OUTDOOR POWER EQUIPMENT INSTITUTE

November 17 2016

California EPA, Air Resources Board
1001 "I" Street
Sacrament, CA 95814

RE: California Environmental Protection Agency Air Resources Board's "Proposed Amendments to the Evaporative Emission Requirements for Small Off-Road Engines"

The Outdoor Power Equipment Institute ("OPEI") respectfully submits these comments to the California Environmental Protection Agency Air Resources Board's ("ARB") "Proposed Amendments to the Evaporative Emission Requirements for Small Off-Road Engines" ("the proposed amendments").

OPEI is an international trade association representing more than 100 manufacturers and their suppliers of small spark-ignited engines and outdoor power equipment. OPEI members products are ubiquitous in California households, including products such as lawnmowers, garden tractors, utility vehicles, grass trimmers, brush cutters, lawn edgers, chain saws, snow throwers, tillers, leaf blowers and other lawn and garden implements. As manufacturers of small off-road engines ("SORE") and SORE powered equipment, OPEI members will be directly affected by the proposed amendments. In addition, to the extent that concerns are not included here-in, OPEI strongly supports the comments provided by the Truck and Engine Manufacturers Association ("EMA").

Based on the concerns detailed below, OPEI requests the Air Resources Board postpone a decision on the SORE evaporative emissions amendments proposed rule until (1) an updated Economic Impact Analysis/Assessment can be completed, (2) a new validation study can be commissioned and (3) new validation study results can be properly analyzed versus the SORE evaporative emissions model to properly determine if SORE equipment is meeting California's air quality goals.

OVERVIEW

In September 2003 ARB adopted evaporative emission regulations for small off-road engines ("SORE"). The final 2003 rule resulted in dual certification strategies, performance-based and design-based for the >80cc category, based on Industry feedback related to the cost and the practical implications of a performance-based only approach.

SORE equipment business is a significant contributor to California's economy. SORE equipment is offered in hundreds of retail locations throughout the state, and relied upon

by thousands of professional landscapers on a daily basis. The design-based certification strategy has been key for SORE equipment manufacturers to be able to continue to offer product in California, and in-turn supporting the statewide economy, while working to achieve California's air quality goals with the introduction of new equipment with the latest SORE emissions control technologies.

In 2015, 84 manufacturers, certifying more than 600 >80cc evaporative families relied on design-based certification, due largely to the non-integrated nature of their products and the cost associated with diurnal emissions testing versus relatively low California production volumes for equipment in this category. Contrary to ARB staff's belief that "most certifications (will) be conducted by engine manufacturers" and "engine manufacturers will most likely supply engines with complete fuel systems to equipment manufacturers for most equipment, thereby saving them testing costs"[1], only 20 manufacturers certified any product to the performance-based standard. In other words, more than 75 percent of manufacturers rely exclusively on design-based certification. Additionally, approximately 87 percent of the evaporative families certified rely design-based certification due to the highly non-integrated nature of the >80cc SORE category. For these reasons, retaining separate design-based certification and compliance options are critical for this >80cc, non-WBM equipment category to continue to be directly offered in the California market.

The proposed amendments look to eliminate the stand-alone design-based certification and compliance option, offering the design-based strategy only as part of the performance-based certification and compliance option. Additionally, the proposed amendments look to allow ARB to make compliance determinations based solely on performance-based certification limits and procedures, and on as few as one test unit. The proposal, to assure a design-based piece of equipment will unequivocally meet performance limits is a major change, with strategy reconsiderations, and significant cost implications.

Of most concern, the proposed amendments punish responsible manufacturers that have demonstrated a long history of SORE emissions compliance, rather than targeting non-compliant manufacturers.

OPEI is additionally concerned that the underlying data driving the amendments, specifically the Validation Study test results, is highly unreliable, with high standard deviation, due to test procedure inconsistencies and unrepeatable results throughout the study. In addition, while the Validation Study is based largely one specific product category, portable generators, that reflects only a small portion of the overall SORE population and emissions inventory, the results of the Study are used Broadly. ARB's determination ignores the results of the most recent, and statistically more accurate collection of test results to date, the E10 study. There is no reliable data to support ARBs suggestion that "over half of all SORE sold in California do not meet the diurnal

[1] ARB August 8, 2003 "Staff Report. Initial Statement of Reason for Proposed Rulemaking"

emission standards and that changes are needed to increase compliance with those standards"[2].

OPEI is concerned with the introduction of new requirements without sufficient cost analysis assessment. Additional evaporative controls for the <80cc category have been introduced despite strong evidence that this category is compliant with today's permeation requirements. Similarly, new requirements for the >80cc category have been introduced without sufficient, or in several cases any emissions inventory impact analysis.

Finally, OPEI is greatly concerned with the timing of the rulemaking. In addition to the proposed amendments, ARB is concurrently working on a 2018 rulemaking package that looks to further reduce SORE evaporative emissions and reduce SORE exhaust emissions. Today's proposed amendments, scheduled to be implemented in 2020, will create an overlap in new regulations, and may impede the ability to meet the 2020 requirements and fully engage in the 2018 rulemaking activities. Industry is currently working on a multi-year plan to shift exhaust emissions certification fuel to E10 by 2020. The certification fuel change demands significant R&D, certification and compliance resources to recertify engine families, creating significant hardships in meeting the 2020 proposed amendments, and participating in the 2018 rulemaking activities.

In an attempt to resolve many of these concerns, OPEI and EMA met with ARB, including participation in working groups and workshops, on approximately 10 occasions since September 2015. Following the first publication of the draft amendments in May 2016, OPEI and EMA promptly provided an alternative proposal, focusing largely on solutions to address the quality issues Industry believes to be responsible for non-disputed non-compliant products, while aligning certification limits with EPA regulations, as opposed to ARB staff's proposal to eliminate separate performance and design-based certification strategies. Much to Industry's dismay, with its September 2016 proposed amendments, ARB staff simply cherry-picked industry's proposal, resulting in additional unsupported costs and burdens.

Despite the concerns above, OPEI and EMA continued to be engaged with ARB staff to develop solutions to potential concerns of noncompliance. On October 28, OPEI and EMA provided a detailed list of comments, highlighting the major concerns above, as well as a host of esoteric concerns with the proposed amendments. Unfortunately ARB staff and Industry were unable to come to agreement on several key points. The list of unresolved issues is included as Annex A.

VALIDATION STUDY CONCERNS

To adequately satisfy the requirement to determine that SORE certification and compliance strategies are meeting the overall emission reduction goals, reliable data must be analyzed versus the SORE evaporative emissions model. Unfortunately, the validation study data is neither reliable, nor representative of the population or emissions inventory distribution, and alone cannot be used to determine overall

[2] ARB September 2016 "Staff Report: Initial Statement of Reasons"

emissions impact. As a result, ARB must commission a new Validation Study in order to determine if California's air quality goals are being met, or if any changes to the Regulation Order, Test and Certification Procedures are needed.

OPEI has identified several major concerns with the Validation Study that undermine the ability to make a broad based compliance determination. Easily missed test-to-test variations, such as the application of auxiliary fans during testing and how equipment was handled negatively influenced test results and produced widely variable data with high standard deviations. The sample population was largely unreflective of California's SORE population or evaporative emissions inventory distribution. These issues are further detailed in Annex B.

Due to the issues outlined above, the Validation Study data cannot be relied on as evidence of systemic issues with SORE compliance. Nor does it support ARB staff's conclusions that (1) "the validation studies indicate that, more often than not, design-certified evaporative families do not comply with the diurnal emission standards", (2) that "the compliance rate of SORE with diurnal emission standards has been low since 2008 and has not improved significantly", (3) "changes to the certification and compliance testing procedures need to be made to ensure all engines with displacement greater than 80 cc comply with the diurnal emission standards and allow ARB to take enforcement action when necessary", or (4) that the "disparity between applicant-submitted certification data and ARB's data" is an indication that SORE sold to consumers do not consistently have the same diurnal emission as units tested for certification[2]. For these reasons the Executive Officer cannot reasonably rely on results of the Validation Study to conclude the design-based certification is not working to meet California's overall air quality goals.

COST CONCERNS

The Staff Report's Economic Impact Analysis/Assessment ("EIAA") fails to account for several costs associated with the proposed rule. Specifically, the record does not appropriately support the diurnal test costs related to removing the stand-alone design-based certification strategy and the compliance testing amendments which allow ARB to determine compliance on all >80cc category units through diurnal testing, based as few as one test result from one unit.

In 2003 ARB "staff proposed that ARB post production testing for compliance be based on performance, i.e. compliance with a specified emission limit". In addition, staff noted "Industry did not embrace the approach, indicating any potential in-use liability measured against an emission limit would force them to perform pre-production certification emission testing, negating the benefits of the design-based approach"[1]. This concern holds true today. Nevertheless, the proposed amendments look to change today's compliance strategy to allow ARB to determine compliance on all >80cc category units through diurnal testing.

Based on OPEI analysis of the 2015 California evaporative family certifications, 64 of 84 >80cc category manufacturers do not certify any equipment to the performance-based

standard. As a result, these manufacturers will need to implement cost-heavy strategies to assure compliance with the proposed certification and compliance changes. As previously noted, in 2003 Industry estimated the cost for an individual manufacturer to build and operate a SHED for seven years is estimated at 3.5 million dollars. Staff deemed the absolute cost and resulting cost-effectiveness reasonable[1]. Therefore, if every manufacturer opted to invest in a SHED industry cost would be 224 million dollars over 7 years. Alternatively, in its September 2016 Staff Report, ARB estimated that eliminating the design-based certification and compliance strategy would require ten additional SHEDs at test labs, and would cost industry $67,375,200 over five years. In order to meet its regulatory requirements, ARB must analyze these costs across the less than 19% of the SORE population that the proposed changes would impact.

The attached legal analysis prepared by William M. Guerry, Chair of the Environmental Section at Kelley Drye and Counsel to OPEI discusses legal challenges associated with the proposed amendments. In particular, the analysis concludes that changes in the compliance strategy based on ARB's proposed enforcement test procedures would make the existing certification-standards dramatically more stringent and therefore would trigger all the procedural requirements that apply to Agency-Rulemaking relative to each particular modification. Counsel concludes that ARB has illegally failed to provide in its record ANY cost or benefit estimates on the dramatic expansion of its regulations through the diurnal compliance mandate—in violation of the APA requirements. The complete analysis has been included in Annex C.

Additionally, the EIAA failed to provide a cost analysis for several revisions included in the certification section. Namely, the EIAA does not account for design changes and testing associated with the inclusion of the provision that carbon canisters must be installed in a way that prevents exposing the carbon to water or liquid fuel, and with the inclusion of fuel line assembly tensile testing.

CONCLUSION

Industry has been committed to working with ARB throughout this process, meeting with staff on more than 10 occasions since last September. We appreciate staffs efforts and commitment to working with industry to find common ground. However in absence of a complete cost analysis, and in new light of the Validation Study, several challenges remain with the proposed amendments and more time is needed for ARB and industry collaboration to resolve issues.

As a result of the concerns outlined above, OPEI requests the Air Resources Board postpone a decision on the SORE evaporative emissions amendments proposed rule until (1) an updated Economic Impact Analysis/Assessment can be completed, (2) a new validation study can be commissioned and (3) new validation study results can be properly analyzed versus the SORE evaporative emissions model to properly determine if SORE equipment is meeting California's air quality goals.

The Validation Study was included as part of the 2003 rulemaking to confirm that the performance-based evaporative certification and design-based certification option are achieving ARB's overall emission reduction goals. Unfortunately, the Validation Study was plagued with well disguised issues, resulting in widely variable and inconsistent test results, and was highly unrepresentative of the actual population and inventory distribution.

In 2015, 84 manufacturers, certifying more than 600 >80cc evaporative families relied on design-based certification, due largely to the non-integrated nature of their products and the cost associated with diurnal emissions testing. Contrary to ARB's belief, most of these manufacturers do not have SHED's, and do not concurrently certify units to the performance-based option. As a result, many manufacturers will incur significant new costs with no proven benefit if the proposed certification and compliance strategy changes are approved. However, the proposed amendments fails to recognize the cost associated with the compliance strategy change, and therefore the Agency fails to satisfy it's legal requirements to access the impact of all related costs.

In addition to these concerns, OPEI and EMA have provided a detailed list of comments and concerns with the proposed Regulation Order, Test Procedures and Certification procedures. The list of unresolved issues is included as Annex A.

In its Staff Report, ARB staff notes "some of the equipment had emissions well below the diurnal emission standards, demonstrating that both performance and design certification can work well if proper quality controls are in place"[2]. OPEI also believes this to be true. In fact, in light of recent Validation Study findings, and the E10 study results, OPEI believes most SORE equipment is working as needed to achieve ARB's overall air quality goal, regardless of certification strategy. While OPEI disagrees with ARB's conclusion about the effectiveness of SORE evaporative emissions systems, certification strategies and compliance strategies, we are committed to working with ARB staff moving forward to commission a new Validation Study and to address any outstanding concerns.

Please feel free to contact me directly if you have any questions regarding these comments.

Kind regards,

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ANNEX A
UNRESOLVED ISSUES WITH THE REGULATORY ORDER, TEST AND CERTIFICATION PROCEDURES

OPEI/EMA Requested Changes to CARB's 2016 Evaporative Regulatory Order, TP-901/2 and CP-901/2 Language Proposals			
Created October 13, 2016 (revised 10/27/16)			
CARB Document	**CARB Language (proposed)**	**OPEI/EMA Proposed Language Changes**	**Comment / Reason**
§2752 Definitions	(1) "Coextruded Multilayer Fuel Tank" means a multi-layered high-density polyethylene fuel tank with a continuous nylon or ethylene vinyl alcohol layer(s) present within the walls of the tank.	**Delete definition**	2766 (a) deletes exemption for these tanks so definition not needed. In contrast, CARB deleted SI tanks and small volume tanks. Should be consistent with deletions either way.
§2752 Definitions	**(New #): Cold Weather Equipment**	**Option 1—delete HH fuel line requirement in regulation.** **OR** **Option 2—add Cold Weather (CW) equipment definition (below) and regulate accordingly.** From EPA 1054.801: **Cold-weather equipment is limited to the following types of handheld equipment: chainsaws~~, cut-off saws, clearing saws, brush cutters with engines at or above 40cc, commercial earth and wood drills, and ice augers. This includes earth augers if they are also marketed as ice augers~~**	CARB proposed language has created unique CA only product. EPA regulates only fuel feed lines and EPA regulates CW lines differently on HH equipment (due to safety concerns). Industry understands it is not CARB's intention to create a more severe standard in this "clean up". From page xi of soreisor: *"Aligning ARB SORE certification and test procedures with U.S. EPA procedure, where possible, eliminates duplicative requirements and gives manufacturers the option to certify fuel tanks based on a common set of data acceptable to both ARB and U.S. EPA."* ARB validation study results indicate HH product already compliant with comparable "diurnal" limits without lines.

§2752 Definitions	(5) "Equivalent Fuel Line" means a fuel line that permeates less than the nominal fuel line being replaced and less than or equal to 15 grams of TOG per square meter of surface area in contact with fuel per day when tested per SAE J1737 (Stabilized May 2013) at 40ºC or higher, and ambient pressure using LEV III certification gasoline. The fuel defined in 40 CFR Part 1065.710(b) or CE10 may be used as an alternative test fuel.	**See comment**	OK as written if CARB includes definition for fuel lines as indicated below and if CARB intends SAE 1737 to be used only to determine an equivalent fuel line.
§2752 Definitions	**(New #): Fuel line**	**Fuel line means hose or tubing designed to contain liquid fuel (including molded hose or tubing). This does not include any of the following:** **(1) Fuel tank vent lines.** **(2) Segments of hose or tubing whose external surface is normally exposed to liquid fuel inside the fuel tank.** **(3) Hose or tubing designed to return unused fuel from the carburetor to the fuel tank for handheld engines.** **(4) Primer bulbs that contain liquid fuel only for priming the engine before starting.** **To measure permeation, use SAE J30, J1527 or for fuel lines with a nominal inner diameter below 5.0 mm, you may alternatively measure fuel line permeation emissions using the equipment and procedures for weight-loss testing specified in SAE J2996. Determine your final emission result based on the average of measured values over the 14-day sampling period. Maintain an ambient temperature of 23±2 °C throughout the sampling period.**	CARB and EPA test methods differ. CARB not harmonized with EPA if different test method used. Means double cert testing. Adopt EPA 1060.515 (d) language. If CARB includes all lines in permeation regulation, it creates unique CA only product. EPA does not regulate vent or return lines on HH equipment. Additionally, *CARB* provides no evidence to support that vapor lines contribute significant evaporative emissions. Industry understands it is not CARB's intention to create a more severe standard in this "clean up". From page xi of soreisor: *"Aligning ARB SORE certification and test procedures with U.S. EPA procedure, where possible, eliminates duplicative requirements and gives manufacturers the option to certify fuel tanks based on a common set of data acceptable to both ARB and U.S. EPA."*

§2752 Definitions	(~~9~~8) "Evaporative Family" means small off-road engine models in the same engine class that are grouped together based on similar fuel system characteristics as they relate to evaporative emissions. For engines with displacement less than or equal to 80 cubic centimeters (cc), all models using fuel tanks constructed by the same process with the same material and the same permeation control may be grouped into one evaporative family. The engine family and the evaporative family may be considered equivalent at the manufacturer's discretion.	(~~9~~8) "Evaporative Family" means small off-road engine **or equipment** models in the same engine class that are grouped together based on similar fuel system characteristics as they relate to evaporative emissions. For engines with displacement less than or equal to 80 cubic centimeters (cc), all models using fuel tanks **and fuel supply** lines constructed by the same process with the same material and the same permeation control may be grouped into one evaporative family. The engine family and the evaporative family may be considered equivalent at the manufacturer's discretion.	For less than or equal to 80cc must have same line and tank to use same exhaust and evap family name. Info must be provided in application for certification. Tank family and line family must still be certified separately. Definition of "Evaporative Family" is related to small off-road engines whereas the evaporative regulation is designated as "Off-Road Equipment." EPA defined evaporative family (40 CFR Part 1060.230)(a)) as: For purposes of certification, divide your product line into families of equipment (or components) that are expected to have similar emission characteristics throughout their useful life.
§2752 Definitions	(24) "Total Organic Gases (TOG)" means compounds of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate.	DELETE. Keep (23) ROG definition	CARB has not reported TOG analysis in any testing performed on engines or equipment related to this rulemaking
§2753(b) Certification Requirements & Procedures	"…to the diurnal emission standards in section 2754 or 2757 of this Article must include a determination of the engine or equipment models in the evaporative family that are expected to exhibit the highest and lowest diurnal emission rates relative to the applicable diurnal emission standards and detail the criteria used to make that determination."	DELETE. Keep 2753(b) and 2754(a)-(c) same as current, with separate "diurnal" and "design based" certification strategies.	Design based is a critical certification option for non-integrated equipment manufacturers. In 2015, almost 100 equipment manufacturers relied on design based certification for more than 600 >80cc engine/equipment evaporative families (approx. 87% of >80cc families). The need for, and recognition that a design based certification and compliance strategy can

			be effective for non-integrated manufacturers has been confirmed by ARB through its adoption of design based certification and compliance strategies in the 2016 published and effective SI Marine Watercraft rule. Furthermore, Industry believes design based strategy will be an effective certification strategy with the inclusion of industries June 2016 test and design provisions. ARB staff's adoption of industries proposal in September 2016, without any confirmation testing, and despite additional cost and burden on industry, implies that these provisions will result in the significant improvements needed to assure compliance for both the diurnal and design based strategies. Finally, the validation study results provide no evidence that diurnal-based" certification is more effective than "design-based certification.
§2753(b) Certification Requirements & Procedures	"…to the diurnal emission standards in section 2754 or 2757 of this Article must include a determination of the engine or equipment models in the evaporative family that are expected to exhibit the highest and lowest diurnal emission rates relative to the applicable diurnal emission standards and detail the criteria used to make that determination."	"…to the diurnal emission standards in section 2754 or 2757 of this Article must include a determination of the engine or equipment models in the evaporative family that are expected to exhibit the highest ~~and lowest~~ diurnal emission rates relative to the applicable diurnal emission standards and detail the criteria used to make that determination."	Notwithstanding the above comments to this new language, inclusion of lowest adds significant burden with no benefit
§2753(b) Certification Requirements & Procedures		Diurnal emission test – include the rationale for the highest determination Component emission test results: (a) highest fuel tank permeation rate expected (g/day); (b) highest fuel line	Recommend ARB add an example of the criteria expected to be provided for each option

		permeation rate expected (g/day); and (c) other components not specifically identified EO Numbers – include: (a) highest fuel tank permeation rate expected (g/day); (b) highest fuel line permeation rate expected (g/day); and (c) other components not specifically identified	
§2753(g) Certification Requirements & Procedures	A Holder whose Executive Order has been suspended or revoked must submit diurnal emission test results, determined using TP-902, for all evaporative families using engines with displacement greater than 80 cc, as described in (b) of this section, according to the following schedule:,,,	A Holder whose Executive Order has been ~~suspended or~~ revoked must submit diurnal emission test results, determined using TP-902, for ~~all~~ evaporative families using engines with displacement greater than 80 cc, as described in (b) of this section, according to the following schedule: **CONSIDER ALTERNATIVE PENALITY/ENFORCEMENT OPTIONS**	Requiring diurnal emission test results for certification for any EO holder that has any evaporative family suspended is premature and too broad. EO holders may have several evaporative families that are not related to a family with a suspended EO. In addition an EO may be suspended and not determined to be in noncompliance or revoked imposing an unjust burden on the Holder. Additionally, requiring that every family be performance tested is overly burdensome. With the time required for durability testing, the high demand for SHED testing time, and multiple families to test, it may be impossible to complete this testing in 1 year. Finally, the escalation for repeat offenses is not a deterrent. After the first offense, and completion of initial diurnal testing, the data would simply be carried over. Also, none of this is a deterrent for Holders that have performance-certified all of their families, and hence unfairly punishes those that choose to design-certify.
§2754(a)	..on and after the model years indicated.	Recommend ARB add 2020 model year implementation	Given that all model years

Diurnal Emissions & Design Standards		dates for all Table 1 categories	included in the table the proposed changes are being imposed without lead-time required to implement any changes required including revised requirements specified in sections (b), (c), (d), and (e).
§2754(c) Diurnal Emissions & Design Standards	An applicant certifying engines or equipment to comply with the diurnal emission standards under this section shall also do one of the following:	ADD **(3) Provide EO numbers, including fuel tank, fuel line, fuel cap and carbon canister**	ARB provides two options identified as (1) and (2) but does not align with the requirements specified in §2753(b) that includes a third option.
2754.1 (5) Diurnal Emissions & Design Standards	A ~~manufacturer~~Holder shall certify each model within an evaporative ~~families~~family to an EMEL and shall determine an Evaporative Family Emission Limit Differential (EFELD) for each model in an evaporative family.（EFELD is to be set for each model）... The EFELD is determined based on the diurnal test results, in accordance with TP-902,of the worst case model of engine or equipment within an evaporative family. The worst case model of engine or equipment is defined as the engine or equipment expected to produce the highest negative or the smallest positive EFELD within the family on a per unit basis. (Deletion of conditions for the worst case)		TP902 test does not need to be conducted on all models for evaluation. Evaluation by the worst case should be accepted if it has logic. There will be no meaning to group models in families if the worst case is not accepted. Furthermore, conducting TP902 test on each model for all models is expected to require enormous burden.

