-Road Engines," as last amended January 28, 2000, title 13, CCR. In addition, the Board approved the adoption of the incorporated “California Exhaust Emission Standards and Test Procedures for 2005 and Later Small Off-Road Engines." The purpose of those modifications to the regulations and test procedures is to include more stringent exhaust emission standards for small off-road engines less than or equal to 19 kW. In addition, the purpose of the updated test procedures is to more closely harmonize with the federal small engine test procedures (40 CFR, part 90, subparts A, B, D, and E and corresponding appendices).

At the hearing, the staff presented, and the Board approved modifications to the regulations originally proposed in the Staff Report released on August 8, 2003. In response to comments received during the 45-day comment period and at the Board hearing on September 25, 2003, modified text was made publicly available for a 30-day comment period on February 9, 2004. In response to comments received during the 30-day comment period, modified text was made publicly available for a 15-day comment period on May 14, 2004. The modified text described in this document responds to comments received during the 15-day comment period that ended June 1, 2004. The following describes the modifications, by section number:

A. EXHAUST TEST PROCEDURES

§90.103 – Exhaust emission standards

In the previous Notice of Public Availability of Modified Text and corresponding attachment, released on May 14, 2004, staff indicated that the original paragraph (a)(3)(ii) was to be deleted and replaced by new language. However, in the attachment the original language with modifications was incorrectly included. This error has been corrected by showing that the original paragraph (a)(3)(ii) is to be deleted in its entirety.

§90.118 – Certification procedure – service accumulation and usage of DFs

Paragraph (f) was modified to require manufacturers to justify the need for and the use of supplemental cooling in the application for certification in addition to the demonstration that the cooling is representative of in-use operation.

§90.307 – Engine cooling system

Similar to the modification to section 90.118 noted above, this section was modified to require manufacturers to justify the need for and the use of supplemental cooling in the application for certification in addition to the demonstration that the cooling is representative of in-use operation.

B. EVAPORATIVE REGULATIONS

§2767(a) – Innovative Products

Modified subsection to require that tank vent controls meet all of the requirements of Section 2754.

C. EVAPORATIVE TEST PROCEDURES

TP-902, Test Procedure for Determining Diurnal Evaporative Emissions from Small Off-Road Engines

Section 6.1, paragraph 1 was modified to require data documenting a stable permeation rate for preconditioning soak periods less than 140 days.

D. EVAPORATIVE CERTIFICATION PROCEDURES

CP-902, Certification and Approval Procedure for Evaporative Emission Control Systems

Section 4, paragraph 2 was modified to clarify the placement of the evaporative code on the label.

Several non-substantial modifications have been made throughout the regulations and test procedures to correct grammatical and typographical errors, correct references and citations, and improve the clarity of the regulations and test procedures.

VIII. SUMMARY OF COMMENTS AND AGENCY RESPONSE – THIRD NOTICE OF MODIFIED TEXT

Written comments during the 15-day comment periods were received from the following stakeholders:

- Patricia M. Hanz, Briggs
- William M. Guerry, Jr., OPEI
- Roger Gault, EMA

A. Comments On The Exhaust Regulations And Test Procedures

Auxiliary Cooling Fan

281. Comment: ARB should modify the revised language in sections 90.118(f) and 90.307 of the test procedures to clarify the criteria to be utilized by the Executive Officer to approve the application for certification. Specifically, if there are additional criteria from the stated additional requirement of the section, i.e. "representative of in-use engine operation" these must be identified and uniformly applied to all applicants and from year to year. Additionally, in the interest of streamlining the certification process, we recommend that ARB allow manufacturers the option of obtaining pre-approval of the auxiliary fan issue prior to the certification process. We recommend the following language:

… "The use of auxiliary fans for engine cooling must be indicated in the application for certification. The manufacturer must justify, to the satisfaction of the Executive Officer in the application for certification, the need for auxiliary fans and that the use of such fans is representative of in-use operation. As an option, a manufacturer, at its discretion, may obtain pre-approval for use of its auxiliary fan for engine cooling prior to submittal of applications for certification. A single pre-approval can be used for multiple applications for certification as long as the manner of engine cooling is equivalent to that pre-approved by the Executive Officer." … (EMA/OPEI)