§2755 Permeation Emissions~~s~~ Standards

On or after the model year set out herein, fuel tanks used on equip must not exceed the following permeation rates:

Permeation Emission Standards (gms per meter^2 per day)

Effective Date Model Year	Applicability	Requirement[1] ~~Tank Permeation~~
2007	Small off-road engines with displacements ~~<~~≤ 80 cc	Fuel tank permeation emissions shall not exceed 2.0 grams per square meter of internal surface area per day as determined by TP-901.
2020	Small off-road engines with displacements ≤ 80 cc	Fuel lines shall meet the requirements of section 2754(b)(2)

[1] Permeation rate must be measured to two significant digits.

(a) Data documenting the permeation rate of fuel tanks and fuel lines must be included in a certification application.

(b) The test procedure for determining compliance with the fuel tank permeation emission standard is TP-901, which is incorporated by reference herein. The test procedure used to determine compliance with the fuel line permeation emission standard is SAE J1737 (Stabilized May 2013).

On or after the model year set out herein, fuel tanks used on equip must not exceed the following permeation rates:

Permeation Emission Standards (gms per meter^2 per day)

Effective Date Model Year	Applicability	Requirement[1] ~~Tank Permeation~~
2007	Small off-road engines with displacements ≤ 80 cc	Fuel tank permeation emissions shall not exceed 2.0 grams per square meter of internal surface area per day as determined by TP-901 **adopted July 26, 2004**.
2018	Small off-road engines with displacements ≤ 80 cc	Fuel lines shall be certified to EPA 1060.102(d)(2) or (3) as applicable.
2022	Small off-road engines with displacements ≤ 80 cc	Fuel lines shall not exceed 15 grams per square meter of internal surface area per day (**225 g/m^2/day for CW lines)** as determined by paragraph (a) and (c) below. Fuel tanks shall not exceed 2.0 grams per square meter of internal surface area per day as determined by paragraph (a) and (b) below.

[1] Permeation rate must be measured to two significant digits.

(a) Data documenting the permeation rate of fuel tanks and fuel lines must be included in a certification application.
(b) The test procedure for determining compliance with the fuel tank permeation emission standard isTP-901, which is incorporated by reference herein.
(c) The test procedure used to determine compliance with the fuel line permeation emission standard is SAE J30, J1527 or SAE J2996. Determine your final emission result based on the average of measured values over the 14-day sampling period. Maintain an ambient temperature of 23±2 °C throughout the sampling period

CARB procedures for fuel line testing differs from EPA.

CARB does not have separate std for CW fuel lines. EPA test fuel for CW lines and other lines is different.

Changes to TP-901 (include fuel cap, test temp and fuel) all raise permeation levels. OPEI has shown data to CARB indicating some existing tanks do not pass the 2.0 gram requirement. The 2020 time frame is not sufficient for manufacturers to complete testing, redesign and certify new tanks. OPEI HHPC proposal is an interim step effective in 2018 which adds fuel lines and then the CARB proposal in 2022. Cert in 2018 would include a statement of compliance for each family by the manufacturer that states the EPA information.

OPEI understands it is not CARB's intention to create a more severe standard in this "clean up".

Note: Section 2753(a) (dates) will require adjustments accordingly (not included with these comments).

§2756 Fuel Cap Performance Standard		ADD **(c) Fuel cap shall meet the 300 cycle on/off durability requirement outlined in TP-901** ADD **Requirement (c) to Table for MY 2020** ADD **Starting with the 2020 model year, if you measure a fuel tank's permeation emissions with a nonpermeable covering in place of the fuel cap under TP-901, you must separately measure permeation emissions from a fuel cap. You may show that your fuel tank and fuel cap meet emission standards by certifying them separately or by combining the separate measurements into a single emission rate based on the relative surface areas of the fuel tank and fuel cap. Measure the fuel cap's permeation emissions as described in TP-901.** ADD **Requirement that fuel caps are included to Table for MY 2020**	Fuel Cap Performance Standard does not include the change included in proposed revisions to TP-901 associated with fuel tank cap installation and removal. It is unclear if the change is intended to apply to engines or equipment tested per TP-902. Additionally, starting with model year 2020, when fuel caps are required to be certified, the RO should provide a provision to certify and obtain an EO for the fuel cap separately, aligned with EPA 1060.521. Note, additional procedures for testing caps cap separately have been outlined below for TP-901. Separate cap certification procedures need consideration (not included w/ these comments).
§2758 Test Procedures	(b) Testing to determine compliance with section 2755 of this Article shall be performed using TP-901, ~~adopted July 26, 2004,~~ which is incorporated by reference herein.	(b) Testing to determine compliance with section 2755 of this Article shall be performed using TP-901, ~~adopted July 26, 2004,~~ which is incorporated by reference herein and **SAE J30, J1527 or SAE J2996 as applicable.**	Current language missing how to test fuel lines.
§2759 Equipment and	(a) Purpose. The Air Resources Board recognizes that certain emissions-critical and/or emissions-related parts must be properly labeled in order to identify equipment that meets applicable evaporative emission standards.	Add a new paragraph “2759 (c)(5)” using modified language from EPA 1060.137(b)(5)ii)	Need provision that integrated engine/equipment need not include both exhaust and evap families

Component Labeling	These specifications require Holders to affix a certification label (or labels) on each production equipment unit (or engine, as applicable). (b) Applicability. These specifications apply to: (1) Engines, equipment, fuel lines, fuel tanks, and carbon canisters that have been certified to the applicable evaporative emission standards in this Article. (2) Equipment manufacturers who use an engine certified under this Article if their equipment obscures the emissions control label of such certified engine. (c) Complete Evaporative Emission Control System Certification Label Content and Location. (1) A certification label must be welded, riveted or otherwise permanently attached by the Holder to an area on the engine or equipment unit in such a way that it will be readily visible. (2) In selecting an acceptable location, the possibility of accidental damage must be considered (e.g. possibility of tools or sharp instruments coming in contact with the label). Each certification label must be affixed in such a manner that it cannot be removed without destroying or defacing the label, and must not be affixed to any engine (or equipment, as applicable) component that is easily detached from the engine or equipment as applicable. (3) The certification label information must be written in the English language and use block letters and numerals (i.e., sans serif, upper-case characters) that must be of a color that contrasts with the background of the label.	**(c)(5) Equipment manufacturers that also certify their engines with respect to exhaust emissions may use the same emission family name for both exhaust and evaporative emissions. If you use the provisions of this paragraph (c)(5) you must identify all the certified fuel-system components and the associated component codes in your engine's application for certification. In this case the label specified in this paragraph (5) may omit the information related to specific fuel-system components.**	due to size constraints. This was discussed with ARB staff on the August 12 conference call.

§2759 Equipment and Component Labeling (continued)	(4) The ~~engine or equipment~~certification label must contain the following information: (D) The date (month & year) & location (state or country) of ~~engine manufacture (month and year) for~~ evaporative emission control system~~s certified by the engine manufacturer or the date of equipment~~ manufacture ~~(month and year) for evap emission control systems certified by the equipment manufacturerer~~. d) Evaporative Emission Control Component Certification Label Content and Location. (1) Fuel lines, fuel tanks & carbon canisters certified to the evaporative emission standards in this Article shall be clearly labeled or marked by a permanent identification showing the Holder's name, the EO number, and model or part number in such a way that it will be readily visible when installed on an engine or equipment unit. (2) The label information shall be written in the English language and use block letters and numerals (i.e., sans serif, upper-case characters) that are raised or contrast with the background of the label or component. (3) The Holder's three-character manufacturer code assigned by U.S. EPA may be used in place of the Holder's name if the manufacturer code is declared in the certification application. If only one model or part number is certified under the applicable EO, the model or part number may be omitted from the label information.	(D) The date (month & year) ~~& location (state or country)~~ of ~~engine manufacture (month and year) for~~ evaporative emission control system~~s certified by the engine manufacturer or the date of equipment~~ manufacture ~~(month and year) for evap emission control systems certified by the equipment manufacturerer~~. **Use 1060.137 (slightly modified) as an alternate in a new paragraph (d)(4)** **(4) Except as specified in paragraph (d) of this section, you may create the label specified in paragraph with the EO approval (b) of this section as follows:** **(1) Include your corporate name.** **(2) Include EPA's standardized designation for the family.** **(3) State: "EPA COMPLIANT".** **(4) Fuel tank labels must identify the FEL, if applicable.** **(5) Fuel line labels must identify the applicable perm level. This may involve any of the following:** **(i) Identify the applicable numerical emission standard (such as 15 g/m^2/day).** **(ii) Identify the applicable emission standards using EPA classifications (such as EPA NRFL).** **(iii) Identify the applicable industry standard specification (such as SAE J30 R12).** **(6) Fuel line labels must be continuous, with no more than 12 inches before repeating. Labels will be continuous if the space between repeating segments is no longer than that of the repeated information.** **(e) You may create an abbreviated label for your components. Such a label may rely on codes to identify the component. The code must at a minimum identify the cert status, your corporate name, and the emission family. For example, XYZ Manufacturing may label its fuel lines as "EPA-XYZ-A15" to designate that their "A15" family was certified to meet EPA's 15 g/m^2/day standard. If you do this, you must describe the abbreviated label in your application for certification and identify all the associated information specified in paragraph (c) of this section**	Requirement for location (state or country) of manufacture in 2759 (c)(4)(D) would require CA only label if language not revised as proposed. **(4) Optionally, you may meet the requirements of 1060.137, including deviations such as abbreviations.** EPA does not require EO number. This creates non-harmonization issues w/ EPA. Need option / alternatively to use EPA 1060.137? Include "these requirements also do not apply for… in 1060.135"?

§2759(d) Equipment and Component Labeling	Fuel lines, fuel tanks, and carbon canisters certified to the evaporative emission standards in this Article shall be clearly labeled or marked by a permanent identification showing the Holder's name, the Executive Order number, and model or part number in such a way that it will be readily visible when installed on an engine or equipment unit.	"You may optionally put the required information on the engine emissions label (in the case of covered parts, limited space, etc…)"	The fuel line may be short, may be protected from heat, may be installed in such a way that the info is not always facing out. Need abbreviated provision per above (if family name and EO are required, then this is still an issue).
§2760 Defects Warranty Requirements for Small Off-Road Engines	A list of all evaporative emission warranty parts must be included with each new engine or equipment subject to this Article. The evaporative emission warranty parts list shall include all parts whose failure would increase evaporative emissions, and may contain, but is not limited to, the following parts: (1) Fuel Tank* (2) Fuel Cap (3) Fuel Lines (for liquid fuel and fuel vapors) (4) Fuel Line Fittings (5) Clamps** (6) Pressure Relief Valves** (7) Control Valves** (8) Control Solenoids** (9) Electronic Controls** (10) Vacuum Control Diaphragms** (11) Control Cables** (12) Control Linkages** (13) Purge Valves (14) ~~Vapor Hoses~~ Gaskets (15) Liquid/Vapor Separator (16) Carbon Canister (17) Canister Mounting Brackets (18) Carburetor Purge Port Connector ~~*Note: The parts list for equipment ≤80 cc only includes the fuel tank.~~ **Note: As they relate to the evap emission control system.	A list of all evaporative emission warranty parts must be included with each new engine or equipment subject to this Article. The evaporative emission warranty parts list shall include all parts whose failure would increase evaporative emissions, and may contain, but is not limited to, the following parts: (1) Fuel Tank* (2) Fuel Cap (3) Fuel Lines (for liquid fuel and fuel vapors***) (4) Fuel Line Fittings (5) Clamps** (6) Pressure Relief Valves** (7) Control Valves** (8) Control Solenoids** (9) Electronic Controls** (10) Vacuum Control Diaphragms** (11) Control Cables** (12) Control Linkages** (13) Purge Valves*** (14) ~~Vapor Hoses~~ Gaskets** (15) Liquid/Vapor Separator (16) Carbon Canister (17) Canister Mounting Brackets (18) Carburetor Purge Port Connector ~~*Note: The parts list for equipment ≤80 cc only includes the fuel tank.~~ **Note: As they relate to the evap emission control system. ***Note: For equipment using engines with engines ≤80 cc, fuel lines mean only the fuel feed lines and does not include return lines, vent lines or purge bulbs.	Suggest to say "(for liquid fuel and fuel vapors (as applicable)" or add a new row "Fuel feed lines (HH)". Item (1) Fuel Tank includes an "*" but the related "*" footnote is deleted. Recommend that CARB undelete the "*" footnote related to fuel tanks Item (13) Purge Valves should also include the "**" footnote as all purge valves are not related to evaporative emission control systems. Item (14) Gaskets is added but should also include the "**" footnote as all gaskets are not related to evaporative emission control systems.

§2761 Emission-Related Defect and Sales Reporting Requirements (continued)	(f) End-of-Year and Final Sales Reports. (1) A Holder shall submit end-of-year and final sales reports for all of the Holder's evaporative families. End-of-year and final sales reports must indicate the actual sales volume for each evaporative family. (2) Actual sales are sales calculated at the end of a model year on that model year's production, rather than estimates of production. The calculation of actual sales for end-of-year and final sales reports must be based on the location of the point of first retail sale (for example, retail customer or dealer) also called the final product purchase location. Upon Executive Officer approval, a Holder may calculate its eligible sales through market analysis. An educated and consistent estimate with the best available documentation will be acceptable as the final report of sales in California. (3) (A) End-of-year sales reports must be submitted within 90 days of the end of the model year to The Chief, Emissions Compliance, Automotive Regulations and Science Division, Air Resources Board, 9528 Telstar, El Monte, CA 91731. (B) Unless otherwise approved by the EO, final sales reports must be submitted within 270 days of the end of the model year to the Chief, Emissions Compliance, Automotive Regulations and Science Division, Air Resources Board, 9528 Telstar, El Monte, CA 91731. (4) Failure by a Holder to submit any end-of-year or final sales reports in the specified time for any evaporative family subject to this Article is a violation of this section for each engine or equipment in the evaporative family covered by the report. (5) Errors discovered by ARB or the Holder in the end-of-year sales report, may be corrected in the final report. (6) Reports submitted to meet the requirements of section 2754.1 of this Article may be used to meet the requirements of this section. (7) A report submitted to ARB to meet the requirements of section 1054.250 of the "California Exhaust Emission Standards and Test Procedures for New 2013 and Later Small Off-Road Engines; Engine-Testing Procedures (Part 1054)," adopted October 25, 2012, for an engine family may be used to meet the requirements of this section for an evaporative family which is equivalent to the engine family.	**Delete this section**	No purpose. Evap family alone cannot be used to estimate any values or inventory.

§2761(f)(1) Emission-Related Defect and Sales Reporting Requirements	A Holder shall submit end-of-year and final sales reports for all of the Holder's evaporative families. End-of-year and final sales reports must indicate the actual sales volume for each evaporative family.	**An engine or equipment EO holder** shall submit end-of-year and final sales reports for all of the Holder's evaporative families. End-of-year and final sales reports must indicate the actual sales volume for each evaporative family. **A component EO holder is not required to submit end-of-year & final sales reports.**	The requirement should be clarified as applicable only to engines or equipment and not components that have received an EO.
§2765(a)&(b) New Equipment Compliance Testing		**CONSIDER ALTERNATIVE OPTIONS**	Compliance component testing is commonly accepted for other categories, by ARB and other agencies. And with the additional provision that ARB my opt out of durability and preconditioning, testing components for the >80cc category to TP-901 will be no more burdensome than testing complete units to TP-902. Additionally, TP-901 currently requires multiple (5) units are tested for certification, yet ARB proposes to make a compliance determination based off one test and one unit. ARB also proposes to make a determination on an entire family based on the results of one model. This is inconsistent with the exhaust standards, and is unfair and unprecedented. Finally, the proposal to determine compliance for all (>80cc) units, based solely on the diurnal emission test results is a significant change in the current regulation, with significant cost impact to manufacturers, and with no substantive justification or validation in the ISoR. The ISoR fails to consider the cost impact related to the proposed change in

			certification and compliance strategy. See additional comments to 2753(b) above RE the need for a stand-alone design based strategy and industry's suggested potential improvements to both diurnal and design based strategies (since incorporated into the September 2016 RO proposal.)
§2765(c)(4) New Equipment Compliance Testing	The Executive Officer may revoke an Executive Order of Certification for an evaporative family, fuel line, carbon canister, or fuel tank after the Executive Order of Certification has been suspended pursuant to subsection (1), ~~or~~ (2), or (3)of this section if the proposed remedy for the nonconformity, as reported by the Holder to the Executive Officer, is one requiring a design change or changes to the evaporative emission control system, fuel line, carbon canister, or fuel tank as described in the application for certification of the affected evaporative family, fuel line, carbon canister, or fuel tank ~~or subgroup~~.	COMMENT: Once the Executive Order for a fuel line, carbon canister, or fuel tank have been revoked CARB must notify all engine or equipment manufacturers that have utilized the revoked EO as part of their demonstration of compliance per §2753(b). The notification of the EO being revoked must include any constraints associated with on-going production of engines or equipment that utilize the previously certified component. The constraints placed on on-going production must include lead time associated with identification of a certified alternative component, submission of running changes to certification documents, and time to obtain newly required components. In addition, any engines or equipment produced and either sold, or in the distribution system prior to the notification of the component EO being revoked are assumed to be compliant unless an "Ordered Recall" is implemented per §2763.	
TP-901 §2 Principal & Summary of Test Procedure	This test procedure uses the corrected daily mass change or total organic gas (TOG) emissions measured by a flame ionization detector (FID) of five identical fuel tanks to calculate the permeation rate of each fuel tank. Prior to permeation testing of the fuel tanks, durability testing is and preconditioning are performed. Durability testing exposes the fuel tanks to pressure and vacuum extremes, ultraviolet radiation, fuel sloshing, and fuel cap installation cycles. After durability testing, the fuel tanks are filled with fuel and allowed to precondition to maximize the permeation emissions.	This test procedure uses the corrected **cumulative** mass change or total organic gas (TOG) emissions measured by a flame ionization detector (FID) of **three** identical fuel tanks **and/or fuel caps** to calculate the permeation rate of each fuel tank **and/or fuel cap**. Prior to permeation testing of the fuel tanks, durability testing, **where applicable**, and preconditioning are performed. Durability testing, **where applicable**, exposes the fuel tanks to pressure and vacuum extremes, ultraviolet radiation, fuel sloshing, and fuel cap installation cycles. After durability testing, the fuel tanks are filled with fuel and allowed to precondition to **stabilize** the permeation emissions. ... **You may show that your fuel tank and fuel cap meet emission standards by certifying them separately or**	The current provision provides no option for a fuel cap and fuel tank to be certified separately. Fuel caps and tanks may be manufactured by different suppliers, and may result in a variety of combinations for equipment manufacturers. Tank and cap suppliers must have a path to individually certify tanks and caps to retain the current model and limit the amount of data and certifications required.

		by combining the separate measurements into a single emission rate based on the relative surface areas of the fuel tank and fuel cap. If you measure a fuel tank's permeation emissions with a nonpermeable covering in place of the fuel cap, you must separately measure permeation emissions from a fuel cap. Measure the fuel cap's permeation emissions as described in section 11 of this test procedure.	
TP-901 §3 Biases & Interference	Relative humidity greater than 20% can bias the permeation results for certain plastics such as nylon. To identify bias due to humidity, relative humidity must be recorded daily.	DELETE	There are no provisions or guidelines for tank suppliers or ARB to estimate or offset results based on RH, therefore the data serves no purpose. Delete.
TP-901 §3 Biases & Interference	To ensure the losses attributed to permeation are accurately quantified during this test procedure, the tanks must remain exposed to the constant 40 °C temperature for each 24-hours (± 30 minutes) period.	To ensure the losses attributed to permeation are accurately quantified during this test procedure, the tanks must remain exposed to the constant 40 °C **+/- 2 °C** temperature for each 24-hours (± 30 minutes) period.	No tolerance provided for temperature control
TP-901 §5(f) Equipment	A relative humidity measuring instrument capable of measuring the relative humidity (RH) accurately to within ± 2 percent RH.	DELETE	There are no provisions or guidelines for tank suppliers or ARB to estimate or offset results based on RH, therefore the data serves no purpose.
TP-901 §6 Fuel	Testing according to this procedure shall be conducted using 1) LEV III Certification Gasoline as defined in part II, section A.100.3.1.2 of the *California 2015 and Subsequent Model Criteria Pollutant Exhaust Emission Standards and Test Procedures and 2017 and Subsequent Model Greenhouse Gas Exhaust Emission Standards and Test Procedures for Passenger Cars, Light Duty Trucks, and Medium-Duty Vehicles*, as last amended September 2, 2015, or 2) the fuel defined in 40 CFR Part 1065.710(b).	Testing according to this procedure shall be conducted using 1) LEV III Certification Gasoline as defined in part II, section A.100.3.1.2 of the *California 2015 and Subsequent Model Criteria Pollutant Exhaust Emission Standards and Test Procedures and 2017 and Subsequent Model Greenhouse Gas Exhaust Emission Standards and Test Procedures for Passenger Cars, Light Duty Trucks, and Medium-Duty Vehicles*, as last amended September 2, 2015, or 2) the fuel defined in 40 CFR Part 1065.710(b), **low level gasoline ethanol blend for general testing.**	EPA 1065.710(b) Table 1 includes a variety of test fuel specifications “general testing”, “low-temperature testing” and “high altitude testing”. “General testing” should be specified.
TP-901 §6 Fuel	The fuel specified in part II, section A.100.3.1.1 of the *California 2015 and Subsequent Model Criteria Pollutant Exhaust Emission Standards and Test Procedures and 2017 and Subsequent Model Greenhouse Gas Exhaust Emission Standards and Test Procedures for Passenger Cars, Light Duty Trucks, and Medium-Duty*	**…and through model year 2021 for less than or equal to 80cc fuel tanks**	It is impractical to certify a tank and cap in 2022 and recertify in 2020 with just fuel change.

	Vehicles, as last amended September 2, 2015, may be used as an alternative test fuel to certify fuel tanks for use on engines and equipment through model year 2019.		
TP-901 §7 Calibration Procedure	The balance listed in section 5(b) shall be calibrated annually by an independent organization using National Institute of Standards and Technology (NIST)-traceable mass standards. The accuracy of the balance shall be checked using NIST-traceable mass standards prior to and following mass measurements (25 fuel tanks maximum). At minimum, the accuracy shall be checked at approximately 80% percent, 100%percent, and 120% percent of the fuel tanks' expected test mass. If the measured mass of any of the NIST-traceable mass standards drifts more than ± 0.1 gram for a balance with 0.1 gram sensitivity, ± 0.02 grams for a balance with 0.01 gram sensitivity, or ± 0.002 grams for a balance with 0.001 gram sensitivity between initial and final measurements, the balance shall be re-calibrated or a different balance that is within specification shall be used. The NIST-traceable mass standards shall be calibrated annually by an independent organization. The instrumentation for measuring permeation emissions according to section 12 of this test procedure must be calibrated as specified in section 4 of TP-902.	The balance listed in section 5(b) shall be calibrated **per the requirements of 40 CFR Part 1065.307 within 370 days of an measurement**. The accuracy of the balance shall be checked using NIST-traceable mass standards ~~**prior to and following mass measurements (25 fuel tanks maximum). At minimum, the accuracy shall be checked at approximately 80% percent, 100%percent, and 120% percent of the fuel tanks' expected test mass. If the measured mass of any of the NIST-traceable mass standards drifts more than ± 0.1 gram for a balance with 0.1 gram sensitivity, ± 0.02 grams for a balance with 0.01 gram sensitivity, or ± 0.002 grams for a balance with 0.001 gram sensitivity between initial and final measurements, the balance shall be re-calibrated or a different balance that is within specification shall be used.**~~ The NIST-traceable mass standards shall be calibrated **within 370 days of usage** ~~**annually**~~ by an independent organization. The instrumentation for measuring permeation emissions according to section 12 of this test procedure must be calibrated as specified in section 4 of TP-902.	No precedent for having to send equipment to independent organizations. OPEI is unaware of any calibration issues identified by ARB.
TP-901 §8 Durability Demonstration	A durability demonstration is required prior to any permeation testing. These durability tests are designed to ensure that the fuel tank assembly meets the permeation emission standard throughout the useful life of the equipment. A durability demonstration consists of the following tests:	A durability demonstration is required prior to any permeation testing, **if your emission control technology involves surface treatment or other post processing treatments such as epoxy coating. Metal tanks that are not either fully welded or brazed together also require durability testing.** These durability tests are designed to ensure that the fuel tank assembly meets the permeation emission standard throughout the useful life of the equipment. A durability demonstration consists of the following tests:	ARB deleted "fuel tanks with a secondary operation for drilling holes for insertion of fuel line and grommet systems may have these eliminated for purposes of durability and permeation testing".
TP-901 §8 Sealing Demonstration		ADD New Section 8 – SEALING PROCEDURE (Renumber all sections thereafter, staring with 9 Durability Demonstration) **Unless otherwise noted in the procedure, seal all openings in each fuel tank as they would be sealed when installed on a production engine for all**	Sealing provision have changed. These should be included upfront, as they impact all testing from section 8 forward (currently only included in 8.2, Slosh Testing)

		durability, preconditioning and permeation tests prescribed hereafter. A plug, cap, or coupon may be used to seal any fuel hose connection openings. Optionally, fuel hose connection openings need not be machined.	If fuel hose openings are machined, then plugged, capped or sealed with a coupon, it becomes a test of the laboratory's ability to seal the opening.
TP-901 §8.2 Durability Demonstration – Slosh Test	A slosh test shall be performed by filling each fuel tank to 50 percent of its nominal capacity with the fuel specified in section 6 of this procedure and rocking it from an angle deviation of + 15° to −15° from level at a rate of 15 cycles per minute for a total of one million total cycles. Seal all openings in each fuel tank as they would be sealed when installed on a production engine during slosh testing. A plug, cap, or coupon may be used to seal any openings to which a hose or tube is normally attached.	A slosh test shall be performed by filling each fuel tank to 50 percent of its nominal capacity with the fuel specified in section 6 of this procedure and rocking it from an angle deviation of + 15° to −15° from level at a rate of 15 cycles per minute for a total of one million total cycles. **As an alternative, slosh testing may be performed using a laboratory sample orbital shaker table, or similar device to the subject the tank to a centripetal acceleration of at least 2.4 m/2^2 at a frequency of 2 +/- 0.25 cycles per second for one million cycles.** ~~Seal all openings in each fuel tank as they would be sealed when installed on a production engine during slosh testing. A plug, cap, or coupon may be used to seal any openings to which a hose or tube is normally attached.~~	ARB deleted orbital shaker table option, 2.4m/s^2 @ 2 cycle/sec. This option greatly reduces the test time required (from 42 to 7 days). Include as option. This is the only location "sealing" is addressed. This should be included above, and reflect the requirements of section 8, 9, 10, 11 and 12.
TP-901 Section 11 Fuel Cap Testing	Nothing	**If you measure a fuel tank's permeation emissions with a nonpermeable covering in place of the fuel cap under this section, you must separately measure permeation emissions from a fuel cap. You may show that your fuel tank and fuel cap meet emission standards by certifying them separately or by combining the separate measurements into a single emission rate based on the relative surface areas of the fuel tank and fuel cap. Measure the fuel cap's permeation emissions as follows:** **(a) Select a fuel cap expected to have permeation emissions at least as high as the highest-emitting fuel cap that you expect to be used with fuel tanks from the emission family. Include a gasket that represents production models. If the fuel cap includes vent paths, seal these vents as follows:** **(1) If the vent path is through grooves in the gasket, you may use another gasket with no vent grooves if it is otherwise the same as a production gasket.** **(2) If the vent path is through the cap, seal any vents for testing.**	Additional procedures for testing caps cap separately. Separate cap certification procedures need consideration (not included w/ these comments).

		(b) Attach the fuel cap to a fuel tank with a capacity of at least one liter made of metal or some other impermeable material. **(c) Use the procedures specified in this section TP-901 to measure permeation emissions except you do not need to perform the durability testing on the fuel cap test fixture. Calculate emission rates using the smallest inside cross sectional area of the opening on which the cap is mounted as the fuel cap's surface area.**	
TP-902 §1 Applicability	This Test Procedure, TP-902, is used by the Air Resources Board to determine the diurnal and resting loss evaporative emissions from small off-road engines with gross power production less than or equal to 19 kilowatts. Small off-road engines are defined in Ttitle 13, California Code of Regulations (CCR), section 2401 et seq.	This Test Procedure, TP-902, is used by the Air Resources Board to determine the diurnal and resting loss evaporative emissions from small off-road engines ~~with gross power production less than or equal to 19 kilowatts~~. Small off-road engines are defined in Ttitle 13, California Code of Regulations (CCR), section 2401 et seq.	Small off-road engine is already defined in Section 2401, so all that is necessary here is "small off-road engines." ARB determines the 19kW power limit (from SORE to LSI) based on the NET power in the certified configuration, not the GROSS power production. TP-902 is also be referenced by LSI. Delete SORE all together or add LSI reference.
TP-902 §5.2 Test Procedure	Following the preconditioning period, drain the fuel tank and refill to 50 percent of its nominal capacity with test fuel. ~~For evaporative emission control systems that use a carbon canister, the canister must be purged following the preconditioning period but prior to initiating the hot soak test. Purging consists of drawing 400 bed volumes of nitrogen or dry air through the canister at the canister manufacturer's recommended purge rate~~….	Following the preconditioning period, drain the fuel tank and refill to 50 percent of its nominal capacity with test fuel. **For evaporative emission control systems that use a carbon canister, the canister must be purged following the preconditioning period but prior to initiating the hot soak test. Purging consists of drawing 400 bed volumes of nitrogen or dry air through the canister at the canister manufacturer's recommended purge rate**	There is no evidence to support the assumption that a canister will be purged in 15 minutes.
TP-901 TP-902 Alternative Test Procedures	Alternative Test Procedures must be shared for the good of both industry and ARB. If an ATP is approved, then anyone should be able to use it. This maintains a level playing field for the industry. If the ATP is not shared, then many applicants may unknowingly submit the exact same, or nearly same, ATP. Then ARB would need to review and approve or deny the same ATP many times over. This is a waste of ARB resources. Not sharing ATPs is a departure from ARB's standard operation, and no compelling reason is presented.		
CP-901 §5 Certification	For each evaporative family, the applicant must select and test five samples of an equipment fuel tank to show compliance with the permeation emissions standard.	For each evaporative family, the applicant must select and test **three** samples of an equipment fuel tank to show compliance with the permeation emissions standard.	

CP-901 §5 Certification	Discussion point: The fuel tank selected must use the same method of permeation control and be constructed of the same material as specified in the certification application.		Need confirmation. What does this mean if it is the same material from a different supplier?
CP-901 §5.3 Certification	Fuel lines shall be tested according to SAE J1737 (Stabilized May 2013) and the results submitted to ARB as part of the certification application.	Fuel lines shall be tested according to SAE J30**, SAE J1737 (Stabilized May 2013), SAE J1527 or SAE J2996** and the results submitted to ARB as part of the certification application.	Need to harmonize with EPA
CP-901 §5.3 Certification	If, after review of the application for certification including all test data submitted by the applicant and any other pertinent data or information the Executive Officer determines is necessary, the Executive Officer determines that the application has satisfied the 3 conditions set forth in this procedures, the Executive Officer may approve the application and issue an Executive Order.	If, after review of the application for certification including all test data submitted by the applicant and any other pertinent data or information the Executive Officer determines is necessary, the Executive Officer determines that the application has satisfied the 3 conditions set forth in this procedures, the Executive Officer **shall** approve the application and issue an Executive Order.	If everything is provided, there should be no reason for the EO not to approve.
CP-901 §5.4 Data Carryover	… Permeation emissions data for one evaporative family may not be used to certify another evaporative family…		Subject to addressing labelling concerns. Need to harmonize a label for exhaust and evap.
CP-901 §6.11 Submission of an engine or equipment unit	Upon the request of the Executive Officer, an applicant shall submit for inspection or testing an engine or equipment unit from an evaporative family with the certification application.	COMMENT: What is ARB's expectation to comply with this in the event an engine or piece of equipment is not yet in production? Other than the actual tank used for certification this could be impossible based on production timing. Applications are submitted several months ahead of production and it is common for parts produced with production tooling to not be available until immediately before the start of production. CARB insists we keep the engines used to generate the emission data. Does CARB expect the same for fuel tanks? In the case where a fuel tank is sealed with a fusion welded coupon it would be difficult to perform any retesting of that tank.	
CP-901 §7 Application Format Instructions	Proof the applicant has met the bond requirements of title 13, Cal. Code Regs., section 2774 All results from all tests performed on the units tested for certification, including test results from invalid tests or from any other tests, whether or not they were conducted according to TP-901 or SAE J1737 (Stabilized May 2013). The Executive Officer may require an applicant to send other	All results from all tests performed on the units tested for certification, including test results from invalid tests ~~**or from any other tests, whether or not they were conducted according to TP-901 or SAE J1737 (Stabilized May 2013).**~~ The Executive Officer may require an applicant to send other information to confirm that testing	Should ARB adopt a bonding worksheet, similar to EPA? Requirement "or from any other tests" is too vague. If additional tests or data is required, test procedures and pass/fail criteria should be specified in the RO or TP. Providing "other tests" without specific guidance or criteria opens the door for

	information to confirm that testing according to TP-901 or SAE J1737 (Stabilized May 2013) was valid. Fuel tank description for each fuel tank in the evaporative family o Model number o Total capacity (L) o Nominal capacity (L) o Internal surface area (m^2) o Tank materials, including pigments, plasticizers, UV inhibitors, or other additives that are expected to affect control of emissions o Gasket material o Production method o Permeation barrier o Engineering drawings o Executive Order number, if applicable Description of each fuel line model in the evaporative family o Model number o Internal diameter (mm) o Length (mm) o Materials and methods used to construct the line o Permeation barrier o Engineering drawings o Executive Order number, if applicable	according to TP-901, SAE J1737 (Stabilized May 2013), **SAE J30, SAE J1527 or SAE J2996** was valid. Fuel tank description for each fuel tank in the evaporative family o Model number o Total capacity (L) o Nominal capacity (L) o Internal surface area (m^2) o Executive Order number, if applicable **If certification is not based on a fuel tank component Executive Order number, the additional information shall be provided:** o Tank materials, including pigments, plasticizers, UV inhibitors, or other additives that are expected to affect control of emissions o Gasket material o Production method o Permeation barrier ~~o Engineering drawings~~ Description of each fuel line model in the evaporative family o Model number o Internal diameter (mm) o Length (mm) o Executive Order number, if applicable **If certification is not based on a fuel line component Executive Order number, the additional information shall be provided:** o Materials and methods used to construct the line o Permeation barrier ~~o Engineering drawings~~	subjective interpretation of the impact of test results b ARB Certification Staff. If EO is provided, not all information should be required. Reorganize requirements. Engineering drawings may be requested at any point. However to require to include with certification would require a running change for any drawing changes, regardless of if it impacts emissions or not. This will create unnecessary work for manufacturers and ARB Certification staff. If EO is provided, not all information should be required. Reorganize requirements. Inclusion of lowest adds significant burden with no benefit

	Description of criteria (e.g., seam length, barrier and wall thickness, ratio of internal surface area to volume, presence of high-permeation materials, presence of accessories) used to determine which fuel tanks in the evaporative family exhibit the highest and lowest permeation emission rates relative to the applicable permeation emission standards Description of evaporative emission control system, including a diagram	Description of criteria (e.g., seam length, barrier and wall thickness, ratio of internal surface area to volume, presence of high-permeation materials, presence of accessories) used to determine which fuel tanks in the evaporative family exhibit the highest ~~and lowest~~ permeation emission rates relative to the applicable permeation emission standards ~~Description of~~ A diagram of evaporative emission control system~~, including a diagram~~	"Description of evaporative emission control system" in addition to the information already provided is not clear, and may be subjective. ARB should define "evaporative emission control system", and should provide an example of a typical SORE "description" in the accompanying FAQ or include a specific list such as was provided for fuel tanks and fuel lines to eliminate any subjectivity if this requirement remains.
CP-902 §6 Application Format Instruction		**See Comments to TP-902 §7 above. Delete "other tests". Description of fuel cap and carbon canister to follow same format as fuel tank and fuel line for information required when an EO is provided.**	Requirement "or from any other tests" is too vague. If additional tests or data is required, test procedures and pass/fail criteria should be specified in the RO or TP. Providing "other tests" without specific guidance or criteria opens the door for subjective interpretation of the impact of test results b ARB Certification Staff.

ANNEX B
VALIDATION STUDY CONCRENS & THE E10 STUDY

TEST PROCEDURE VARIATION & TEST DATA RELIABILITY

As agreed to during the 2003 rulemaking, a Validation Study was conducted "to confirm that the performance-based evaporative certification option and design-based evaporative certification option are achieving ARB's overall emission reduction goals"[3]. As a result of the Validation Study, ARB staff reported that "fifty five percent of the design-certified units and 60 percent of the performance-certified units failed to meet the applicable diurnal emissions standards in at least one of three diurnal emissions tests". However, ARB staff failed to acknowledge several examples of test-to-test variations that negatively influenced test results undermining the ability to make a broad based determination.

ARB's 2010 testing was the first a series of tests included in the Validation Study. These first tests focused on 2008-2010 production units. In total 30 units were tested, 20 by ARB and 10 by third-party laboratories chosen by the manufacturers of selected products. Of the 20 units tested by ARB, 16 (80%) of the units exceeded the imposed-upon diurnal limits, while only while only 2 (20%) of the third-party tested units exceeded the imposed-upon diurnal limits. Although ARB provides no explanation for the differences in the 2016 Staff Report, OPEI believes ARB test procedure differences and test-to-test variation resulted in higher evaporative emissions, and in-turn a higher failure rate, for units tested by ARB versus units tested by third-party labs.

Throughout the 2010 testing ARB included an auxiliary fan in the SHED, generating a constant air-flow of approximately 6 mph across test equipment. While the need for additional air-flow in automotive testing is common to assure a homogenous sample mixture in large SHED's, the need for, and the impact of additional air-flow for SORE testing was unclear. Unfortunately, the inclusion of the auxiliary fan produced widely variable test results, depending on the position of the fan relative to test units.

2010 test unit 5(8P3) was reported to have resulted in evaporative emissions of 3.190, 5.290 and 15.070, versus the units 1.25 g/day 24-hour diurnal performance standard. Upon learning the validation study results, and the use of the auxiliary fan to test unit 5(8P3), the manufacturer sent the test unit to a third-party laboratory for additional testing. Working with the laboratory, the manufacturer was able to confirm that fan position highly influenced evaporative emissions results, approximately duplicating the 15.070 g/day test results with the fan blowing on the unit, but also duplicating certification limit values with the unit elevated to allow airflow under the unit. The manufacturer determined when the carburetor vent was exposed to the constant air velocity, a venturi effect drew fuel and fuel vapors from the carburetor, resulting in large test-to-test standard deviation and artificially high evaporative emissions depending on

[3] ARB Chapter 15 "Additional Off-Road Vehicles and Engines Pollution Control Requirements", Article 1 "Evaporative Emissions Requirements for Off-Road Equipment", Section 2754.2 "Validation Study"

the auxiliary fan position, similar to the validation study results. These results were further confirmed later that year when the same model was selected for a five-piece compliance audit. After discussing the concern and the impact of the fan on test results with ARB El Monte test staff, the compliance audit test was conducted without the auxiliary fan. In this test configuration, ARB determined the family was compliant with the evaporative emissions regulations. Although ARB staff was aware of industry's concern, no mention of the potential impact of the auxiliary fan was made for stakeholder consideration in 2016 Staff Report. Based on high test results and large standard deviations for tests conducted by ARB, OPEI remains concerned that the use of the fan during the 2010 testing artificially and negatively influenced several units.

Additionally in 2010, in at least one case, test equipment was preconditioned at ARB facilities in Sacramento then transported by truck more than 400 miles to test facilities in El Monte. Despite unorthodox test procedures, and the inclusion of the aforementioned auxiliary fan, unit 4(8P2) just marginally exceeded its diurnal limits in all 3 tests. Similar to the case above, this unit was subsequently selected for a five-piece compliance audit in 2010. Again, contrary to the validation study test results, ARB found the unit to be in compliance after all durability and compliance testing was conducted at the El Monte laboratory, with average test results approximately 50% less than the average validation study test result. Although ARB staff was aware of industry's concern, no mention of preconditioning procedure variability was made for stakeholder consideration in the 2016 Staff Report. OPEI remains concerned that test procedures were not precisely followed during the 2010 testing and artificially and negatively influenced several units.

The 2015 study was the second validation study conducted by ARB. The study focused on 2013-2015 production units. In total 29 units were tested, 21 by ARB and 8 by third-party laboratories chosen by the manufacturers of selected products. In discussing the 2015 test results, ARB staff advised industry of gas leaks on a small number of "gross emitters" (units exhibiting evaporative emissions more than 1.5 times calculated diurnal-performance emissions limits). However, while in a few cases leaks from these "gross emitters" would have led to excessive evaporative emissions, it was not always evident if leaks were quality issues, or related ARB test procedures.

ARB's final study, the E10 study, highlighted one additional test variability concern. In order to control diurnal and resting emissions, most SORE rely on carbon canisters to capture vapor loss. However, if the carbon canister is exposed to liquid, its ability to function as designed is greatly compromised. Unexpectedly, while handling unit E10-18 ARB staff allowed the carbon canister to be saturated, resulting in test results above the diurnal-performance limits. To understand the impact of saturating the canister, ARB staff dried the canister and retested the unit, taking the necessary precautions so as not to saturate the canister a second time. The result was an (at least) 80% reduction in the evaporative emissions[4]. OPEI believes it is highly likely that carbon canisters were

[4] Note, the maximum E10 study test result was 1.8 g/m^2/day. The Staff report notes that after baking the canister the unit resulted in evaporative emissions below the 1.0 g/m^2/day standard. The actual reduction is unknown because ARB did not provide the final test result, but it is assumed to be at least an 80% reduction based on these values.

inadvertently allowed to be saturated with liquid fuel in the previous Validation Study. At least two 2015 validation study "gross emitters" were observed to have fuel saturating or dripping from carbon canister vent lines, and OPEI believes several more units may have had carbon canisters compromised by inadvertent mis-handling of units throughout the validation study. See Figure 1 below. Unfortunately there is no evidence that ARB understood the impact of saturating the canister until Industry presented its June 2016 proposal which included language about carbon canister installation guidance. At that point only a portion of the E10 test units remained to be tested, all Validation Study testing was completed and there was no opportunity to investigate the issue as it may have applied to the Validation Study. OPEI remains concerned that unit handling artificially and negatively influenced several units throughout the validation study.

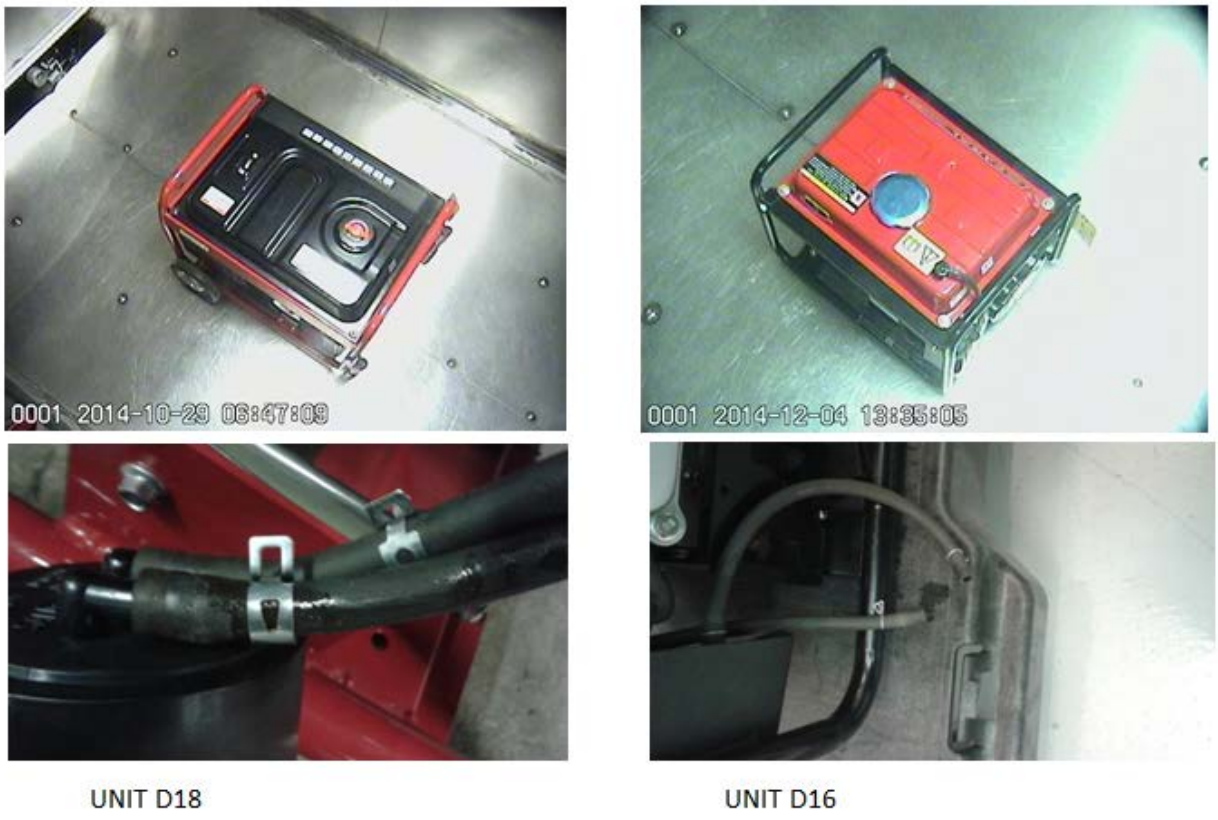

Figure 1 – Liquid gasoline observed on or dripping from tank-to-canister purge lines for 2015 Validation Study units 15 (13D16) and 16 (13D18)

EVALUATION OF DATA TO DETERMINE IF STRATEGIES ARE ACHIEVING ARB's OVERALL EMISSION REDUCTION GOALS

As outlined in the in the regulation, "the Executive Officer will evaluate the data collected and, based on reasonable criteria, make a determination whether the performance-based option and design-based option are achieving ARB's overall emission reduction goals" and "in making this determination, the Executive Officer will

consider, among other things, whether a particular product tested is in full compliance with the underlying standards and whether the product configurations are non-representative"[3]. These expectations and requirements are clear in the regulation, and must not be confused with ARB staff claims that the goal of the validation study is "to determine whether design-certified and performance-certified equipment met the (regulation) diurnal emission standard"[2].