Agency Response: Staff intends to uniformly apply any new requirements to all applicants as it currently does today for all applicants for certification. In the third notice of modified text, the structure for reporting the use of auxiliary fans was changed from requiring manufacturers to maintain all records regarding their use and make them available at the request of the Executive Officer, to documenting these records as part of certification processes. The specific criteria for determining whether the use of fans is representative of in-use operation is best handled on a case by case basis during certification because the reasons for using fans may be specific to engines and their applications, and manufacturer's certification testing protocols. In addition, staff fully intends to encourage manufacturers to request pre-approval of the use of auxiliary fans. However, depending on justification provided for needing auxiliary fans, staff may stop short of providing a single pre-approval that can be used for multiple applications for certification. Again, this

would need to be evaluated on a case by case basis. Please also see agency response to Comment 167.

Trans-shipment

282. Comment: The use of the phrase "introduced into commerce" in sections 2403, 2751(a)(3), and 90.103 of the test procedures is too broad and could result in the barring of transshipment of products through California distribution centers to out-of-state retailers. OPEI requests that ARB consider modifying the language as suggested in Comments 164 and 257. (OPEI)

Agency Response: See agency response to Comment 25.

Recall

283. Comment: The only options provided for the Executive Officer are to withdraw the determination of nonconformity or force a mandatory recall. The Executive Officer must have alternatives or flexibility to allow other options. (OPEI)

Agency Response: See agency response to Comments 24 and 165.

Testing of Multiple Engines

284. Comment: OPEI requests that ARB revise the language in the sections 90.104(h)(2)(vii), (viii), and (ix) of the test procedures in order to address OPEI concerns and harmonize the language with Mailout 99-08. OPEI requests that ARB consider modifying the language as suggested in Comment 259. (OPEI)

Agency Response: See agency response to Comments 33 and 259.

B. Comments On The Evaporative Regulations

285. Comment: The text for section 3.2 of Test Procedure 902 contains further revisions from section 3 in the February 9, 2004, proposed text, in what appears to be another attempt to preserve an advantage for evaporative emission control systems that use pressurized fuel systems. We provide comments on that aspect of the new text later in these comments. Initially, however, it is important to note that the new revised text has added a requirement that all actively purged canister systems must control running losses. That requirement is in turn carried over in the proposed amendments to the title 13 regulatory text. *See* proposed 13 CCR § 2754(a)(1)(A). If this requirement has any meaning other than simply to specify the use of an actively purged canister, it would lack the clarity required for a valid regulation.

Given any other meaning than as a requirement to design the canister for active purge, enforcement of this new requirement would necessarily be so subjective as to violate principles of objectivity and fairness required by the due process clause and general principles of administrative law. The rule should provide that any system

using an actively purged canister will be deemed to adequately control running losses and will meet emissions requirements.

With respect to the special allowance made for pressurized fuel systems (sometimes called “hybrid” systems), it is now evident that this provision was added to the rule after the public hearing by the ARB staff at the request of American Honda Motor Company. As indicated in comments being filed by the Engine Manufacturers Association, which we support, ARB has never provided the public access to any data to support this provision. Unless and until the reason for this addition has been adequately explained and there has been an opportunity for public comment on that explanation, Briggs will continue to oppose this provision.

In addition to its potential anticompetitive aspects, this feature of the rule raises significant environmental issues. Compared to a system that has the minimum working capacity specified by the regulation, an evaporative emissions control system operating with positive pressure in the fuel system without that minimum working capacity will produce more evaporative emissions under some normal and abnormal operating conditions than a system that has the minimum working capacity specified by the regulation. If the special hybrid systems were expected to have the regulation’s minimum working capacity, then there would be no need for the special provision for hybrid evaporative systems, and the second sentence of section 3.2(a) in Test Procedure 902 should be simply deleted.

Finalization of the special provisions for hybrids in the current posture of this rulemaking would be inconsistent with two different statutes. The first is the Government Code. Industry participants in the current rulemaking have asked on a number of occasions if there is a data or other evidence that supports the special provisions for so-called “hybrid” evaporative control systems. ARB staff recently advised an EMA representative that in considering those provisions and in deciding to propose them for inclusion in the regulation, the ARB staff considered test results or analysis obtained from U.S.EPA related to marine engines or equipment.