To adequately satisfy the requirement to determine that both strategies are meeting the overall emission reduction goals, reliable data must be used to adjust the entire, overall SORE evaporative emissions model, based on product type and population and compare to California's overall air quality goal. Unfortunately, the validation study data is neither reliable, nor representative of the population or emissions inventory distribution, and alone cannot be used to determine overall emissions impact. Therefore, based on the information provided in the Staff Report, the Executive Officer cannot reasonably determine that either strategy has been ineffective in helping achieve ARB's overall emission reduction goals. As a result, ARB should commission a new Validation Study in order to determine if California's air quality goals are being met, or if any changes to the Regulation Order, Test and Certification Procedures are needed.

Aside from being deeply troubled by the application of unreliable Validation Study test results to determine if SORE are meeting evaporative emission goals, and if particular certification strategies are effective, OPEI found the validation study data set to highly unrepresentative of the population or inventory distributions. Despite highly unrepeatable Validation Study data, with widely varying standard deviations, ARB staff concluded that "fifty-five percent of the design-certified units and 60 percent of the performance ("diurnal")-certified units failed to meet the applicable diurnal emission standards", and that "these results suggest that over half of all SORE sold in California do not meet the diurnal emission standards"[2]. Unfortunately, the large percentage of units tested, including a majority of units that exceeded the imposed-upon diurnal-performance limits throughout the Validation Study represent only a small portion of the SORE population or emissions inventory. As shown in Figure 2, "Lawn and Garden" represents 87 percent of ARB's estimated statewide SORE population, and 80 percent of ARB's estimated statewide SORE evaporative emissions. In contrast, "other" equipment represents just 4 percent of ARB's estimated statewide SORE population, and 13 percent of ARB's estimated statewide SORE evaporative emissions. Despite representing just 4 percent of ARB's population and inventory estimates, "other" units including generators, pressure washers and utility vehicles represented 38 of 59, or 64% of the units tested in the Validation Study.

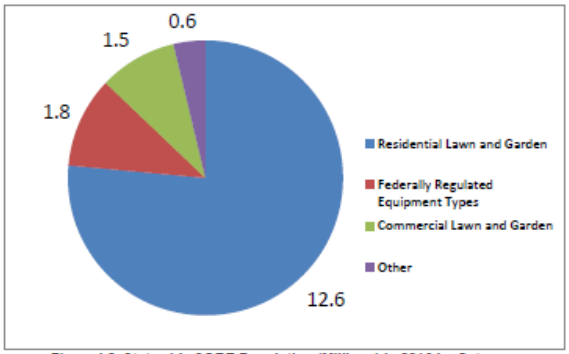

Figure I-2. Statewide SORE Population (Millions) in 2016 by Category

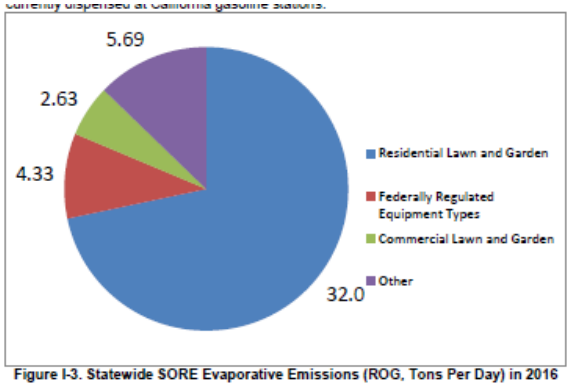

Figure I-3. Statewide SORE Evaporative Emissions (ROG, Tons Per Day) in 2016

Figure 2 – ARB statewide population and evaporative emission estimates by category

In addition to the unrepresentative test unit selection in the Validation Study, ARB's E10 study found 100 percent compliance of <80cc units tested. OPEI analysis of ARB's "Off-Road 2007" model suggests that this category alone represents approximately half of California's 2016 SORE population. Furthermore, the E10 study found 100 percent compliance of the nine new WBM class units. OPEI analysis of ARB's "Off-Road 2007" model suggests that this category alone represents approximately 32 percent of California's 2016 population. In total, 14 never before tested <80cc and WBM class units, representing at least 81 percent of the "Off-Road 2007" model population demonstrated compliance. Due to these findings, and with consideration of the Validation Study's widely variable, unrepeatable, unrepresentative data set, the ARB staff cannot reasonably determine that "over half of all SORE sold in California do not meet the diurnal emission standards".

Due to the issues outlined above, the Validation Study data cannot be relied on as evidence of systemic issues with SORE compliance. Nor does it support ARB staff's conclusions that (1) "the validation studies indicate that, more often than not, design-certified evaporative families do not comply with the diurnal emission standards", (2) that "the compliance rate of SORE with diurnal emission standards has been low since 2008 and has not improved significantly", (3) "changes to the certification and compliance testing procedures need to be made to ensure all engines with displacement greater than 80 cc comply with the diurnal emission standards and allow ARB to take enforcement action when necessary", or (4) that the "disparity between applicant-submitted certification data and ARB's data" is an indication that SORE sold to consumers do not consistently have the same diurnal emission as units tested for certification[2]. For these reasons the Executive Officer cannot reasonably rely on results of the Validation Study to conclude the design-based certification is not working to meet California's overall air quality goals.

E10 STUDY REVIEW

ARB recently followed its Validation Study with the E10 Study to evaluate the impact of changing certification fuel to E10. The test included 17 >80cc units and 5 <80cc units.

While some of the units selected for the E10 test were previously used in, and passed the Validation Study, 14 of the units were previously untested models. Unlike the Validation Study, the units selected were also generally reflective of the population and inventory distribution, with the highest population units for the >80cc category, performance tested WBM's representing 58 percent of the >80cc test sample size. Additionally more reflective of the true population and inventory distribution, riding lawn and garden equipment represented 23 percent of the test sample size while "others", including generators, represented 18 percent of the test sample size.

This most recent, and OPEI believes the most consistent and reliable of all ARB tests, indicate a high level of conformity when compared to imposed-upon diurnal certification limits, regardless of certification strategy, and despite a test fuel with higher evaporative emissions characteristics than the fuel used in the Validation Study. While the 2013 Validation Study resulted in 100 percent failure of WBM performance-based units, the 9 previously untested performance-based units all passed the E10 test. In total 13 of 17 (76%) >80cc units tested below the imposed-upon diurnal limits. Of the units exceeding the imposed-upon diurnal limits, two units marginally exceeded the imposed-upon diurnal limits as a result of the increased evaporative characteristics of the E10 certification fuel. In fact, both units tested below the certified-to or imposed-upon diurnal limits in the 2013 Validation Study. The third unit that exceeded its performance-certified limit was unit E10-18, discussed above, in which the carbon canister was inadvertently saturated prior to being placed in the SHED. As discussed, when this unit was retested with a dry canister it resulted in test results lower below its certified diurnal limits.

Additionally, as noted above, 100 percent of <80cc units tested in the E10 study tested below the imposed-upon diurnal limits. In total, the E10 test resulted in 18 of 22 (81%) units, including 14 new units, testing below the certified-to or imposed-upon diurnal limits, without accounting for the impact of the higher evaporative emitting test fuel or test procedure concerns. OPEI believes that significant procedural improvements, and an increased knowledge and understanding of SORE products and their evaporative systems gained through the Validation Study significantly contributed to the E10 study being the most successful and reliable conducted by ARB yet. Comparison of the standard deviation for units tested in both the Validation Study and E10 study strongly support this conclusion. In six of the seven units tested in both the Validation Study and E10 study the standard deviation improved. In several cases the standard deviation showed more than 80 percent improvement from the final Validation Study to the E10 study. See Table 1.

Unit (VS/E10)	Validation Study Standard Deviation	E10 Study Standard Deviation	Improvement
21(14P1)/E10-29	0.096	0.017	82%
1(13D8)/E10-1	0.151	0.028	81%
8(13D19)/E10-11	0.236	0.028	88%
7(13D12)/E10-25	0.067	0.035	48%
4(13D10)/E10-2	0.043	0.171	INCREASED 4x
24(14D5)/E10-12	0.202	0.066	67%
6(13D7)/13D-17	0.084	0.055	35%

Table 1 – Validation Study & E10 Study Standard Deviation Comparison

Based on the E10 study, the most reliable ARB data to date, with significantly reduced standard deviation ranges, with reasonable evidence as to why units exceeded the certified-to or imposed-upon diurnal limits, and a test sample more reflective of California's SORE population an inventory distribution, OPEI concludes that a high percentage SORE are compliant with their respective certification strategies and that both strategies are effectively working to assure air quality beyond ARB's goals.

ANNEX C
OPEI COUNSEL LEGAL ANALYSIS – LEGAL CHALLENGES ASSOCIATED WITH THE PROPOSED AMENDMENTS

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Legal Analysis Supporting OPEI's Comments on ARB's Proposed Evaporative Emission Standards for Small Spark-Ignited Off-Road Engines

Prepared on November 15, 2016 by:
William M. Guerry
Chair of the Environmental Section at Kelley Drye
Counsel to OPEI

Based on my 25 years of submitting comments on ARB's proposed emissions regulations and the corresponding U.S. EPA waiver-proceedings under the federal Clean Air Act (CAA) [1], I have prepared this memo to support OPEI's comments to ARB on several legal issues associated with the evaporative emission regulations proposed on September 27, 2016 by ARB staff.

I. Overview

The proposed evaporative regulations would require outdoor power equipment with "design- certified" components that individually complied with the current, component–based standards (for fuel tanks, canisters and lines) — to now abruptly also comply for enforcement purposes, with an overall "diurnal standard" based on SHED-based compliance testing of the entire piece of integrated-equipment.[2]

OPEI members (including several engine and equipment manufacturers with major operations located in California) have confirmed that the proposed regulations constitute a

[1] Section 209 (e) (2) of the CAA prohibit U.S. EPA from authorizing California regulations for non-road engines and equipment if the "California Standards and accompanying *enforcement procedures* are not consistent" with the federal CAA.

[2] Specifically, the proposed regulations state that the overall equipment "evaporative family will be deemed to have failed compliance testing"—if any engine or equipment has "diurnal emissions more than 5% above the applicable diurnal emission standard." (See § 2765 (8) of proposed regulations attached as Exhibit A).

"de facto" mandate to require SHED-testing to demonstrate compliance with the diurnal standard. Without such SHED-testing, these manufacturers would incur substantial and unacceptable enforcement-risks that ARB's SHED-based compliance testing could result in numerous failures and the ultimate rescission of their design-based certifications and related penalties. In its comments, OPEI has proposed to ARB staff a dramatically more practical and cost-effective alternative solution to address compliance with design-based components that have been installed in equipment.

II. Administrative Record

According to its Initial Statement of Reason (ISOR) from August 2003—supporting the current "Tier 3," evaporative standards—CARB Staff projected that each manufacturer would incur $3.5 million (over 7 years) to "shed-test" their equipment to meet a diurnal standard. In 2003, ARB determined that such diurnal-tests would not be cost-effective compared to the adopted "design-based" component program, which would still remain an "illusory" certification-only option under the new proposal. In 2003 rulemaking—after a review of extensive data—ARB only required walk behind mowers (WBMs) to be SHED tested. This is because the entire fuel system, including the tanks on WBMS, are produced in an integrated and generic fuel system in high volumes—by a handful of global engine manufacturers. In contrast, there are around 600 different evaporative families sold in California which have greater than 80cc engines and involve products other than WBMs. These are typically small volume, evaporative families because the fuel tanks have to be customized to fit into unique and complex configurations. Accordingly, ARB concluded in its ISOR in 2003 that it was not cost-effective to require non-integrated, equipment manufacturers of non-WBMs (many of whom are small businesses)—to either purchase SHEDs or contract for third parties to SHED-test their evaporative-tank families.

In contrast, CARB's administrative record in the current rulemaking fails to provide any technical-feasibility or cost-analysis on the impacts of its dramatically more stringent compliance program. In its ISOR for the current rulemaking, CARB staff over-

simplistically indicates that no additional costs will be triggered by this new much more stringent compliance testing responsibility and the associated expanded liability. (See pp. 88-99 of ISOR relevant provisions attached as Exhibit B). CARB Staff also fails to prepare a corresponding cost-effectiveness calculation—in terms of the impacts of the diurnal compliance test provisions—on the apparent grounds that there would not be any additional costs and "there are no direct quantifiable emissions benefits." (See p. 101 of ISOR attached as Exhibit B).

III. Executive Summary

Below are the conclusions of my legal analysis below:

- Compliance based on ARB's proposed enforcement tests procedures would make the existing certification-standards dramatically more stringent and therefore would trigger all the procedural requirements that apply to Agency-Rulemaking relative to each significant modification.
- Under the California Administrative Procedures Act (APA), a notice of proposed rulemaking (as well as the statement of reasons accompanying the final rule) must include consideration of the costs and benefits of the proposed regulation and less restrictive alternatives.
- Under the California APA, ARB has failed to prepare the required cost-benefit analysis for the proposed alternative solution proposed by OPEI or the diurnal SHED-compliance provisions proposed by ARB.
- ARB could not legally finalize its proposed more stringent diurnal compliance test procedures— unless these modifications were fully supported by an administrative record, which must document and quantify:
    - All the additional improvements to the regulated components and equipment that would be required to achieve and ensure full compliance with ARBs staff's proposed diurnal standards and expanded test procedures compared to the alternative proposed by OPEI;
    - The projected costs under ARB staff proposed of both those material improvements and SHED-testing for each manufacturer and the industry compared to the alternative proposed by OPEI;
    - Any benefits of such improvements under both the OPEI and ARB staff proposals;

- The related cost-benefits of each proposed modification to the existing compliance related test procedures and standards under the OPEI and ARB staff proposals.

- OAL would be legally compelled to disapprove the proposed SHED-based compliance testing and its diurnal standards and expanded test procedures because they are not supported by the administrative record as being cost-effective.
- ARB would be vulnerable to administrative and legal challenges that would result in these problematic provisions being invalidated— because ARB failed to comply with its procedural requirements in contradiction to the precedent summarized below.

IV. OAL Disapproval of Invalid Regulations

The Office of Administrative Law (OAL) routinely disapproves regulatory actions that fail to comply with procedures required by California's Section 11356.3 of the California Administrative Procedures Act (APA). This review is an independent check on the exercise of rulemaking powers by executive branch agencies—to improve the quality of regulations that implement, interpret, and make specific statutory law, and to ensure that the public is provided with a meaningful opportunity to comment on regulations before they become effective. Under these provisions California Agencies must prepare and file a "sufficient" Economic Impact Assessment (EIA) including a cost-benefit analysis. (See Section VI below). OAL must disapprove regulations in situations (like the current proposal) — in which the EIA "only includes a mere statement that there is no effect on all the elements" required by Section 11346.3.

V. Legal Cases

A. California Cases Finding Violation of APA Procedures

I have closely reviewed relevant precedent of California court decisions applying California's APA Requirements to relevant factual circumstances—where an Agency, Department or Board made a change to the compliance procedures used to generally implement and enforce an existing program. The most "on-point" California decision is Grier vs. Kizer, 219 Cal. App. 3d 422 (1990). (See case attached as Exhibit C). In that case, the California Department of Health Services (the Department) initiated an enforcement action to recoup Medi-Cal payments from a physician pursuant to a formal compliance-audit. The Department claimed that it had internally

developed a compliance methodology based on a "random sampling plan." That compliance methodology allowed the Department to extrapolate the results of data-points derived from individual patients from a subset of audited claims— to all claims that had been filed over a broad compliance period. The affected physician argued that the Department's extrapolation-methodology skewed and exaggerated the Department's compliance-determination that there had been an "over payment." The Department responded that it had "sufficient authority" to adopt and "generally apply" its "sampling plan" and extrapolation-methodology—pursuant to its statutory authority to audit Medi-Cal providers in a manner consistent with "standard auditing practices". OAL rejected the argument and determined the compliance methodology was an improper "underground regulation", which should have been adopted pursuant to the APA—because the challenged audit-methodology was a standard of "general application" implementing the Department's statutory authority.

Similar to ARB's stated position in the current proposal, the Department unsuccessfully argued to the court that the regulated entity was not required to do anything differently than the status-quo. Specifically the Department argued that "the provider is not required to do anything differently when the Department uses probability sampling to prove an overpayment", rather than relying on a full scale audit under the status quo. Id. at 437.

The Grier court rejected the Department's arguments and found the Department's "use of probability compliance-sampling might directly cause a provider to leave the Medi-Cal program to avoid the potential for large recoupments based on probability sampling." Id. The court held that the compliance sample-methodology was a "regulation" under the APA and that it did not fall under the "internal management exception as claimed by the Department." Consequently, the sampling technique was invalid.

In reaching this decision, the Grier court relied on Stoneham v. Rushen, 137 Cal. App.3d 729, (1982). (See case attached as Exhibit D). In Stoneham, the California Director of Corrections issued a bulletin with a new compliance classification and scoring system, which "generally applied" to all inmates and determined the proper level of custody and place of confinement. The Director unsuccessfully argued that "the procedural details contained in the classification system

merely implement the statement of policy set forth" as the "status quo" in an existing regulation. The Stoneham Court rejected this argument and held: The adoption of a standardized scoring system to determine an inmate's classification invoked the APA because it was "a rule of general application *significantly affecting* the male prison population" – *even though the new system did not impose any "additional burden on the inmates*."

In reaching its decisions, the Grier and Stoneham courts recognized that: "Unless the agency promulgates a regulation in substantial compliance with the APA, the regulation is without legal effect." See *Armistead* v. *State Personnel Board* 22 Cal.3d 198, 204 [149 Cal. Rptr. 1, 583 P.2d 744] (1978). Because the Legislature adopted the APA to give interested persons the opportunity to provide input on proposed regulatory action—any doubt as to the applicability of the APA's requirements must be resolved in favor of the APA and the aggrieved plaintiff. (See *Armistead* at p. 204).

B. Federal Cases

In the context of upholding challenges to emission regulations promulgated under Federal Clean Air Act- U.S. courts, including those located in California, have specifically recognized the inter-dependency and required-consistency between a test method used to establish the standard through the required administrative record—and the corresponding methods used for enforcing the standards:

- In Portland Cement Association v. Ruckelshaus, 486 F.2d 375, 396 (D.C. Cir. 1973), cert. denied, 417 U.S. 921 (1974), the court expressed concerns that the methods for sampling in the final EPA rule were different from those used in the tests to establish the standards in the administrative records. The court explained that "a significant difference between techniques used by the agency in arriving at standards, and requirements presently prescribed for determining compliance with standards, raises serious questions about the validity of the standard."[3] The court remanded the challenged Regulations and required

[3] See also Amoco Oil v. EPA, 501 F.2d 722, 743 (D.C. Cir. 1974); Essex Chemical Corp. V. Ruckelshaus, 486 F.2d 427, 436 (D.C. Cir. 1973), cert. denied, 416 U.S. 969 (1974).

EPA to explain the discrepancy between the test method used to develop the standard and the method used to enforce it. (Id.at 397).

- Courts have relied on this same fundamental principle to reject attempts by EPA to use test methods other than the test method specified to determine compliance, without undertaking rulemaking on the stringency of the standard that would be impacted by a more rigorous compliance testing. See Donner Hanna Coke Corp. V. Costle, 464 F.Supp. 1295, 1304 (W.D.N.Y. 1979).
- In U.S. v. Kaiser Steel, No. CV 82-2623-IH (C.D. Cal. 1984), the court rejected U.S. EPA's attempt to use "non-referenced" test method data for the enforcement purposes of establishing the duration of a violation.

VI. California's Administrative Procedures

In 1982, the California legislature adopted Government Code section 11317.5(a), which states;

> No state agency shall issue, utilize, enforce, or attempt to enforce any guideline, criterion, bulletin, manual, instruction, order, standard of general application, or other rule, which is a regulation as defined in subdivision (h) of section 11342, unless the guideline, criterion, bulletin, manual, instruction, order, standard of general application or other rule has been adopted as a regulation and filed with the Secretary of State pursuant to this chapter.

This section also provides that if OAL is notified of or learns of the issuance, enforcement or use of any such regulation which has not been properly adopted, it can issue a determination as to whether it is a regulation and make its determination available to the public and the courts.

The initial notice and final statement of reasons for a regulation must contain a description of the problem addressed; an "informative digest" containing an analysis of existing state and federal law and regulations; and analysis of the specific purpose of the regulation and the rationale for the agency's determination that the regulation is reasonably necessary to carry out those purposes. It must identify each technical, theoretical, and empirical study or report on which the agency relies. If there is any change from the originally proposed regulation, the agency must renotice the regulation for an additional comment period of at least fifteen days. The information

contained in the initial statement of reasons must be updated in the statement of reasons accompanying the final regulation.

The final regulation must also contain a summary of each objection or recommendation submitted during the comment period and an explanation of how the proposed action was changed to accommodate each objection or recommendation, or the reasons for making no change. No less than forty-five days after publication of the original notice, a public hearing must be held if any interested person requests one. No material can be added to the record after the close of the public hearing or comment period unless there is additional public comment thereon. The statute carefully defines the record, requires the agency to index the record, and apparently makes the record exclusive for judicial review purposes. On judicial review, a regulation may be declared invalid for a substantial failure to comply with procedural requirements; it is also invalid if the agency's determination that the regulation is reasonably necessary to effectuate the purpose of the statute is not supported by substantial evidence in the rulemaking.

In the last several years, the State Legislature adopted additional procedural safeguards under the APA. Government Code section 11346.3, subdivision (c) now requires "[e]ach state agency proposing to adopt, amend, or repeal a major regulation on or after November 1, 2013, shall prepare a standardized regulatory impact analysis in the manner prescribed by the Department of Finance pursuant to Section 11346.36." Subdivision (c) goes on to specify economic impacts that the standard regulatory impact analysis (SRIA) "shall address".

Government Code section 11346.3, subdivision (f) requires "[e]ach state agency ... that has prepared a standardized regulatory impact analysis pursuant to subdivision (c), shall submit that analysis to the Department of Finance upon completion." Subdivision (f) goes on to require Finance to provide comments to the rulemaking agency on the agency's analysis and requires the agency to respond to Finance's comments.