The relevant data or other information are not contained in this rulemaking file, have never been identified with sufficient specificity for the public to locate them, and cannot be located without further and more specific references from ARB. Those data or other information are clearly of central importance to the decision to include these special provisions for hybrids. ARB must add the relevant records to the rulemaking file under Government Code § 1347.3(b)(6) or (7). In addition, the Government Code requires that any documents embodying such data or information must be made available for public review or comment for at least 15 days to EMA and other parties who testified at last year’s public hearing. *See* Government Code § 11347.1.

Moreover, CEQA generally requires an additional period for public comment on this special provision being added to the rule. The Public Resources Code (“PRC”) requires a 30-day comment period if any “significant” changes occur after the initial public comment period is completed. PRC §§ 21092.1 (requiring more notice and comment if :new information is added”), 14 CCR § 15088.5(a) (“the term ‘new information’ can include changes in the project”), PRC § 21091 (requiring at least

30 –days), 14 CCR § 15105 (requiring 30-day comment period). Although ARB's adoption of a certified regulatory program exempts it from some CEQA requirements, CEQA's other procedural requirement still apply to ARB. In particular, certified programs must comply with the notice and comment periods applicable to other public agencies under CEQA.

Those two independent statutory requirements to permit public comment on the basis for the new special provision for hybrid evaporative control systems would apply to any data or other information from any source on which ARB would basis the special provisions for hybrids, even if it did not come from EPA. Depending on the data or other information, it might be necessary for ARB to conduct further proceedings, including a public meeting or hearing, specifically to consider whether to include the special provisions for hybrid canisters in the final rule. Finalization of the rule at the this point would also be inconsistent with ARB's statutory authority. (Briggs)

Agency Response: See agency response to Comment 280.

286. Comment: Section 2752 (a)(6) - In order to provide clarity, OPEI suggests that ARB adopt the following definition for "Equivalent Fuel Line"

"Equivalent Fuel Line" means a fuel line that permeates less than 15 grams per square meter per day when tested per SAE J1737 at 40° C and ambient pressure using Phase II California Reformulated Certification (CERT). At the manufacturers' discretion higher temperature and/or the following fuels can be utilized: CE10, CM15, or Indolene.

In addition, OPEI requests that ARB also revise similar language in Sections 2754(a)(1)(C) and 2754(b)(1)(B). (OPEI)

Agency Response: See agency response to Comment 261.

287. Comment: Section 2754(a)(1)(A) and Section 2754 (b)(1)9A) – Increase clarity regarding sufficient running loss control demonstration by actively purged carbon canisters. Modify language as follows:

"Submit a determination in the certification application that running loss emissions are controlled from being emitted into the atmosphere. The Executive Officer must approve the determination for an Executive Order of Certification to be issued. ~~Approval by the Executive Officer is not required if actively purged carbon canisters meeting the requirements of this article are used.~~ Engines/equipment utilizing an actively purged carbon canister meeting the requirements of this article and minimum working capacity requirements of TP-902 shall be considered an adequate demonstration of running loss control and shall not require separate approval from the Executive Officer." (Briggs)

Agency Response: Suggested modification is not necessary. The requirements for actively purged carbon canisters are identified in 13 CCR Section 2754 Table 1, which references canister design requirements specified in TP-902.

288. Comment: Products certified to the performance standard should not be required to use any specific type of fuel hose. Requiring a specific type of hose constitutes a standard within a standard for products that meet the diurnal test requirements. Delete section 2754 (a)(1)(C). (Briggs)

Agency Response: Rejected suggested change. Section 2754, Table 1, Footnote 1 clearly specifies that for Class I equipment certifying to section 2754 (a), the fuel hose requirement is for model year 2006 only. For Class II equipment the fuel hose requirement is for model year 2006 and 2007 only.

289. Comment: Section 2763(a)(3)(B) The only options provided for the Executive Officer are to withdraw the determination of nonconformity or force a mandatory recall. The regulations should acknowledge the impracticality of a recall for this industry and the Executive Officer must have alternatives or flexibility to allow other options. (OPEI)

Agency Response: See agency response to Comment 24.

290. Comment: Improve clarity of innovative products evaluation by not suggesting that the evaluation is limited to diurnal testing. Modify the language as follows: "The Executive Officer may make a determination that tank vent emission control achieved by an innovative technology reveals that the technology can meet the ~~diurnal~~ evaporative emission standards in section 2754." (Briggs)

Agency Response. "The reference to "diurnal" was deleted in modifications proposed on June 30, 2004.

291. Comment: Denial, suspension or revocation duplicates and conflicts with § 2765 (c) suspension and revocation of executive orders. Revocation of Executive Orders should be reserved for material violations (i.e., those that have a demonstrated adverse impact on air quality) rather than for administrative or paperwork violations (e.g., minor labeling discrepancies). ARB should strike the provision that labeling discrepancies may lead to Executive Order revocation. (OPEI)

Agency Response: See agency response to Comments 95 and 216.

292. Comment: The provisions as proposed are not acceptable. Some limits need to be in place to provide guidance on the maximum penalties. OPEI suggests that ARB clarify its current enforcement policy and include in it and in the final regulations a reasonable prudent precaution defense.

Agency Response: See agency response to Comments 96 and 217.

C. Comments On The Evaporative Certification Procedures

293. Comment: CP-902 Attachment 2 – Modify form as follows: "~~d) Running~~d) Running Loss Vented Emissions Controlled (yes/no)Control: Actively purged carbon canister Other (provide demonstration)" (Briggs)

Agency Response: See agency response to Comment 268. Section 2754 (a)(1)(A) and Section 2754 (b)(1)(A) requires manufacturers to submit a running loss determination. Requested change is not necessary.

294. Comment: CP 902 Attachment 2 Item (d) identifies "Running Loss Vented Emissions Controlled (yes/no)". This is not appropriate because all regulatory options now require running loss control. (OPEI)

Agency Response: See agency response to Comment 268.

D. Comments On The Evaporative Test Procedures

295. Comment: OPEI requests that ARB revise the language (shown in underline) in the following section under TP-901 Section 9 "Preconditioning." This will streamline the language and avoid confusion in interpretation.

"After performing the durability tests, ensure that the fuel tank and any vent outlets are sealed and leak tight. This can be accomplished by fusion welding a ~~**HDPE**~~ coupon over the fuel outlet(s) or by inserting and clamping metal plugs into each outlet. Once sealed, fill the tank to its nominal capacity with CERT fuel and attach the OEM fuel cap. Place the tank in a suitable vented enclosure. Record the preconditioning start date on the field data sheet. Soak the tank at 30º C ± 10° C. However, accelerated preconditioning of the tank can be accomplished by soaking the tank at an elevated temperature. Data documenting that the tank has reached equilibrium must be provided for tanks soaked less than 140 days." (OPEI)

Agency Response: Rejected suggested change. Existing language allows tanks to be soaked for fewer than 140 days if data is submitted that documents that the tank has reached equilibrium. The acceptance criteria for tanks soaked less than 140 days is specified in TP-901 section 11.5.

296. Comment: Clarify the working capacity requirements in TP-902 section 3.2(a) and evaluation required for systems of alternative configurations. Modify text as follows: "For evaporative emission control systems that only use a carbon canister ~~and do not pressurize the fuel tank~~, the carbon canister must have a working capacity of at least 1.4 grams of vapor storage capacity per liter of nominal fuel tank volume for tanks greater than 3.78 liters, and 1.0 grams of vapor storage capacity per liter of nominal fuel tank volume for tanks less than 3.78 liters. Alternative fuel tank venting controls may be evaluated and approved per Section 2767. ~~For evaporative emission control systems that use a carbon canister and a pressurized fuel tank, the working capacity must be specified by the applicant. For all systems utilizing actively purged carbon canisters, running loss emissions must be controlled from being emitted into the atmosphere.~~ (Briggs)

Agency Response: See agency response to Comment 275. Other suggested changes rejected as they would remove specificity and not require a manufacturer of a hybrid system to provide carbon canister specifications.

297. Comment: TP-902 Section 3 Durability Demonstration - OPEI requests that the following changes be made to the paragraph below in this section. Specifically, OPEI is requesting that the last sentence in the paragraph be struck since it is potentially confusing with regulatory language in Section 2754 (see ~~strikeout~~ below). In addition OPEI urges ARB to state that it will apply the same criteria and procedures to pressurized canister systems that it will apply to innovative products under Section 2767. Therefore, OPEI suggests adding the language shown in underline below.