Title 1, CCR section 2000, defines a "major regulation" as "any proposed rulemaking action adopting, amending or repealing a regulation subject to review by OAL that

will have an economic impact on California business enterprises and individuals in an amount exceeding fifty million dollars ($50,000,000) in any 12-month period between the date the major regulation is estimated to be fully implemented (as estimated by the agency), computed without regard to any offsetting benefits or costs that might result directly or indirectly from that adoption, amendment or repeal."[4] Section 2000 defines "economic impact" for purposes of determining whether a regulation is a "major regulation" as "all costs or benefits (direct, indirect and induced) of the proposed major regulation on business enterprises and individuals located in or doing business in California."

VII. Conclusion

ARB cannot legally increase the stringency of the current "design-based" program through imposing the SHED-based diurnal requirements— without first quantifying and justifying the feasibility and costs of such a fundamental change to the standard-stringency relative to any resulting benefits—and also by comparing those costs and benefits to the effectiveness of the OPEI's proposed alternative. Given that in the current proposed rulemaking that ARB has concluded that there are "no quantifiable benefits" from its new compliance requirement—it would be impossible for ARB to now demonstrate that the unquantifiable benefits justified the costs that ARB estimated will be $3.5 million per manufacturer to purchase a SHED.

If the Board were to adopt the regulations as proposed with the current deficient administrative record, then OAL (and or a California or federal court) would be legally compelled to disapprove and invalidate the regulations. I am confident such disapproval would occur for the reasons set forth in this memo. Accordingly, it is in ARB's interest to work now with the affected stakeholders, OAL, and the Department of Finance to fill all the factual and procedural gaps set forth in this memo and develop a supported cost-benefit analysis—before any Board consideration for a final vote of adoption.

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[4] "Major Regulation" is also defined in Government Code section 11342.548.

I would welcome the opportunity to discuss these concerns and suggested improvements with counsel for ARB as well as OAL.

A

APPENDIX A, PROPOSED REGULATION ORDER

Amend sections 2750, 2751, 2752, 2753, 2754, 2754.1, 2754.2, 2755, 2756, 2757, 2758, 2759, 2760, 2761, 2762, 2763, 2764, 2765, 2766, 2767, 2767.1, 2768, 2769, 2770, 2771, 2772, 2773, title 13, California Code of Regulations, and adopt section 2774, to read as follows:

(Note: The proposed amendments are shown in underline to indicate additions and ~~strikeout~~ to indicate deletions from the existing regulatory text.)

Chapter 15. Additional Off-Road Vehicles and Engines Pollution Control Requirements

Article 1. Evaporative Emission Requirements for Off-Road Equipment

§2750. Purpose.

The purpose of these regulations is to:

(a) Set ~~performance~~evaporative emission standards for gasoline-fueled, spark-ignited small off-road engines rated at equal to or less than 19 Kilowatts, and equipment utilizing such engines;

(b) In order to give manufacturers maximum flexibility, ~~compliance~~certification programs are available beginning the 2006 model year. The two options are identified in section 2754(a) and in section 2754(b), and ~~assume~~require running loss emissions ~~are~~to be controlled during engine operation, which results in greater evaporative emissions reductions. Manufacturers must select one option for each evaporative family they certify.

NOTE: Authority cited: Sections 39600, 39601, and 43013, Health and Safety Code. Reference: Section 43013, Health and Safety Code.

§2751. Applicability.

(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 in California, without an evaporative emission control system that has been certified and labeled pursuant to this Article.

(b) No person shall:

Your evaporative emission control system may include parts such as: carburetors, fuel tanks, fuel lines (for liquid fuel and fuel vapors), fuel caps, valves, canisters, filters, ~~vapor hoses,~~ clamps, connectors, and other associated components. ~~**For engines less than or equal to 80 cc, only the fuel tank is subject to the evaporative emission control warranty requirements of this section.**~~

~~A combined exhaust and evaporative warranty statement is acceptable. For combined warranty statements, "evaporative emission" can be replaced with "emissions" where "emissions" is understood to mean both exhaust and evaporative emissions.~~

MANUFACTURER'S WARRANTY COVERAGE:

This evaporative emission control system is warranted for two years. If any evaporative emission-related part on your equipment is defective, the part will be repaired or replaced by (~~manufacturer's~~ Holder's name).

OWNER'S WARRANTY RESPONSIBILITIES:

- As the (equipment type) owner, you are responsible for performance of the required maintenance listed in your owner's manual. (~~Manufacturer's~~ Holder's name) recommends that you retain all receipts covering maintenance on your (equipment type), but (~~manufacturer's~~ Holder's name) cannot deny warranty solely for the lack of receipts.
- As the (equipment type) owner, you should ~~however~~ be aware that ~~the~~ (~~manufacturer's~~ Holder's name) may deny you warranty coverage if your (equipment type) or a part has failed due to abuse, neglect, or improper maintenance or unapproved modifications.
- You are responsible for presenting your (equipment type) to a (~~manufacturer's~~ Holder's name) distribution center or service center as soon as the problem exists. The warranty repairs ~~should~~ shall be completed in a reasonable amount of time, not to exceed 30 days. If you have a question regarding your warranty coverage, you should contact (Insert chosen ~~manufacturer's~~ Holder's contact) at (1-XXX-XXX-XXXX).

NOTE: Authority cited: Sections 39600, 39601, and 43013, Health and Safety Code. Reference: Section 43013, Health and Safety Code.

§2765. New Equipment Compliance Testing.

(a) Compliance Test Procedures.

(1) The Executive Officer may order ~~an engine or equipment manufacturer~~ Holder to make available for compliance testing and/or inspection ~~five~~one or more fuel lines, carbon canisters, fuel tanks, engines, or equipment units with complete evaporative emission control systems. Unless otherwise directed by the Executive Officer, the fuel lines, carbon

canisters, fuel tanks, engines, or equipment units shall be delivered to the Haagen-Smit Laboratory, 9528 Telstar Avenue, El Monte, California. Fuel lines, carbon canisters, fuel tanks, engines or equipment units must be selected at random from sources specified by the Executive Officer according to a method approved by the Executive Officer, that, insofar as practical, must exclude engines or equipment that would result in an unreasonable disruption of the ~~manufacturer's~~Holder's distribution system. Such an order may include a requirement to demonstrate that the measured rate or volume of purge from a representative sample of production canisters and engines certified under section 2754 ~~(b)~~ meets any design specification required by the Executive Officer in the applicable Executive Order of Certification or included by the ~~manufacturer~~ Holder in the application for such an Order.

(2) The Executive Officer may obtain fuel lines, carbon canisters, fuel tanks, engines, or equipment units with complete evaporative emission control systems manufactured for sale or lease for use or operation in California, sold or leased or offered for sale or lease for use or operation in California, or delivered or imported into California for introduction into commerce in California for compliance testing or inspection.

(~~2~~3) The method for selection and testing of the fuel lines, carbon canisters, fuel tanks, engines or equipment and the evaluation of test data must be made in accordance with the procedures set forth herein.

(~~3~~4) Air Resources Board personnel shall have access to the fuel line, carbon canister, fuel tank, engine, or equipment assembly plants, or distribution facilities for the purposes of fuel line, carbon canister, fuel tank, engine, or equipment selection and testing. Scheduling of access shall be arranged with the representative designated in the application for certification.

(~~4~~5) All testing must be conducted in accordance with the applicable model year evaporative emission test procedures, except that durability testing and preconditioning may be omitted or conducted at a lower temperature at the Executive Officer's discretion. Any evaporative emission control system parameters must be set to values or positions that are within the range available to the ultimate purchaser as determined by ARB. No break-in, ~~or~~ modifications, adjustments, ~~or~~ special preparation or maintenance will be allowed on fuel lines, carbon canisters, fuel tanks, engines or equipment units chosen for compliance testing without the written consent of the Executive Officer.

(~~5~~6) Correction of damage or maladjustment that may reasonably be found to have resulted from shipment of the engine or equipment is permitted only after an initial test of the engine or equipment, except where 100 percent of the ~~manufacturer's~~ Holder's production is given that inspection or

maintenance by the ~~manufacturer's~~ Holder's own personnel. The ~~manufacturer~~ Holder may request that the engine or equipment be repaired from shipping damage, and be retested. If the Executive Officer concurs, the engine or equipment may be retested, and the original test results may be replaced by the after-repair test results.

(~~6~~7) Engines or equipment must be randomly chosen from the selected evaporative family or subgroup.

(~~7~~8) ~~Five fuel lines, carbon canisters, tanks, engines or equipment of the same model within an evaporative family or subgroup will be selected for testing per the applicable test procedure.~~ An evaporative family ~~or subgroup~~ will be deemed to have passed the compliance testing if ~~all five test results~~ the diurnal emissions from all tested engines or equipment units are below the applicable diurnal emission standard in section 2754 or 2757, or the EMEL, if applicable. If any engine or equipment unit has diurnal emissions more than five percent above the applicable diurnal emission standard in section 2754 or 2757, or the EMEL, if applicable, the evaporative family will be deemed to have failed compliance testing. If any engine or equipment unit has diurnal emissions within five percent of the applicable diurnal emission standard in section 2754 or 2757, or the EMEL, if applicable, the engine or equipment unit shall be tested a second time. If the diurnal emissions from an engine or equipment unit tested a second time are below the applicable diurnal emission standard in section 2754 or 2757, or the EMEL, if applicable, the results from the second test shall replace the results from the first test. If the diurnal emissions from an engine or equipment unit tested a second time are above the applicable diurnal emission standard in section 2754 or 2757, or the EMEL, if applicable, the evaporative family will be deemed to have failed compliance testing.

The fuel lines, carbon canisters, or fuel tanks certified under an Executive Order will be deemed to have passed the compliance testing if all tested samples meet the applicable design standard in section 2754, 2755, or 2757. The fuel lines, carbon canister, or fuel tanks certified under an Executive Order will be deemed to have failed compliance testing if any fuel line, carbon canister, or fuel tank does not meet the applicable design standards in section 2754, 2755, or 2757. ~~If one or more of the test results are above the applicable standard, an evaporative family or subgroup will be deemed to have failed the compliance testing if the upper 95% confidence limit of the five samples is greater than 150%, 130%, or 110% of the applicable performance standards specified in sections 2754 through 2757 of this Article per the following table:~~

Test Category	"Pass" If "*U*" is less than or equal to	"Fail" If "*U*" is greater than
1st Year of Production of Evaporative Families	1.5*Applicable Standard	1.5*Applicable Standard
2nd Year of Production of Evaporative Families	1.3*Applicable Standard	1.3*Applicable Standard
3rd and Subsequent Years of Production of Evaporative Families	1.1*Applicable Standard	1.1*Applicable Standard

Where:

$$U = \bar{x} + 2.776 * \frac{s}{\sqrt{n}}$$

$$\bar{x} = \frac{\sum_{i=1}^{n} sample_i}{n}$$

$$s = \sqrt{\frac{\sum_{i=1}^{n} (x_i - \bar{x})^2}{n-1}}$$

$n = 5$

(9) An evaporative family may be deemed to have failed compliance testing without testing if any engine or equipment unit selected for testing visibly leaks fuel, except that subsection (a)(6) shall still apply.

(810) If any group of fuel lines, carbon canisters, fuel tanks, engines, or equipment units selected for inspection fails an evaporative emission compliance test as determined by subsection (a)(78) or (a)(9), or fails to conform to the labeling requirements of section 2759, the Executive Officer shall notify the manufacturer in accordance with subsection (b).

(b) Notification of Failure.

If compliance testing identifies fuel lines, carbon canisters, fuel tanks, engines or equipment unitsevaporative families that do not meet the standards set out in (a)(7) above, or that do not conform with the permeation control design or permeation specifications of in sections 2754 through 2757 or the labeling requirements in section 2759, the Executive Officer will notify the Holder of the Executive Order of Certification covering the fuel lines, carbon canisters, fuel tanks,engines or equipmentevaporative families. The Executive Officer shall also

notify such Holder that the Executive Order of Certification may be suspended or revoked. The Holder of the Executive Order of Certification shall have 30 calendar days in which to notify the Executive Officer of their intent to provide additional information and/or independent test results for five fuel lines, carbon canister, fuel tanks, engines, or equipment units selected by the Executive Officer that document compliance of the evaporative family, fuel lines, carbon canister, or fuel tanks. The Executive Officer will consider all relevant information provided by the manufacturer, and other interested parties, including, but not limited to corrective actions applied to the noncompliant evaporative family and emission credits to remedy the failure.

(c) Suspension and Revocation of Executive Orders.

(1) The Executive Officer shall not revoke or suspend the Executive Order of Certification, without considering any information provided by the Holder of such certification pursuant to (b) above.

(2) If the results of the compliance testing indicate that the failed fuel lines, carbon canisters, fuel tanks, ~~engines,~~ or ~~equipment units of a particular~~ evaporative family ~~or subgroup~~ certified under an Executive Order are produced at one plant, the Executive Officer may elect to suspend the Executive Order of Certification with respect to that evaporative family for engines or equipment manufactured at that plant.

(3) Notwithstanding the foregoing, the Executive Officer may suspend an Executive Order of Certification~~-~~, in whole or in part, effective upon written notice to the Holder if the Executive Officer finds that:

(A) The Holder of the Executive Order of Certification has refused to comply with any of the requirements of this section; or

(B) The Holder has submitted false or incomplete information in any report or information provided to the Executive Officer under this section;

(C) The Holder has rendered inaccurate any test data submitted under this section;

(D) That ARB personnel have been denied the opportunity to conduct activities authorized under this section after a warrant or court order is presented to the Holder;

(E) That ARB personnel were unable to conduct activities authorized in this Article because the facility is located in a foreign jurisdiction where local law prohibits those activities.

(4) The Executive Officer may revoke an Executive Order of Certification for an evaporative family, fuel line, carbon canister, or fuel tank after the Executive Order of Certification has been suspended pursuant to subsection (1), ~~or~~ (2), or (3) of this section if the proposed remedy for the nonconformity, as reported by the Holder to the Executive Officer, is one requiring a design change or changes to the evaporative emission control system, fuel line, carbon canister, or fuel tank as described in the application for certification of the affected evaporative family, fuel line, carbon canister, or fuel tank ~~or subgroup~~.

(5) Once an Executive Order of Certification has been suspended for a failed fuel line, carbon canister, fuel tank, ~~engine,~~ or evaporative family ~~equipment~~, as provided for in subsection (1), (2), or (3) of this section, the Holder must take the following actions before the Executive Order of Certification can be reinstated:

(A) Remedy the nonconformity;

(B) Demonstrate that the fuel line, carbon canister, fuel tank, ~~engine,~~ or evaporative family ~~equipment~~ conforms to the ~~evaporative emission~~ standards in sections 2754 through 2757 and the labeling requirements in section 2759, as applicable, by retesting ~~the~~ each fuel line, carbon canister, fuel tank, ~~engine,~~ or ~~equipment~~evaporative family in accordance with these regulations and submitting to the Executive Officer samples of all actual production labels used within the evaporative family; and

(C) Submit a written report to the Executive Officer, after successful completion of testing on the failed fuel line, carbon canister, fuel tank, ~~engine,~~ or evaporative family ~~equipment~~ that contains a description of the remedy and test results for each fuel line, carbon canister, fuel tank, ~~engine,~~ or ~~equipment~~evaporative family in addition to other information that may be required by this part.

(6) Once an Executive Order of Certification for a failed evaporative family, fuel line, carbon canister, or ~~subgroup~~ fuel tank has been suspended pursuant to subsection (1), (2) or (3) of this section, the Holder must take the following actions before the Executive Officer will consider reinstating the Executive Order of Certification:

(A) Submit a written report to the Executive Officer that identifies the reason for the noncompliance of the fuel lines, carbon canisters, fuel tanks, ~~engines,~~ or evaporative family ~~equipment~~, describes the proposed remedy, including a description of any proposed quality control and/or quality assurance measures to be taken by the

Holder to prevent future occurrences of the problem, and states the date on which the remedies will be implemented; and

(B) Demonstrate that the evaporative family, fuel line, carbon canister, or fuel tank ~~subgroup~~ for which the Executive Order of Certification has been suspended does in fact comply with the regulations of this part by testing no fewer than five fuel lines, carbon canisters, fuel tanks, engines, or equipment units. ~~The results must meet the "Pass" criteria in subsection (a)(7).~~ Such testing must comply with the provisions of this section.

(7) Once the Executive Order of Certification has been revoked for an evaporative family, fuel lines, carbon canister, or fuel tank ~~subgroup~~, if the Holder desires to continue introduction into commerce of a modified version of that evaporative family or subgroup, the Holder must:

After implementing the change or changes intended to remedy the nonconformity, demonstrate that the modified evaporative family, fuel line, carbon canister, or fuel tank does in fact conform to the applicable standards of this Article by testing five fuel lines, carbon canisters, fuel tanks, engines or equipment units selected by the Executive Officer from the modified evaporative family unless such testing is waived by the Executive Officer.

(8) To permit a Holder to avoid storing non-test engines or equipment while conducting subsequent testing of the noncomplying evaporative family, a Holder may request that the Executive Officer conditionally reinstate the Executive Order of Certification for that evaporative family.

NOTE: Authority cited: Sections 39600, 39601, and 43013, Health and Safety Code. Reference: Section 43013, Health and Safety Code.

§2766. Exemptions.

~~(a) Low Permeation Tanks - Metal tanks, coextruded multilayer tanks, and structurally integrated nylon fuel tanks on SORE equipment with engine displacements < 80 cc are specifically exempt from section 2755 of this Article. Tank permeation data is not required to be submitted in the certification application.~~

~~(b) Small Production Volume Tank Exemption. These engines or equipment qualifying under section 2752(a)(26) are exempt from the diurnal standards in section 2754 and the fuel tank permeation standard in 2754 of this Article if the equipment contains the following:~~

B

State of California
AIR RESOURCES BOARD

PUBLIC HEARING TO CONSIDER THE PROPOSED AMENDMENTS TO THE EVAPORATIVE EMISSION REQUIREMENTS FOR SMALL OFF-ROAD ENGINES

STAFF REPORT: INITIAL STATEMENT OF REASONS

DATE OF RELEASE: September 27, 2016
SCHEDULED FOR CONSIDERATION: November 17, 2016

Location:

California Environmental Protection Agency
Air Resources Board
Byron Sher Auditorium
1001 I Street
Sacramento, California 95814

This report has been reviewed by the staff of the California Air Resources Board and approved for publication. Approval does not signify that the contents necessarily reflect the views and policies of the Air Resources Board, nor does mention of trade names or commercial products constitute endorsement or recommendation for use.

The SORE validation studies were conducted on model year 2008-2010 and 2013-2015 equipment. In total, between 2008 and 2016, 59 units of equipment were tested: 49 design-certified and 10 performance-certified. Each unit underwent three diurnal emissions tests. As part of the agreed-upon study design, equipment was tested at a combination of ARB and industry testing facilities. Fifty five percent of the design-certified units and 60 percent of the performance-certified units failed to meet the applicable diurnal emissions standard in at least one of three diurnal emissions tests. Emissions from failing equipment in 2013 were up to 14 times the applicable emissions standard. These results suggest over half of all SORE sold in California do not meet the diurnal emission standards and that changes are needed to increase compliance with those standards.

In addition, the current certification test fuel does not contain ethanol, unlike the gasoline dispensed at California fueling stations, which has contained 10 percent ethanol since 2010. This outdated certification fuel is no longer representative of the gasoline sold in California, and testing with it may lead to an underestimation of SORE evaporative emissions. Small differences between the ARB fuel tank test procedure adopted in 2003 and U.S. EPA's test procedure, adopted in 2008, require manufacturers to conduct two separate sets of tests to obtain certification from ARB and U.S. EPA. This leads to unnecessarily high testing costs and certification timelines for SORE manufacturers. Because the ARB and U.S. EPA fuel tank test procedures are very similar, minimizing the differences between the two procedures and enabling one set of tests to meet the requirements of both agencies will reduce overall costs and paperwork for manufacturers.

Staff Proposal

To address the serious compliance issues identified in the SORE validation studies, staff proposes a number of amendments to the SORE regulations, including:

- Subjecting design-certified SORE to diurnal emission standards;
- Reducing the number of SORE engine units needed to be tested before ARB can take enforcement action from five to one;
- Requiring bonds for manufacturers without sufficient U.S. assets to cover enforcement obligations;
- Requiring recertification of evaporative components every four years;
- Requiring test fuel formulation to contain 10 percent ethanol (E10) to reflect motor vehicle fuel currently available in California; and
- Aligning, where practical, and without compromising ARB requirements, SORE certification and test procedures with those of U.S. EPA.

Currently, only the individual evaporative emission system components (fuel tank, fuel lines, and carbon canisters) of design-certified SORE can be tested for compliance, without accounting for other sources of evaporative emissions, such as carburetors. Manufacturers of performance-certified SORE are only required to test a single unit for certification, while ARB currently is required to test five SORE units to determine

compliance. This proposal will harmonize the number of units needed for certification and compliance, thus enabling ARB to evaluate and take potential enforcement action against a larger number of SORE manufacturers.

The proposed revision to subject design-certified SORE to diurnal emission standards will allow ARB to compliance test the assembled SORE as a unit to ensure compliance with those standards. Aligning compliance testing and certification testing requirements will also facilitate compliance testing by making the two sets of requirements comparable. This alignment will have the benefit of allowing ARB to perform more compliance tests with the same level of resources.

By establishing bonding requirements for manufacturers with less than $3-10 million in U.S. assets, depending on the length of time they have had certified SORE in California, the proposed amendments will help ensure SORE manufacturers have the ability to meet any potential monetary obligations associated with enforcement actions, and will deter manufacturers from knowingly producing non-compliant SORE products. The proposed bonding requirements are similar to those already adopted by U.S. EPA and in use nationally.

Certification renewal every four years for evaporative components will require Executive Order holders to assess whether any changes have been made that would affect the components' evaporative emissions. This revision will also provide ARB with a mechanism through which deficiencies can be corrected by withholding certification until information is provided that demonstrates compliance with SORE evaporative emission standards.

The proposed change in test fuel formulation will have no immediate effect on real-world ROG emissions because motor vehicle fuel dispensed at California gasoline stations has already been changed. Fuel at gasoline stations has contained 10 percent ethanol since January 2010. Therefore, SORE currently in use in California operate using E10 fuel. SORE that comply with the diurnal emission standards when tested with the current certification test fuel are expected to also comply when tested with E10 fuel. However, requiring E10 certification test fuel, along with the other proposed amendments that are intended to increase compliance rates, will help to ensure SORE introduced into California commerce meet current emission standards with commercially available gasoline. Aligning ARB SORE certification and test procedures with U.S. EPA procedure, where possible, eliminates duplicative requirements and gives manufacturers the option to certify fuel tanks based on a common set of data acceptable to both ARB and U.S. EPA.