"For evaporative emission control systems that only use a carbon canister and do not pressurize the fuel tank, the carbon canister must have a working capacity of at least 1.4 grams of vapor storage capacity per liter of nominal fuel tank volume for tanks greater than or equal to 3.78 liters, and 1.0 grams of vapor storage capacity per liter of nominal fuel tank volume for tanks less than 3.78 liters. For evaporative emission control systems that use a carbon canister and pressurized fuel tank, the working capacity can be specified by the applicant. To determine their overall compliance with the diurnal standards in Section 2754, the Executive Order will apply the same criteria and procedures to these pressurized canister systems that it will apply to innovative products under Section 2767. ~~For all systems utilizing actively purged carbon canisters, running loss emissions must be controlled from being emitted into the atmosphere.~~" (OPEI)

Agency Response: See agency response to Comments 275 and 296.

298. Comment: OPEI appreciates that ARB made some of its requested changes to the language in the para 1 of TP-902 Section 6.1. However, it omitted one additional requested change shown below (strikeout). Perhaps this was an oversight omission. OPEI requests that ARB make this additional change. It will streamline the language and avoid confusion in interpretation.

"The purpose of the preconditioning period is to introduce gasoline into the fuel system and precondition all fuel system components. Precondition the tank and other fuel delivery system components by filling the tank to its nominal capacity with fresh test fuel as specified in Section 7 of these procedures. After filling the tank start the engine and allow it to run at rated speed (unloaded or blade load) for approximately five minutes. Soak the tank and other components at 30° C ± 10°C. ~~for not less than 140 days.~~ Data documenting that the tank has reached equilibrium must be provided for tanks soaked less than 140 days. The period of slosh testing may be considered part of the preconditioning period provided each tank and all fuel system components tested remain filled with fuel and are never empty for more than one hour over the entire preconditioning period." (OPEI)

Comment: EMA supports the additional language added to clarify that tanks reaching equilibrium in less than 140 days are acceptable provided that data demonstrating equilibrium is provided. However, the new language conflicts with existing language that requires tanks to be soaked "for not less than 140 days" and does not identify under what conditions less than 140 days are appropriate. (EMA)

Agency Response: See agency response to Comment 295.

299. Comment: TP-902 Attachment 1 Section 6.1 – The working capacity is better defined later in TP-902 Section 7. This definition does not belong in the section regarding the number of test cycles. Delete last sentence of Section 6.1 for clarity. Modify as follows: "Working capacity is determined through cyclic loading and purging of a carbon canister. Ten or more cycles may be required to stabilize new carbon. A minimum of three cycles is adequate if carbon has had a previous history of stabilization with butane or gasoline vapors. ~~The "working capacity" value is the average of the butane mass supplied to the canister for the last two repeatable cycles.~~" (Briggs)

Agency Response: Staff incorporated existing language per OPEI's and EMA's suggestion. See agency response to Comment 251. Furthermore, this comment is not directed toward a proposed modification.

300. Comment: TP-901 General OPEI continues to be concerned that there is poor data support for the tank permeation standard proposed in the regulations per the test method in TP-901. In addition, for test purposes, EPA requires a constant temperature profile of 28° C during the duration of the test. In order to harmonize with the federal regulations, and avoid inconsistent testing requirements, OPEI requests that ARB adopt the same 28° C temperature profile in lieu of ARB's proposed 40° C temperature profile. OPEI is not suggesting that ARB should change the current specified ARB test fuels.

Agency Response: See agency response to Comments 140 and 271.

301. Comment: TP 901 11.5 and 15. OPEI is disappointed that ARB did not consider its comments on these two sections – namely, to reduce the number of consecutive days from 10 to 4 so as to reduce testing requirements over weekends. OPEI requests that testing should be at least for 4 days or until 95% r-square value is met but no greater than 10 days. In the alternative, OPEI requests that ARB allow this reduced testing, based on data generated and submitted to ARB by manufacturers as part of the certification process.

Agency Response: See agency response to Comment 246.