Staff estimates the total cost of implementing the regulation amendments over a five year period will be $32.7 million (2016 dollars). Executive Order holders may incur costs for testing, certification, labeling, reporting, and evaporative emissions control system components up to approximately $7.0 million per year (2016 dollars). Current SORE sales in California are estimated at approximately 1.77 million units per year; therefore, assuming that SORE manufacturers mark-up costs by 75 percent, the

maximum price impact on SORE sold in California is estimated as $3.68 per unit (assuming the costs are averaged over all SORE sales in California over five years). Additionally, by aligning ARB certification and test procedures with those used by U.S. EPA, the proposed amendments will provide SORE manufacturers the opportunity to conduct a single set of fuel tank certification tests that can be accepted by both ARB and U.S. EPA. Testing one set of fuel tanks to meet ARB and U.S. EPA requirements will allow manufacturers to potentially spread costs across SORE sold nationwide, reducing the cost per unit.

Staff Recommendation

In arriving at the staff recommendation, ARB performed validation testing for more than eight years (2008-2016), conducted extensive stakeholder outreach, and held two public workshops to solicit feedback during development of the proposed amendments. Based on input from stakeholders, staff considered alternatives to the current proposal including no action, eliminating design certification entirely, and a counter-proposal from SORE industry representatives. Taking no action would severely limit ARB's ability to conduct compliance testing on SORE equipment, and provide no assurance the disparity between certification test data and SORE validation study results could be eliminated; therefore, this alternative was rejected. Staff believes eliminating the option for design certification would place an undue economic burden on the entire SORE industry, and would unfairly penalize SORE manufacturers currently producing design-certified equipment capable of meeting current SORE emission standards; therefore, this alternative was rejected. Staff gave serious consideration to the regulatory proposal submitted by SORE industry representatives, and indeed included some of their suggestions in the current staff proposal. However, staff ultimately decided this counter proposal, in whole, would make compliance testing more resource-intensive and complex, and would not provide ARB the ability hold SORE manufacturers accountable to ARB emissions standards for SORE; therefore, this alternative was also rejected.

Staff concludes the current proposal will enhance ARB's ability to identify non-compliant equipment, while not unfairly penalizing compliant manufacturers, and recommends that the Board adopt the proposed SORE regulatory amendments. The current proposal will increase compliance with the existing diurnal emission standards, ensuring that ROG emissions reductions needed for the State Implementation Plan (SIP) are achieved, while reducing near-source exposure to TACs and the associated health risk.

Future Actions

In September 2016, the Board considered proposed amendments to California's SIP for attaining NAAQS for ozone. Emissions of ROG and oxides of nitrogen (NO_x) from SORE are currently about 27 percent of those from light-duty vehicles in California. Because already adopted regulations like the Advanced Clean Cars Program will significantly reduce emissions from light-duty vehicles, absent any new regulations SORE emissions are projected to be relatively unchanged, and by 2031 would be 77

17. Section 2765. New Equipment Compliance Testing.

Summary for Section 2765

Throughout the section, "manufacturer" was changed to "Holder." Section 2765(a)(1) was modified to require "one or more fuel lines, carbon canisters, fuel tanks, engines, or equipment units" for compliance testing rather than five. A new section 2765(a)(2) was added that provided for the Executive Officer to obtain fuel lines, carbon canisters, fuel tanks, engines or equipment units from the California marketplace for compliance testing. Section 2765(a)(4) was renumbered to 2765(a)(5) and a provision was added to allow durability testing and preconditioning to be omitted from compliance testing at the Executive Officer's discretion.

Section 2765(a)(7) was renumbered to 2765(a)(8) and the sentence, "Five fuel lines, carbon canisters, tanks, engines or equipment of the same model within an evaporative family or subgroup will be selected for testing per the applicable test procedure," was deleted. The confidence interval test was removed. The revised section 2765(a)(8) specifies that an evaporative family will pass compliance testing if all tested units meet the applicable emission standards in sections 2754 or 2757, or the EMEL, if applicable. An evaporative family will fail compliance testing in any tested unit has diurnal emissions more than five percent above the applicable diurnal emission standard, and any unit with diurnal emissions less than five percent above the standard will be retested. If all retested units meet the diurnal emission standard on the retest, the evaporative family will pass compliance testing; if not, the evaporative family will fail compliance testing. Fuel lines, carbon canisters, or fuel tanks will pass compliance testing if all tested units meet the applicable emission standards in sections 2754, 2755, or 2757, and will fail if any tested unit has emissions that exceed the applicable emission standards. Section 2765(a)(9) was added to clarify that any sign of visual leakage constitutes a failure of compliance testing.

Section 2765(b) was modified to include notification of failure for fuel lines, carbon canisters, and fuel tanks. Notification of failure to meet labeling requirements was also added to the section. A requirement was added that the Executive Officer select the five units for independent testing if a Holder chooses to provide independent test results for the Executive Officer's consideration.

Section 2765(c) was modified to include suspension and revocation of Executive Orders for fuel lines, carbon canisters, and fuel tanks. When a Holder fails to meet the labeling requirements, he or she will be required to demonstrate that the fuel line, carbon canister, fuel tank, or evaporative family meets the requirements and submit production labels before a suspended Executive Order will be reinstated. Section 2765(c)(7) was

modified to require the test units to be selected by the Executive Officer when a Holder conducts testing to demonstrate a modified evaporative family meets the applicable standards after an Executive Order has been revoked.

Rationale for Section 2765

Referring to Holders rather than manufacturers is consistent with the text throughout the Article. Requiring one or more test units for compliance testing rather than five is consistent with the certification requirements for evaporative systems and will reduce the testing burden on ARB staff. Providing for the Executive Officer to obtain units from the California marketplace will give ARB more flexibility when choosing equipment for compliance testing. Conducting compliance testing without durability testing or preconditioning will allow for much faster initial testing. A compliance test with durability testing and preconditioning might take six months or more, but one without durability testing and preconditioning could be completed in a few days. This faster testing can be used to identify non-compliant evaporative families sooner and prevent sales of non-compliant evaporative systems from continuing. If ARB does conduct compliance testing with the durability demonstration and/or preconditioning, performing the durability demonstration or preconditioning at a room temperature of approximately 20 °C at the Executive Officer's discretion will not result in higher diurnal emissions than if the temperatures specified in TP-902 were used. If the results differ at all, they might be slightly lower than those produced if the temperatures specified in TP-902 were used. However, the flexibility provided will allow ARB to conduct more compliance testing. Compliance testing can also be conducted on multiple models in an evaporative family more easily, if desired.

Removing the confidence interval test and requiring all test units to pass are consistent with testing one or more units, and will ensure that all evaporative systems are designed to have emissions below the emission standards. Conducting a retest for any unit that has diurnal emissions less than five percent above the diurnal emission standard is consistent with the certification requirement to conduct a retest if the diurnal emissions are greater than 95 percent of the standard. The retest will either confirm that the unit fails consistently, in which case the evaporative family will fail, or will indicate that the unit can meet the standard, in which case the evaporative family will pass. Section 2765(a)(9) was added so that equipment showing signs of visual leakage would not need to be tested. ARB testing has shown that equipment with visible fuel leaks is certain to have emissions far above the diurnal emission standard. Testing such equipment is also likely to contaminate the SHED, resulting in a time consuming and expensive decontamination process. Since leaking equipment presents air quality, near-source exposure, and safety risks, it is

critical to make a determination of failure as quickly as possible so the evaporative family can be recalled or its sales can be stopped if necessary.

The additions to the notification of failure paragraph, section 2765(b), clarify the procedure to be followed when labeling requirements are not met or emissions from fuel lines, fuel tanks, or carbon canisters exceed the emission standards. Requiring the test units to be selected by the Executive Officer if a Holder chooses to provide independent test results for the Executive Officer's consideration will ensure the test units are randomly selected and representative of the units introduced into California commerce.

Adding fuel lines, carbon canisters, and fuel tanks to the suspension and revocation provisions clarifies the procedure to be followed when an Executive Order for one of these components must be suspended or revoked. Requiring a Holder to demonstrate compliance with the labeling requirements and providing sample labels before an Executive Order will be reinstated will allow ARB to confirm the revised labels meet the requirements and avoid additional violations for the same labels. If an Executive Order has been revoked, having the Executive Officer select the test units for the Holder's testing of the modified evaporative family will ensure the test units are randomly selected and representative of the units to be introduced into California commerce.

18. Section 2766. Exemptions.

Summary for Section 2766

The exemptions for metal, coextruded multilayer, and structurally integrated nylon fuel tanks on engines with displacement less than or equal to 80 cc was deleted. The Small Production Volume Tank Exemption was deleted. The exemption for generators fueled by a vehicle fuel tank was modified to refer to "diurnal emission, fuel tank permeation, and carbon canister design standards in section 2754" rather than "diurnal performance requirements in section 2754 and the fuel tank permeation and carbon canister requirements in section 2754(b)."

Rationale for Section 2766

Deleting the exemption from the requirements of section 2755 for metal, coextruded multilayer, and structurally integrated nylon fuel tanks on engines with displacement less than or equal to 80 cc will give ARB the ability to enforce the emission standards for all fuel tanks on these engines, and will require a demonstration that these tanks meet the emission standards in order to be certified. Deleting the Small Production Volume Tank Exemption will also ensure fuel tanks meet the emission standards.

important of the relatively long-lived greenhouse gases tabulated by the Intergovernmental Panel on Climate Change (Section 2.3.2) in terms of radiative forcing, reducing ROG emissions and the associated impacts on methane's atmospheric lifetime constitute a climate benefit.

D. Reduction of Exposure to Toxic Emissions

One of the expected co-benefits of the proposed amendments is reduced exposure to toxic air pollutants, specifically benzene, which makes up about one percent of current blends of gasoline. Most of the evaporative emissions from the current fleet of SORE in California occur when SORE are stored, often in a garage attached directly to a residential structure. SORE equipped with evaporative emissions controls compliant with the proposed emissions standards will reduce not only ROG emissions, but also the exposure of residential occupants to benzene and other hazardous air pollutants.

IV. ENVIRONMENTAL ANALYSIS

A. Introduction

Staff has determined the proposed SORE regulatory amendments are exempt from the requirements of California Environmental Quality Act (CEQA). An analysis of this determination is provided in section B below. ARB's regulatory program, which involves the adoption, approval, amendment, or repeal of standards, rules, regulations, or plans for the protection and enhancement of the State's ambient air quality, has been certified by the California Secretary for Natural Resources under Public Resources Code section 21080.5 of CEQA (Cal. Code Regs., title 14, section 15251(d)). Public agencies with certified regulatory programs are exempt from certain CEQA requirements, including but not limited to, preparing environmental impact reports, negative declarations, and initial studies. ARB, as a lead agency, prepares a substitute environmental document (referred to as an "Environmental Analysis" or "EA") as part of the Staff Report to comply with CEQA (Cal. Code Regs., title 17, sections 60000-60008). If the regulatory amendments are finalized, a Notice of Exemption will be filed with the Office of the Secretary for the Natural Resources Agency and the State Clearinghouse for public inspection.

B. Analysis

Staff determined the proposed regulatory amendments are exempt from CEQA under the "general rule" or "common sense" exemption (Cal. Code Regs., title 14, section 15061(b)(3)). The common sense exemption states a project is exempt from CEQA if "the activity is covered by the general rule that CEQA applies only to projects which have the potential for causing a significant effect on the environment. Where it can be seen with certainty that there is no

possibility that the activity in question may have a significant effect on the environment, the activity is not subject to CEQA." The proposal is also categorically exempt from CEQA under the "Class 8" exemption (14 CCR 15308) because it is an action taken by a regulatory agency for the protection of the environment.

The proposed SORE regulatory amendments increase the robustness of the certification and compliance testing procedures, update the certification test fuel, and require executive order certification renewal for evaporative components every 4 years. As described above in the section on Air Quality, validation studies suggest that more than 50 percent of the SORE equipment sold in California fails to meet ARB's diurnal emission standards. These proposed changes to the SORE regulations will decrease the potential of introducing SORE into commerce that are incapable of meeting ARB diurnal emission standards, resulting in potential decreases in ROG emissions through increased in-use compliance rates.

Requiring executive order renewal at four-year intervals for evaporative families may result in additional testing and report generation, but this increased testing can be completed using current facilities. ARB staff has found no evidence suggesting this additional, periodic testing of a relatively small number of SORE equipment has the potential to cause any significant adverse environmental impacts when compared to the ongoing use and operation of 16 million pieces of equipment.

The proposed SORE regulatory amendments also require certification test fuel to contain 10 percent ethanol, which is reflective of motor vehicle pump fuel currently dispensed at California gasoline stations. Therefore, this proposed change would not result in increased ROG emissions from in-use SORE equipment. Requiring certification test fuel to contain 10 percent ethanol does have the possibility of increasing emissions from certification testing. Staff used a "worst case" scenario to calculate the potential estimated emissions increase. The total potential "worst case" increase in emissions from certification testing due to the change in test fuel was estimated by assuming a 50 percent increase in the emission rate when testing with the updated fuel versus the current fuel. With this increase in emission rate, the total increase in emissions from all of the certification testing that may occur in one year was estimated to be 3.7 pounds per day. Table IV-1 provides the VOC emission thresholds and attainment status for several California air districts. The overall increase in evaporative emissions of 3.7 pounds per day related to the requirement that the updated certification test fuel contain 10 percent ethanol would be below the VOC threshold for air districts in California. As noted above, the proposed fuel change would only affect a small amount of testing units, since manufacturers only need to test one representative piece of equipment from each performance-certified evaporative family or five samples of an evaporative component.

Amending the existing regulations to require test fuel that better reflects motor vehicle fuel in use in California today will better protect air quality and the environment by more accurately quantifying SORE emissions and ensuring SORE introduced into California commerce are emissions compliant.

The amendments that align ARB requirements with U.S. EPA requirements to the extent possible have no adverse environmental impacts because testing laboratories already conduct the tests for certification with U.S. EPA, so there is no need to upgrade facilities.

Lastly, the amendments that clarify and streamline SORE certification and test procedures are administrative in nature and have no potential to adversely affect air quality or any other environmental resource areas.

Table IV-1. VOC Thresholds and Attainment Status for California Air Districts.

Air Basin	Air District	VOC or ROC or ROG Threshold	California Ozone Attainment Status	Federal Ozone Attainment Status
North Central Coast	Monterey Bay	137 lbs/day	Nonattainment	Attainment
South Central Coast	Santa Barbara County	55 lbs/day	Nonattainment	Attainment/ Unclassified
	Ventura County	25 lbs/day; 5 lbs/day in the Ojai Planning Area	Attainment	Nonattainment (Serious)
South Coast	South Coast	55 lbs/day	Nonattainment	Nonattainment (extreme)
Sacramento Valley	Butte	25 lbs/day	Nonattainment	Nonattainment (marginal)
	Feather River	25 lbs/day	Nonattainment	Nonattainment (Severe)
	Sacramento	65 lbs/day	Nonattainment	Nonattainment (Severe)
	Tehama	>25 lbs/day w/ feasible mitigation; >137 lbs/day EIR w/ offsite mitigation	Nonattainment	Attainment/ Unclassified
	Yolo-Solano	10 tpy	Nonattainment	Nonattainment (Severe)
San Joaquin Valley	San Joaquin Valley	10 tpy	Nonattainment	Nonattainment (extreme)

Therefore, it can be seen with certainty that there is no possibility that the proposed regulatory amendments may result in a significant adverse impact on the environment. Further, the proposed action is designed to protect the environment and ARB found no substantial evidence indicating the proposal could adversely affect air quality or any other environmental resource area, or that any of the exceptions to the exemption applies (14 CCR 15300.2). Therefore, this activity is exempt from CEQA.

V. ENVIRONMENTAL JUSTICE

State law defines environmental justice as the fair treatment of people of all races,cultures, and incomes with respect to the development, adoption, implementationand enforcement of environmental laws, regulations, and policies. Government Code Section 65040.12, subdivision (c), commits ARB to making environmental justice an integral part of its activities. The Board approved its Environmental Justice Policies and Actions (Policies) on December 13, 2001, to establish a framework for incorporating environmental justice into ARB's programs consistent with the directives of State law (ARB 2001). These Policies apply to all communities in California, but recognize that environmental justice issues have been raised more in the context of low-income and minority communities.

Over the past 25 years ARB, air districts, and federal air pollution control programs have made substantial progress towards improving air quality in California. However, some communities continue to experience higher exposures than others as a result of the cumulative impacts of air pollution from multiple mobile and stationary sources and thus may suffer a disproportionate level of adverse health effects. To address this, the Board has established a framework for incorporating environmental justice into ARB programs. The proposed amendments to SORE evaporative requirements would apply uniformly to SORE equipment used in all regions of the State. The amendments would serve to improve compliance of SORE equipment, thus helping to reduce ROG emissions and improve air quality statewide. All communities, including environmental justice communities, will experience the air quality benefits associated with this proposal. Alternatives to the proposed regulations, discussed in Section VII, would also affect all communities throughout the State.

VI. ECONOMIC IMPACTS ANALYSIS/ASSESSMENT

A. Non-Major Regulations that will Not Have a Significant Adverse Economic Impact on Business

1. Summary

These regulations are not expected to have a significant adverse economic impact on business, as shown by the evidence and analysis discussed in detail below and in the accompanying Fiscal and Economic Impact Analysis. The statewide total cost of the proposed amendments, in 2016 dollars, is approximately $32.7 million over five years. This cost represents a worst-case scenario under which the highest estimated net annual cost to out-of-state Executive Order holders is passed on to California consumers with a

75 percent mark-up on Executive Order holders' net costs. The highest cost in one year, in 2016 dollars, is approximately $8.0 million, also assuming the net cost to out-of-state Executive Order holders is passed on to California consumers with a 75 percent mark-up on Executive Order holders' net costs. The total direct benefits in a model year are expected to be up to $2.4 million. The total direct benefits in five years are expected to be up to $6.4 million. Taking into account the costs and benefits, the proposed amendments would result in a retail price increase of $3.68 per evaporative emission control system. The actual total costs are likely to be spread across all 50 states, since most evaporative families in California are the same ones sold nationwide. The small retail price increase, broad distribution of the costs, and anticipated benefits will together avoid a significant adverse economic impact on business. The fiscal and economic impact analysis of the proposed regulatory changes are described here and in the accompanying Fiscal and Economic Impact Analysis Form 399, and related supporting documents, which are included as part of this Initial Statement of Reasons.

2. Regulatory Costs and Benefits

a. Direct Costs

The incremental cost increase in an evaporative system was estimated by taking into account higher testing and certification costs, limited-term certification, labeling costs, reporting costs, and increased use of certified fuel lines. The highest annual cost resulting from these requirements was used to estimate a maximum price increase per evaporative system, which will be passed on to California consumers.

i. Higher Testing Costs

Changes to TP-901 may result in an increased cost per five-sample certification test. The cost increase will depend on the type of fuel tank and the configuration of the evaporative system in which it is used. Estimates for the cost increase were provided on an anonymous basis by several laboratories that perform SORE fuel tank testing. Some elements of TP-901 may cost applicants less under the proposed amendments than under the current regulations, while others will cost more under the proposed amendments. The average cost increase or savings, as estimated by the test laboratories, for each element of TP-901 that is affected by the amendments is listed in Table VI-1.

For an applicant whose fuel tank experiences pressure changes during operation, there will not likely be any cost increase for the pressure test. However, since the revised TP-901 requires applicants to consider potential pressure changes during storage as well, it was assumed that some applicants who did not have to

perform the pressure test under the current regulations would have to perform the pressure test under the revised TP-901. The cost increase associated with the slosh test is minimal because the revised slosh test is similar to the existing slosh test but will take longer. The costs for the ultraviolet radiation exposure test and the fuel cap installation cycling test are new costs because those tests were added to the durability demonstration. There is a potential cost savings for sealing the fuel tanks because fuel tanks will be sealed with fuel caps instead of fusion welding a coupon over the filler neck. Additional unquantified benefits of sealing fuel tanks with a fuel cap is that applicants will not have to spend time fixing any leaks that occur from improper sealing of coupons on the filler neck or lose time spent preconditioning a tank that subsequently fails testing due to an improperly sealed filler neck coupon.

Table VI-1. Fuel Tank Testing Cost Increase

Test Element	Potential Cost Savings	Potential Cost Increase
Pressure Test		$4,700
Slosh Test		$100
UV Test		$1,400
Fuel Cap Test		$1,200
Sealing	$100	
Permeation Test	$4,100	

There is a large potential cost savings for the permeation test due to addition of the option to stop testing after 10 days if the measured permeation rate is less than 50 percent of the emission standard and the upper limit of the 95 percent confidence interval is below the emission standard. The current permeation test in TP-901 requires the test to continue until the coefficient of determination is 0.95 or greater. An applicant whose fuel tanks have measured permeation emissions less than half the emission standard and meet the confidence interval requirement after ten days could stop the test under the revised TP-901, but would have to continue under the current TP-901. It was assumed that an applicant might test up to 20 days under either version of TP-901. The cost savings was estimated based on an applicant who would have tested for 20 days under the current TP-901 but could stop testing after 10 days under the revised TP-901.

The slosh test and fuel cap installation cycle requirements will increase the cost of any test, so the total potential savings for a whole test will be less than the savings for sealing and permeation testing. The total savings could be $2,900 per 5-sample test. The total potential cost increase could be $7,300 per 5-sample test. For the years 2011 through 2015, an average of eight fuel tank

certification applications have been received by ARB. Assuming a similar rate upon implementation of the proposed amendments, the total cost would range from a savings of $23,200 to a cost of $58,400 in a model year.

Changes to TP-902 will likely result in increased costs for diurnal emission testing. As with fuel tank testing, the amount of the cost increase will depend on the configuration of the evaporative system of the test unit. The average cost increase, estimated by the same test laboratories who provided information for fuel tank testing, for each affected element of TP-902 is provided in Table VI-2.

Table VI-2. Diurnal Emission Testing Cost Increase

Test Element	Potential Cost Increase
Pressure Test	$1,100
UV Test	$1,100
Fuel Cap Test	$200
Ethanol measurement	$200

As with fuel tank testing, for an applicant whose fuel tank experiences pressure changes during operation, there will not likely be any cost increase for the pressure test. However, since the revised TP-902 requires applicants to consider potential pressure changes during storage as well, it was assumed that some applicants who did not have to perform the pressure test under the current regulations would have to perform the pressure test under the revised TP-902. The cost increase associated with the slosh test is minimal because the revised slosh test is similar to the existing slosh test but will take longer. The costs for the ultraviolet radiation exposure test and the fuel cap installation cycling test are new costs because those tests were added to the durability demonstration. It is not necessary for an applicant to measure ethanol separately, because a correction factor of 1.08 can be applied to the mass reported by the flame ionization detector to account for the weaker response to ethanol. However, a potential cost increase associated with ethanol measurements is included because an applicant may choose to measure it separately. The total potential cost increase could be $2,600 per diurnal emission test under the revised TP-902. Assuming 10 evaporative families are tested in one model year because they are new or have been modified, the total cost would be up to $26,000 due to the higher per-test cost.

ii. Additional Testing Costs

The proposed amendments will result in additional direct costs to Holders through additional testing. Table VI-3 summarizes the

additional testing that may occur as a result of the proposed amendments and the associated cost.

Elimination of Small Production-Volume Tank Exemption

The costs presented in Table VI-3 were estimated based on the number of certified evaporative families and evaporative components for model year 2015, since certification is ongoing for model year 2016. It was estimated that elimination of the small production volume tank exemption could result in the need for 26 fuel tanks to be tested for certification. This is the number of evaporative families using the exemption that are not using certified fuel tanks.

Table VI-3. Additional Testing Costs Under the Proposed Amendments

Test	Reason for Additional Testing	Potential Cost Savings	Potential Cost Increase
TP-901	Elimination of small production volume tank exemption		$691,600
	Elimination of low permeation tank exemption		$478,800
	Certification with E10 fuel		$1,330,000
	Combining ≤ 80 cc by fuel tank type	$3,059,000	
TP-902	EMEL testing for multiple fuel tank volumes		$202,800
	Elimination of equivalent fuel tank replacement		$84,500
Fuel Line	Permeation standard for ≤ 80 cc		$168,000
	Certification with E10 fuel		$244,800

Elimination of Low Permeation Tank Exemption

Elimination of the low permeation tank exemption for ≤ 80 cc evaporative families could result in 18 fuel tanks needed to be certified. While there are 95 evaporative families using this exemption, many of those 95 are certified by the same manufacturers and use the same type of fuel tank. They could be grouped into 18 evaporative families if each manufacturer grouped fuel tanks of the same type into one evaporative family. If the use of the current data carry across provision is any indication, Holders will group their models into as few evaporative families as possible to minimize testing and certification costs. The new provision to include all models using the same fuel tank type in one evaporative family for ≤ 80 cc evaporative systems could result in 115 fewer fuel tank tests in a model year. This assumes that Holders will group their models into as few evaporative families as possible, and does not count any

of the evaporative families previously exempt under the low permeation tank exemption.

Four-Year Evaporative Component Certification Renewal

The current requirements in CP-901 allow for data carryover at the Executive Officer's discretion, and the economic analysis in the 2003 Initial Statement of Reasons for the SORE exhaust and evaporative emissions regulations assumed that changes to product designs would require manufacturers to measure permeation emissions every three years. New testing would be required under the current regulations if a change that could affect evaporative emissions were made to an evaporative component. Therefore, requiring certification renewal does not impose new testing costs for evaporative components.

Certification of Fuel Tanks with E10 Fuel

Certification with the updated certification test fuel (E10) will require additional fuel tank testing for some currently certified fuel tanks, since those fuel tanks would have continued to be used on SORE beyond model year 2019 if the proposed amendments did not update the certification test fuel. It was estimated that 50 of the currently-certified fuel tanks would have to be tested for certification with E10 fuel. The total cost of this additional testing is $1,330,000.

EMEL Testing

Requiring an EMEL to be declared for each model in an evaporative family will not necessitate additional diurnal emission testing. Holders will likely continue to determine which model in the evaporative family is expected to exhibit the highest diurnal emissions relative to the applicable diurnal emission standard by considering such factors as fuel tank volume and fuel line length if all other evaporative system components are shared throughout the evaporative family. However, some Holders may choose to test more than one model in an evaporative family to set EMELs and determine which model must be used to calculate the EFELD for the purpose of calculating diurnal emission credits. There are 12 performance-certified evaporative families in 2015 that have set an EMEL and also have more than one fuel tank volume. It was conservatively estimated that the Holder for each of these 12 evaporative families would test a second model for the purpose of setting EMELs in a given model year, resulting in an additional cost of $202,800.

Elimination of Equivalent Fuel Tank Provision

Eliminating the provision in the current section 2753(c) to replace a "nominal fuel tank" with an "equivalent fuel tank" may result in additional diurnal emission testing costs. A Holder could simply notify the Executive Officer of the replacement of a "nominal fuel tank" with an "equivalent fuel tank" under the current requirements. However, this provision has rarely been used, likely because Holders do not need to replace the fuel tank on their products during a model year. Replacing a fuel tank under the proposed requirements would be a change that would require diurnal emission testing to ensure the evaporative family still meets the applicable diurnal emission standard. It was conservatively estimated that the Holders for five evaporative families might have to conduct additional diurnal emission testing due to replacing a fuel tank in a given model year, resulting in an additional cost of $84,500.

Fuel Line Permeation Emission Standard

The proposed fuel line permeation emission standard for ≤ 80 cc evaporative families may necessitate additional testing. Low permeation fuel lines are already required for U.S. EPA certification of ≤ 80 cc evaporative systems, and many ≤ 80 cc evaporative families sold in California use ARB-certified fuel lines for the lines that carry liquid fuel from the fuel tank to the carburetor. However, there may be some evaporative families that would have to certify fuel lines to comply with the emission standard. It was assumed that each of the 35 Holders of Executive Orders for ≤ 80 evaporative families might have to certify a fuel line family. This would result in $168,000 in additional testing costs.

Certification of Fuel Lines with E10 Fuel

Although currently-certified fuel lines may have been tested with one of the fuels required for certification under the proposed amendments, they have been tested according to an older version the SAE J1737 test procedure. It is estimated that 51 currently-certified fuel lines (in addition to the 35 that may be newly certified, discussed in the previous paragraph) will be tested for certification with E10 fuel, for a total cost of $244,800.

iii. Additional Certification Costs

The proposed amendments may result in increased costs for certification through the need to submit additional certification applications, posting bonds, and the possibility of the Executive

Officer requiring an applicant to submit a sample evaporative system installed on an engine for inspection as part of the certification application. Table VI-4 summarizes the additional certification costs that may be incurred as a result of the proposed amendments.

Allowing ≤ 80 cc models with the same fuel tank type to be included in the same evaporative family could result in a decrease in the number of evaporative families, with as few as one evaporative family per Holder for each fuel tank type. This would reduce the number of ≤ 80 cc evaporative families, and consequently certification applications, by 192 compared to 2015. Assuming it costs $2,000 for an applicant to prepare a certification application or pay a third party to prepare the application, this would result in $384,000 in cost savings. Certification renewal every four years for fuel tanks, fuel lines, and carbon canisters will also necessitate additional certification applications for these components. Between the currently certified components that were used in 2015 and the additional components that are expected to be certified as a result of the proposed amendments, it was estimated that up to 253 evaporative components might have to be certified every four years, for an added cost of $506,000.

Table VI-4. Additional Certification Costs Under the Proposed Amendments

Category	Reason for Additional Cost	Potential Cost Savings	Potential Cost Increase
Certification Application	Combining ≤ 80 cc by fuel tank type	$384,000	
	4-year certification renewal for evaporative components		$506,000
	Elimination of equivalent fuel tank replacement		$10,000
Equipment and Shipping	Sample submission with certification application		$420,000
Bonds	Cost to Secure a Bond		$2,702,300

A Holder who replaces a fuel tank during a model year would have to submit a revised certification application after conducting testing with the new fuel tank. It was assumed this might affect five evaporative families in a given model year, for an additional cost of $10,000. Sending a sample evaporative system installed on an engine or equipment unit to ARB for inspection would be an added cost for Holders, because they would have to pay for shipping of the sample. Although the sample could be returned, it was assumed that it might not be sold to a consumer. The price of an assembled engine or equipment unit varies widely, from about $70 for a low-end handheld product or generator to several thousand dollars for some riding lawn

mowers or specialty vehicles. It was estimated that, on average, it would cost $1,000 or less for shipping and the equipment to send samples to ARB for inspection during the application process. With an estimated 420 evaporative families after implementation of the proposed amendments, the added cost would be up to $420,000.

Executive Order holders who do not have long-term U.S. assets meeting the applicable threshold of $3 million or $10 million in section 2774 will be required to post a bond to cover potential compliance- or enforcement-related obligations. It was determined that those Executive Order holders who are required to post a bond to meet the requirements of 40 CFR Part 1054.690 would also have to post a bond to meet the requirements of section 2774. To estimate the total value of the required bonds, projected sales as reported by the affected Executive Order holders for model year 2015 used, subject to the minimum values and thresholds in section 2774. A total of $90,075,000 was calculated. It was estimated that an Executive Order holder would pay three percent of the bond value annually to maintain the bond, based on the assumption that Executive Order holders' credit would range from excellent to average. Therefore, the total annual cost for all affected Executive Order holders to maintain bonds required by section 2774 would be $2,702,300. Affected Executive Order holders will be required to post bonds beginning with model year 2020, so there is no cost for model year 2018 or 2019. The total cost for affected Executive Order holders to maintain bonds over five years will be three times the annual cost, or $8,106,900.

iv. Other Direct Costs

The proposed amendments may result in direct costs other than the testing and certification costs. These costs may include labeling, reporting, compliance testing, and fuel lines, and they are summarized in Table VI-5.

Emission Labels

Most certified evaporative components already are labeled with the Executive Order number, manufacturer name or trademark, and model or part number. However, it was assumed that up to 253 evaporative component labels would have to be modified under the proposed amendments, for a total cost of $25,300. It may also be necessary for some Holders to make small changes to the way their evaporative systems are assembled to ensure the evaporative component labels are readily visible. For example, ARB staff has observed that fuel lines are often installed with the labeled side

facing toward a nearby engine part, out of the line of sight of an observer. Rotating these fuel lines by 90° would make the writing readily visible so ARB staff could confirm the same fuel lines that are on the Executive Order are installed on the sample being inspected. The cost of this change would be negligible. Similarly, where parts of a fuel tank are covered by the body or engine of a unit, the label or marking could be placed in a location that is readily visible. There may be other changes, however, that would be more significant. A Holder may have to use fasteners that can be removed without the use of tools rather than ones that require the use of a screwdriver, for example. The total cost estimated for these changes, assuming it would cost an average of $1,000 per evaporative family, is $420,000.

Table VI-5. Other Direct Costs Under the Proposed Amendments

Category	Reason for Additional Cost	Potential Cost Savings	Potential Cost Increase
Emission Labels	Label content requirements for components		$25,300
	Ensuring visibility		$420,000
Sales Reports	Required for all evaporative families		$782,000
Compliance Testing	Alignment with certification requirements	$1,392,000	
Fuel Lines	Using certified lines for ≤ 80 cc, vapor, and return; secure connections		$887,200
Fuel Caps	Modifications to reduce fuel cap permeation emissions		$506,200

Sales Reports

The current regulations require Holders participating in the averaging and banking program to submit sales reports for the relevant evaporative families. There were 29 participating evaporative families in 2015. The proposed amendments will require Holders to submit sales reports for all evaporative families. The estimated cost for the other 391 evaporative families is $782,000.

Compliance Testing

The current regulations require an Executive Order holder to make available five units for compliance testing at the Executive Officer's request, but an Executive Order holder tests only one unit for certification of evaporative systems. The proposed amendments will align these requirements, with one unit required for certification testing and one for compliance testing. This change could result in cost savings up to $1,392,000 for Executive Order holders, assuming the same average cost of $1,000 per unit for the equipment and shipping that was used for calculating the cost of submitting a sample evaporative system during the certification process.

Fuel Lines

There may be additional costs due to the requirement to use certified fuel lines for ≤ 80 cc evaporative families and for fuel lines such as those used to connect fuel tanks to carbon canisters or those used to return unused fuel from the carburetor to the fuel tank. Many ≤ 80 cc evaporative families already use certified fuel lines at least for the fuel lines that carry liquid fuel from the fuel tank to the carburetor. Some evaporative families also use certified fuel lines to connect the fuel tank to the carbon canister, but there are some evaporative families that will have to use certified fuel lines where uncertified fuel lines have been used previously. It was estimated that the cost per evaporative system could be up to $0.50 to use certified fuel lines, for a total cost of $887,200 in a given model year.

Fuel Caps

The revised TP-901 requires fuel tanks to be tested with fuel caps in place, which may increase overall permeation emissions during the test. The average permeation rate measured in certification testing for the certified fuel tanks that were used on model year 2015 SORE is 0.66 $g \cdot m^{-2} \cdot day^{-1}$, with the fuel tanks sealed without the fuel cap. This is only 44 percent of the fuel tank permeation emission standard for fuel tanks on engines with displacement greater than 80 cc, and 33 percent of the fuel tank permeation emission standard for fuel tanks on engines with displacement less than or equal to 80 cc. Some fuel tanks, especially those with more surface area and therefore a higher permeation emission standard, will not need to be modified in any way to meet the permeation emission standard when tested with LEV III fuel and a fuel cap in place.

However, other Executive Order holders with small fuel tanks use fuel caps whose permeation rates are as high as 50 $g \cdot m^{-2} \cdot day^{-1}$. As

a result, some fuel caps may need to be modified to enable the fuel tanks on which they are used to meet the permeation emission standards. It was estimated that all fuel caps for fuel tanks on engines with displacement less than or equal to 80 cc would have to be modified at an average cost of $1.00 per fuel cap. This is estimated to cover the cost of changing from a nitrile rubber gasket to a fluoropolymer gasket to reduce permeation through the gasket, treating the fuel cap (e.g., through fluorination) to make it more resistant to permeation, or changing to a lower-permeation fuel cap where a compatible substitute exists. Approximately 506,200 engines of this size were sold in California in model year 2014, as reported by Executive Order holders, so the total annual cost to address this new requirement is estimated to be $506,200.

v. Total Direct Costs

The total direct costs that may result from the proposed amendments are summarized in Table VI-6. Not all of the costs presented in Tables VI-1 through VI-5 are incorporated into Table VI-6 because doing so would count some costs more than once. All of the costs in Table VI-6 are assumed to be equal in each year except the emission labeling costs, which are assumed to be a one-time cost that would occur in one model year.

Table VI-6. Total Direct Costs from the Proposed Amendments

Category of Additional Cost	Potential Cost Increase in One Year	Potential Cost Increase Over Five Years
Diurnal Emission Testing (TP-902)	$313,300	$1,566,500
Fuel Tank Testing (TP-901)	$957,500	$2,792,500
Fuel Line Testing	$206,400	$412,800
Component Certification Applications	$126,500	$632,500
Certification Application Revisions	$10,000	$50,000
Sample Evaporative System Submission	$420,000	$2,100,000
Emission Labels	$445,300	$445,300
Sales Reports	$391,000	$1,955,000
Bonds	$2,702,300	$8,106,900
Fuel Lines	$887,200	$4,436,000
Fuel Caps	$506,200	$2,531,000
Total Cost	**$6,965,700**	**$25,028,500**

The diurnal emission testing cost includes the incremental cost increase for 10 evaporative families in one model year due to the

changes proposed for TP-902 and the full cost of tests for 17 evaporative families for additional testing under the proposed amendments. Up to five additional tests are expected in a model year as a result of fuel tank replacement and 12 are expected for testing associated with setting EMELs. The expected cost is $16,893 per test, or $287,300 in a model year for 17 additional diurnal emission tests. The total cost increase for diurnal emission testing is $313,300 in one year, and $1,566,500 in five years. The fuel tank testing cost includes the incremental cost increase for 8 fuel tanks to be certified in a model year and the additional testing costs for fuel tanks as a result of eliminating the small production volume tank exemption and low permeation tank exemption. It is expected that 26 fuel tanks would be certified as a result of eliminating the small production volume tank exemption, and 18 would be certified as a result of eliminating the low permeation tank exemption, for a total of 44. The expected cost is $26,600 per test, for a total of $1,170,500 for additional testing over five years. The total cost increase for fuel tank testing is expected to be $957,500 in one year, and $2,792,500 in five years.

It was estimated that Holders may have to submit five additional certification applications when replacing fuel tanks during a model year and 253 certification applications for evaporative component recertification every four years. The estimated cost is $2,000 per application. The total cost increase in one model year is expected to be $126,500 for components and $10,000 for evaporative families, since the applications for evaporative components are expected to be spread over four model years. Some evaporative components will have to be certified a second time in a five year period, so the total cost increase for evaporative component certification in five years is five times the cost in one year, or $632,500. The total cost increase in five years for evaporative families as a result of fuel tank replacement is $50,000. The expected cost for submitting sample evaporative systems is $420,000 in a model year, and $2,100,000 in five years. Additional labeling costs are expected to total $445,300 in one year; the cost for five years is expected to be the same, since this will be a one-time cost. Sales reporting costs are expected to total $391,000 in a model year, and $1,955,000 in five years. Costs for all affected Executive Order holders to maintain bonds required by section 2774 are expected to be up to $2,702,300 per year, or up to $8,106,900 in five years (because bonds will be required starting in 2020). The cost of installing certified fuel lines where they haven't been used previously is expected to be $887,200 in a model year, and $4,436,000 in five years.

Based on the analysis above, the total direct cost to Executive Order holders in a model year could be up to $6,965,700. The total cost to Executive Order holders in five years could be up to $25,028,500.

b. Direct Benefits

The proposed amendments do not provide any new direct emissions reduction benefits. However, cost savings will occur as a result of the proposed amendments. The direct benefits from expected cost savings are summarized in Table VI-7. Allowing all of a Holder's models with displacement ≤ 80 cc using the same fuel tank type to be included in one evaporative family will result in up to 192 fewer fuel tank tests and fewer certification applications. The fuel tanks would potentially have been tested every model year under the current regulations, but most likely would only be tested once in a five year period if they were not allowed to be grouped by fuel tank type. The expected savings is up to $26,600 per test, for a total of $3,059,000 or $611,800 in one year. The certification applications would otherwise have to be submitted every year. The expected savings is $2,000 per application, or $384,000 in one year and $1,920,000 in five years. It is also possible that testing fuel tanks in a SHED according to section 12 of the revised TP-901 would result in cost savings, but it is not known whether any applicants will choose this method rather than the gravimetric permeation test in section 11 of TP-901. Only the costs for the gravimetric permeation test are considered here, and any cost savings associated with testing fuel tanks in a SHED are not considered in this analysis.

Table VI-7. Direct Benefits from the Proposed Amendments

Category of Benefit	Reason for Benefit	Potential Cost Savings in One Year	Potential Cost Savings in Five Years
Fuel Tank Testing (TP-901)	Combining ≤ 80 cc by fuel tank type	$610,949	$3,054,745
Certification Applications	Combining ≤ 80 cc by fuel tank type	$384,000	$1,920,000
Compliance Testing	Alignment with certification requirements	$1,392,000	$1,392,000
Total Cost Savings		**$2,386,949**	**$6,366,745**

The current regulations require a Holder to make available five units for compliance testing at the Executive Officer's request, but a Holder tests only one unit for certification of evaporative systems. The proposed amendments will align these requirements, with one unit required for certification testing and one for compliance testing. This change could result in cost savings up to $1,392,000 for Holders, assuming the same

average cost of $1,000 per unit for the equipment and shipping that was used for calculating the cost of submitting a sample evaporative system during the certification process. This also assumes that each evaporative family for engines with displacement greater than 80 cc would be subjected to compliance testing once in a five year period. The total direct benefits in a model year are expected to be up to $2,387,800. The total direct benefits in five years are expected to be up to $6,371,000.

The overall cost of the proposed amendments is the total direct cost to Executive Order holders minus the total direct benefit. Assuming that mark-ups from Executive Order holders, other manufacturers, distributors, and retail stores total 75%, as was done when the 2003 SORE evaporative emissions regulations were adopted, the total cost over five years that would be passed on to consumers would be ($25,028,500 – $6,366,745) × 175% = $32,650,600. Annual sales of SORE in California were estimated from reports submitted to ARB by SORE engine manufacturers to be about 1.77 million units in 2014. Assuming similar sales when the proposed amendments are implemented, the maximum average retail price increase per unit would be $3.68 based on the five-year costs passed on to consumers.

In terms of the percentage of retail price, the increase could range from approximately $3.68 ÷ $70 = 5.3 percent for a low-end string trimmer to $3.68 ÷ $5,000 = 0.1 percent for a commercial zero-turn riding mower. However, many Executive Order holders produce engines or equipment at a variety of price points, so the actual retail price increase, if there is any, will likely be proportional to the current retail price, with a smaller price increase for a $70 string trimmer than for a $5,000 commercial zero-turn riding mower.

c. Cost-Effectiveness

The proposed amendments do not allow for a cost-effectiveness calculation, since there are no direct quantifiable emissions reductions. The proposed amendments are intended to increase the compliance rate of SORE with the existing evaporative emission standards and prevent the introduction into California of evaporative systems that do not comply with those emission standards. The fuel used for certification testing will also be updated to match what is commercially available, so measured evaporative emissions rates from SORE will more accurately reflect real-world emissions.

d. Affected Businesses (in California)

The proposed regulatory amendments are not likely to affect the creation, expansion, or elimination of any California businesses. The types of businesses that would potentially be affected include SORE engine, equipment, and component manufacturers, retailers, and testing laboratories. The costs associated with the proposed amendments are small compared to the price of SORE equipment, and they will likely be passed on to consumers.

3. Economic Impact Analysis

a. Impact on Jobs

The proposed amendments are not expected to create or eliminate jobs in California. Most SORE manufacturing facilities are located outside of California, and most testing laboratories are also located outside of California. Those manufacturing facilities that are in California are not expected to be affected significantly because costs are expected to be passed on to consumers in the form of a modest retail price increase. Testing laboratories may have increased demand for their services, but it is not expected to necessitate additional testing personnel. The potential increase in retail price is not expected to affect the retail sales of SORE equipment.

b. Impact on Businesses

The impact on California businesses is expected to be minimal, as discussed above in section VI.A.3.a. The proposed amendments will not create, expand, or eliminate businesses in California.

c. Impact on Small Businesses

The impact on small businesses in California is also expected to be minimal. Retail sales are not expected to change as a result of the proposed amendments.

d. Impact to Health and Welfare of California Residents

The proposed amendments do not directly reduce criteria pollutant emissions. They will, however, help to ensure previously claimed emissions reductions are realized by increasing compliance with the existing emission standards. There are no direct impacts, either negative or positive, on health or welfare of California residents, worker safety, or California's environment associated with the proposed amendments.

4. Information Relied Upon for Economic Assessment

Information relied upon for this economic assessment includes price quotes for testing services provided in May 2016 by test laboratories. These quotes were provided on a confidential basis, and the costs used in the economic assessment were averages from the quotes. Data submitted by applicants and Holders to ARB as required by the SORE regulations were also used to estimate the number of affected evaporative families and evaporative components for some of the costs and benefits of the proposed amendments. Annual sales of SORE in California were estimated using production line testing reports submitted by engine manufacturers to ARB as required in the SORE exhaust emissions regulations. Projected sales figures reported by Executive Order holders in certification applications were used to estimate bond amounts for affected Executive Order holders.

B. Major Regulations

For purposes of this section, "Major Regulation" means any proposed adoption, amendment, or repeal of a regulation that will have an economic impact on the state's business enterprises and individuals in an amount exceeding fifty million dollars ($50,000,000), as estimated by the board, department, or office within the agency proposing to adopt the regulation. As previously shown in section VI.A.2.v, the proposed regulatory amendments do not cost more than $7.0 million in any one year of implementation or compliance, and therefore the proposed regulatory amendments do not meet the major regulation threshold of $50 million as specified in California Government Code section 11342.548.

VII. EVALUATION OF REGULATORY ALTERNATIVES

California Government Code section 11346.2 requires ARB to consider and evaluate reasonable alternatives to the proposed regulatory action and provide reasons for rejecting those alternatives. This section discusses alternatives evaluated and provides reasons why these alternatives were not included in the proposal. ARB staff did not find any of the alternatives considered to be more effective in carrying out the purpose for which the proposed regulatory action is proposed or to be as effective as or less burdensome to affected businesses than the proposal.

An analysis of the alternatives to the proposed SORE regulation amendments is presented below. Staff analyzed three alternatives to ARB's existing SORE regulations:

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219 Cal.App.3d 422 (1990)
268 Cal. Rptr. 244

RAYMOND E. GRIER, Plaintiff and Respondent,

v.

KENNETH KIZER, as Director, etc., et al., Defendants and Appellants.

Docket No. B036081.

Court of Appeals of California, Second District, Division Three.

April 2, 1990.

427 *427 COUNSEL

John K. Van de Kamp, Attorney General, Charlton G. Holland III, Assistant Attorney General, Stephanie Wald and Harlan E. Van Wye, Deputy Attorneys General, for Defendants and Appellants.

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OPINION

KLEIN, P.J.

Defendants and appellants Kenneth **Kizer**, Director of the Department of Health Services, State of California (Director), and the Department of Health Services, State of California (Department) (sometimes collectively referred to as Department), appeal a judgment granting plaintiff and respondent Dr. Raymond E. **Grier's** (**Grier**) petition for writ of administrative mandamus (Code Civ. Proc., § 1094.5). **Grier's** petition successfully challenged an administrative determination that he overcharged the Department. We affirm the judgment.

SUMMARY STATEMENT

The Department used an in-house random sampling and extrapolation method to audit the claims for payment of physicians who were Medi-Cal providers. The Department viewed this method of auditing as consistent with accepted auditing principles and as a rule of internal management; as such, the auditing procedure was exempt from the necessity of promulgating a regulation pursuant to the Administrative Procedure Act (APA). (Gov. Code, §§ 11340 et seq., 11370).[1]

After losing at the administrative level, **Grier**, one of the physicians, filed a petition for writ of administrative mandamus to challenge the Department's audit of his claims on the grounds, inter alia, the method utilized was in violation of the APA and thus void and unenforceable.

While the petition for writ was pending, the Office of Administrative Law (OAL), the state agency charged with
428 reviewing proposed administrative *428 regulations, determined the Department's audit procedure to be the subject of a regulation within the contemplation of section 11342, subdivision (b). Therefore, because the audit technique had not been duly adopted as a regulation pursuant to the APA, the OAL deemed it to be an invalid and unenforceable "underground" regulation.[2]

The OAL's determination in this regard is entitled to due deference. Further, case law holds that where an agency's rule is of general application, as contrasted with dealing with matters relating solely to the management of an agency's internal affairs, the rule becomes the subject of a regulation, which regulation must be adopted pursuant to APA standards.

We find the Department's random sampling audit method was a standard of general application to all Medi-Cal providers and should have been promulgated as a regulation in accordance with the APA. We affirm the judgment.

FACTUAL & PROCEDURAL BACKGROUND

Grier was a provider under the Medi-Cal program. In August or September of 1982, the Department audited claims for payment filed by **Grier** during the period between December 1980 and March 1982. The total amount paid to **Grier** for the period was $932,642.

Fan Yee (Yee), an operations research specialist for the Department, developed a random sampling plan to audit physician claims. As to **Grier**, Yee selected a sample size of 200 pages from a 9,711-page record of all claims for services rendered to Medi-Cal beneficiaries by **Grier** during the period in question and submitted for payment.

After the selected samples were audited, the audit results were extrapolated, which process disclosed an estimated overpayment to **Grier** of $654,592, with a 95 percent confidence at a projection of plus or minus $16,344.

Grier filed an audit appeal with the Department. A hearing was held before the Department's administrative law judge (ALJ) on December 4, 1985. **Grier**, his expert, Dr. Michael Intriligator, and Yee testified. **Grier** testified as to the wide variety of patients seen in his practice. In his testimony, Intriligator attacked Yee's methodology, opining that in view of
429 the *429 heterogeneity of **Grier's** practice, a stratified sampling method would have yielded a more accurate result than simple random sampling.[3]

In an interlocutory decision adopted April 15, 1986, the Department held: "The appeal with respect to [the] Department's ability to offer as proof the sampling and extrapolation methods employed by the Department in this case is denied. However, the determination of the ultimate trustworthiness of the sample and extrapolation methodology in terms of the weight to be given the evidence is reserved until there has been a full hearing on the audit adjustments (possible sources of nonrandom error) and a recalculation of both the estimated overpayment and precision has been made."

On September 29, 1986, **Grier** filed a petition for writ of mandate, alleging, inter alia, the sampling methods utilized by the Department were arbitrary and capricious, there was no evidence to support the findings of the ALJ, and the ALJ employed by the Department was biased. **Grier** subsequently filed an amended petition, alleging the sampling methods adopted by the Department were in violation of the APA and thus void and unenforceable.

The Department's answer urged, inter alia, that **Grier's** challenge to its authority to use the subject sampling method was untimely. The Department also invoked Welfare and Institutions Code section 14170, requiring the Department to audit Medi-Cal providers in a manner consistent with accepted auditing practices, as sufficient authority for the method in issue.

During this time frame, the Union of American Physicians and Dentists requested the OAL to determine whether the Department's policy of using a statistical sampling and extrapolation method for determining overpayment when auditing physicians' claims constituted a regulation as defined in section 11342, subdivision (b).

After considering the Department's arguments, the OAL filed an opinion concluding: the challenged audit method was a regulation, none of the recognized exceptions to the APA rules was applicable, and because the method had not been duly adopted as a regulation and filed with the Secretary of State in accordance with the APA, it was invalid and unenforceable. (1987 OAL Determination No. 10 [Docket No. 86-016] Aug. 6, 1987.)

430 *430 The hearing on the petition for writ of mandate was held on April 6, 1988. The record of the administrative proceedings was received into evidence, arguments were presented and the matter was submitted.

The trial court ruled "the statistical methods utilized by [the Department] in this case are invalid and unenforceable for failure to comply with the requirements of the Administrative Procedure Act, Gov. Code Sections 11342 et seq., [*sic*] and as a separate and independent basis for judgment, having also determined that there is not substantial evidence to support the findings of fact of the Director ... that the statistical methods utilized by the Department in this case were valid or adequate[.]"

The trial court granted **Grier's** petition to set aside the Department's decision and ordered the Department to refrain from making any claim against **Grier** based upon the sampling and extrapolation methods utilized herein.

(1) (See fn. 4.) Following entry of judgment, the Department appealed.[4]

CONTENTIONS

The Department contends: (1) **Grier's** challenge to its authority to use statistical sampling audit techniques is untimely and therefore **Grier** has waived any right to challenge same; (2) **Grier's** challenge to its authority to utilize such method is without merit; (3) the subject sampling methodology is appropriate and valid; and (4) its application of the audit methodology was proper.

DISCUSSION

1. *Grier's challenge to the Department's authority to use the subject audit method is properly before this court.*

The Department contends **Grier's** challenge to its authority to use statistical sampling techniques is untimely because **Grier** did not make the argument at the administrative level but instead, first raised the issue in his petition for writ of mandate. The trial court properly rejected this argument.

(2) Futility is an exception to the exhaustion of administrative remedies doctrine. (*McKee* v. *Bell-Carter Olive Co.* (1986) 186 Cal. App.3d 1230, 1245 *431 [231 Cal. Rptr. 304].) Here, the Department consistently has maintained it
431 has the authority to utilize the audit method in issue, even after the OAL's 1987 determination which found the sampling method to be an invalid regulation. In view of the Department's unyielding position that it has statutory authority to audit providers by way of sampling and extrapolation, an administrative challenge by **Grier** based on the Department's failure to promulgate the regulation pursuant to the APA certainly would have been futile.

2. *OAL review of administrative regulations mandated by APA.*

The APA was enacted to establish basic minimum procedural requirements for the adoption, amendment or repeal of administrative regulations promulgated by the state's many administrative agencies. (Stats. 1947, ch. 1425, §§ 1, 11, pp. 2985, 2988; former Gov. Code § 11420, see now § 11346.) Its provisions are applicable to the exercise of any quasi-legislative power conferred by statute. (§ 11346.) The APA requires an agency, inter alia, to give notice of the proposed adoption, amendment or repeal of a regulation (§ 11346.4), to issue a statement of the specific purpose of the proposed action (§ 11346.7), and to afford interested persons the opportunity to present comments on the proposed action (§ 11346.8). Unless the agency promulgates a regulation in substantial compliance with the APA, the regulation is without legal effect. (*Armistead* v. *State Personnel Board* (1978) 22 Cal.3d 198, 204 [149 Cal. Rptr. 1, 583 P.2d 744].)

In 1979, the Legislature established the OAL and charged it with the orderly review of administrative regulations. In so doing, the Legislature cited an unprecedented growth in the number of administrative regulations being adopted by state agencies as well as the lack of a central office with the power and duty to review regulations to ensure they are written in a comprehensible manner, are authorized by statute and are consistent with other law. (§§ 11340, 11340.1, 11340.2)[5]

432 *432 The APA defines a regulation as "every rule, regulation, order, or standard [of] general application ... adopted by any state agency to implement, interpret, or make specific the law enforced or administered by it, or to govern its procedure, except one which relates only to the internal management of the state agency." (§ 11342, subd. (b).)[6]

Section 11347.5 thereof states: "(a) No state agency shall issue, utilize, enforce, or attempt to enforce any ... rule, which is a regulation as defined in subdivision (b) of Section 11342, unless the ... rule has been adopted as a regulation and filed with the Secretary of State pursuant to this chapter. [¶] (b) If the [OAL] is notified of, or on its own, learns of the issuance, enforcement of, or use of, ... [a] rule which has not been adopted as a regulation and filed with the Secretary of State pursuant to this chapter, the [OAL] may issue a determination as to whether the ... rule, is a regulation as defined in subdivision (b) of Section 11342."

OAL determinations as to whether a rule is a regulation are filed with the Secretary of State and published in the California Regulatory Notice Register. (§ 11347.5, subd. (c)).

Any interested person may obtain judicial review of a given determination by the OAL by filing a written petition with the court within 30 days of the date the determination is published requesting the determination of the OAL be modified or set aside. (§ 11347.5, subd. (d).) Also, if the OAL disapproves a proposed regulation submitted for its review, the adopting agency has recourse to the Governor, who may overrule an OAL decision disapproving a proposed regulation. (§ 11349.5.)

a. *Application of the APA to the Department.*

The California Medi-Cal Act explicitly makes the Department's rule making subject to the provisions of the APA. (Welf. & Inst. Code, §§ 14000 et seq., 14000.4, 14124.5.)

Welfare and Instutitions Code section 10725 provides in relevant part: "The director [of the Department] may adopt regulations, orders, or standards of general application to implement, interpret, or make specific the law enforced by the department, and such regulations, orders, and standards shall be adopted, amended, or repealed by the director only in accordance with the provisions of [the APA]...."

433 *433 Similarly, Welfare and Institutions Code section 14124.5, found within the Medi-Cal Act, states in pertinent part: "(a) The director may, in accordance with the provisions of Section 10725, adopt, amend or repeal, in accordance with [the APA], such reasonable rules and regulations as may be necessary or proper to carry out the purposes and intent of this chapter and to enable it to exercise the powers and perform the duties conferred upon it by this chapter, not inconsistent with any of the provisions of any statute of this state."[7]

Despite the clear directive of the above mentioned statutes, the Department argues that other sections of the Medi-Cal Act provide sufficient authorization for its use of the challenged audit method without the formality of regulation promulgation and OAL review.

The Department invokes, inter alia, Welfare and Institutions Code section 14170, which states in relevant part: "Amounts paid for services provided to Medi-Cal beneficiaries shall be audited by the department *in the manner and form prescribed by the department."* (Italics added.) The Department also cites Welfare and Institutions Code section 14133, as authorizing "(c) Postservice postpayment audit, which is review for medical necessity and program coverage after service was rendered and the claim paid. The department may take appropriate steps to recover payments made if subsequent investigation uncovers evidence that the claim should not have been paid."

(3) It is a fundamental rule of statutory construction that every statute should be construed with reference to the whole system of law of which it is a part so that all may be harmonized and have effect. (*Brown* v. *Superior Court* (1984) 37 Cal.3d 477, 484 [208 Cal. Rptr. 724, 691 P.2d 272].) Accordingly, while the above-cited sections and others authorize the Department to audit providers, these sections must be read in conjunction with the balance of the Medi-Cal scheme, specifically, Welfare and Institutions Code sections 10725 and 14124.5, which require the Department to comply with the APA in adopting regulations.

The issue to be determined by this court is whether the challenged audit method constitutes the subject of a regulation within the meaning of section 11342, subdivision (b), of the APA, or amounts only to an exempt internal management rule. If the method were properly the subject of a formal regulation, the Department's failure to comply with the APA would render the method invalid and unenforceable. (§ 11347.5.)

434 *434 **3. *Standard of appellate review.***

The trial court ruled the Department's use of the subject statistical method was invalid for failure to comply with the requirements of the APA.

(4) Review of that decision is a question of law for this court's independent determination, namely, whether the Department's use of an audit method based on probability sampling and statistical extrapolation constitutes a regulation within the meaning of section 11342, subdivision (b). (See *California Teachers Assn.* v. *San Diego Community College Dist.* (1981) 28 Cal.3d 692, 699 [170 Cal. Rptr. 817, 621 P.2d 856]; *Shoban* v. *Board of Trustees* (1969) 276 Cal. App.2d 534, 541 [81 Cal. Rptr. 112].)

(5) While the issue ultimately is one of law for this court, "the contemporaneous administrative construction of [a statute] by those charged with its enforcement and interpretation is entitled to great weight, and courts generally will not depart from such construction unless it is clearly erroneous or unauthorized. [Citations.]" (*Coca-Cola Co.* v. *State Bd. of Equalization* (1945) 25 Cal.2d 918, 921 [156 P.2d 1]; accord *Cannon* v. *Industrial Acc. Comm.* (1959) 53 Cal.2d 17, 22 [346 P.2d 1]; *Rivera* v. *City of Fresno* (1971) 6 Cal.3d 132, 140 [98 Cal. Rptr. 281, 490 P.2d 793].)

Because section 11347.5, subdivision (b), charges the OAL with interpreting whether an agency rule is a regulation as defined in section 11342, subdivision (b), we accord its determination due consideration.

4. *The Department's audit method should have been promulgated as a regulation pursuant to the APA.*

As indicated, the OAL filed an opinion concluding the challenged audit method amounted to a regulation within the meaning of the definition set forth in section 11342, subdivision (b).[8]

The OAL's analysis set forth a two-part test: "First, is the informal rule either a rule or standard of general application or a modification or supplement to such a rule? [¶] Second, does the informal rule either implement, interpret, or make specific the law enforced or administered by the agency or govern the agency's procedure?" (1987 OAL Determination No. 10, *supra*.)

The OAL concluded this particular audit method was a standard of general application "applied in every Medi-Cal case
435 reviewed by [Department] *435 audit teams and ... used to determine the amount of overpayment." Further, the method implemented Welfare and Institutions Code sections 14170 and 14133, which authorize the Department to audit providers and to take appropriate steps to recover overpayments. The Department thus had the rulemaking authority to adopt regulations concerning the use of probability sampling and statistical extrapolation, and was required to comply with the APA before utilizing such audit method. (1987 OAL Determination No. 10, *supra*.)

We accord due consideration to the OAL's determination and also examine case law which has construed the APA's definition of regulation. The case law, which is sparse, discloses generally that the definition of regulation is broad, as contrasted with the scope of the internal management exception, which is narrow.

a. *The Department's method is not entitled to deference as an administrative interpretation.*

(6) The Department urges that while the OAL's construction of the APA is entitled to deference, the probability sampling and extrapolation method should be given weight as the Department's administrative interpretation of the Medi-Cal Act.

In rejecting a similar contention, the Supreme Court in *Armistead* observed that a major aim of the APA was to provide a procedure whereby people to be affected by proposed regulatory action may be heard on the merits of proposed rules. (*Armistead* v. *State Personnel Board, supra,* 22 Cal.3d at p. 204.) "Yet we are here requested to give weight to [a rule] in a controversy that pits the [agency] against an individual member of exactly that class the APA sought to protect before rules like this are made effective. That, we think, would permit an agency to flout the APA by penalizing those who were entitled to notice and opportunity to be heard but received neither." (*Ibid.*)

The Department's argument is clearly answered by the *Armistead* rationale and therefore the audit method in issue merits no weight as an agency interpretation. (*Armistead, supra,* 22 Cal.3d at p. 205.) "To hold otherwise might help perpetuate the problem" of "`"house rules of the agency"'" which are promulgated without public notice, opportunity to be heard, filing with the Secretary of State, and publication in the California Code of Regulations. (*Ibid.*)

b. *Internal management exception inapplicable.*

As set forth above, the APA defines regulation as "every rule, regulation, order, or *standard* [*of*] *general application* ...
436 adopted by any state agency *436 to implement, interpret, or make specific the law enforced or administered by it, or to govern its procedure, *except one which relates only to the internal management of the state agency."* (§ 11342, subd. (b), italics added.)

Armistead v. *State Personnel Board, supra,* 22 Cal.3d at pages 200-201, determined that an agency rule relating to an employee's withdrawal of his resignation did not fall within the internal management exception. The Supreme Court reasoned the rule was "designed for use by personnel officers and their colleagues in the various state agencies throughout the state. It interprets and implements [a board rule]. It concerns termination of employment, a matter of import to all state civil service employees. It is not a rule governing the board's internal affairs. [Citation.] `Respondents have confused the internal rules which may govern the department's procedure ... and *the rules necessary to properly consider the interests of all ... under the ... statutes.* ...') [Fn. omitted.]" (*Id.,* at pp. 203-204, italics added.)

Armistead cited *Poschman* v. *Dumke* (1973) 31 Cal. App.3d 932, 942-943 [107 Cal. Rptr. 596], which similarly rejected a contention that a regulation related only to internal management. The *Poschman* court held: "`Tenure within any school system is a matter of serious consequence involving an important public interest. The consequences are not solely confined to school administration or affect only the academic community.'" (*Armistead, supra,* 22 Cal.3d at p. 204, fn. 3.)[9]

Relying on *Armistead,* and consistent therewith, *Stoneham* v. *Rushen* (1982) 137 Cal. App.3d 729, 736 [188 Cal. Rptr. 130], held the Department of Corrections' adoption of a numerical classification system to determine an inmate's proper level of security and place of confinement "extend[ed] well beyond matters relating solely to the management of the internal affairs of the agency itself[,]" and embodied "a rule of general application significantly affecting the male prison population" in its custody.

(7) By way of examples, the above mentioned cases disclose that the scope of the internal management exception is narrow indeed. This is underscored by *Armistead*'s holding that an agency's personnel policy was a regulation because it affected employee interests. Accordingly, even internal administrative matters do not per se fall within the internal management exception.

Nonetheless, the Department argues the provider is not required to do anything differently when the Department uses
437 probability sampling to *437 prove an overpayment than it would be required to do in a full scale audit. However, the Department's use of probability sampling might cause a provider to leave the Medi-Cal program to avoid the potential for large recoupments based on probability sampling. Further, whether a regulation requires affirmative conduct by an affected party is not dispositive. In *Stoneham* v. *Rushen, supra,* 137 Cal. App.3d at page 736, the adoption of a standardized scoring system to determine an inmate's classification invoked the APA because it was "a rule of general application significantly affecting the male prison population," although it does not appear the new system imposed an additional burden on the inmates.

In a case decided before *Armistead, City of San Joaquin* v. *State Bd. of Equalization* (1970) 9 Cal. App.3d 365, 374-375 [88 Cal. Rptr. 12], a statistical accounting technique was held not to be a regulation within the meaning of the APA.

Briefly, in that case, revenues from sales taxes imposed on over-the-counter sales were allocated to each taxing jurisdiction in direct proportion to the reported sales attributable to such jurisdiction. But, as to sales taxes derived from construction contracts, the taxes were returned to the cities and the county in the same ratio as such cities and county received revenues from over-the-counter sales for the same quarterly periods. Thus, each taxing jurisdiction received its prorated share of revenues from construction contracts under a formula which was geared to the revenues it received from over-the-counter sales. (*City of San Joaquin* v. *State Bd. of Equalization, supra,* 9 Cal. App.3d at p. 375.)

The *San Joaquin* court held the challenged pooling procedure was "not a regulation, order or standard of general application" but "merely a statistical accounting technique to enable the Board to allocate, as expediently and economically as possible, to each [participating city], its fair share of sales taxes collected by the Board on that city's behalf." (*City of San Joaquin, supra,* 9 Cal. App.3d at p. 375.)

In view of the Supreme Court's subsequent recognition in *Armistead* of the distinction between purely internal rules which merely govern an agency's procedure and rules which have external impact so as to invoke the APA (*Armistead, supra,* 22 Cal.3d at pp. 203-204), *San Joaquin*'s holding that statistical accounting techniques are exempt from the APA appears to have lost its precedential value. After *Armistead,* it would appear an accounting procedure resulting in a possibly disproportionate allocation of tax revenues would be the appropriate subject of a regulation adopted pursuant to the APA, allowing interested parties to be heard on the merits of the proposed rule.

438 *438 Further, because the Legislature adopted the APA to give interested persons the opportunity to provide input on proposed regulatory action (*Armistead, supra,* 22 Cal.3d at p. 204), we are of the view that any doubt as to the applicability of the APA's requirements should be resolved in favor of the APA.

We are also aware of *Americana Termite Co.* v. *Structural Pest Control Bd.* (1988) 199 Cal. App.3d 228 [244 Cal. Rptr. 693], decided after *Armistead,* which held an agency enforcement program was not a "regulation" subject to the APA.

There, pursuant to the enforcement program, the agency inspected the homes of participating homeowners. Thereafter, the homeowner contacted the companies designated by the agency and requested termite inspections. The agency then analyzed the companies' inspection reports to determine if the reports uncovered the problems previously identified by the agency's investigators. (*Americana Termite Co., supra,* 199 Cal. App.3d at pp. 230-231.) Without citation to authority, the *Americana* court concluded the enforcement program was not a regulation but merely "an internal enforcement and selection mechanism." (*Id.,* at p. 233.)

Thus, the *Americana* court apparently concluded "internal management" and "enforcement" are synonymous. Its reasoning is not fully developed. The fact that a rule pertains to enforcement does not establish that it relates only to internal management. In the instant case, while the challenged audit method facilitated enforcement, it also was a standard of general application adopted to implement the Department's statutory auditing authority.

Having made an independent determination as to what constitutes a regulation for purposes of the APA, we conclude the internal management exception is inapplicable. We therefore concur in the OAL's conclusion that the challenged audit method was an improper regulation not promulgated pursuant to the APA; it was a standard of general application which, in implementing the Department's statutory auditing authority, affected Medi-Cal providers statewide.

c. *The Department's other arguments are unavailing.*

(8) The Department further submits there was no need to promulgate a regulation because the only legally tenable interpretation of its statutory auditing authority is that statistical sampling and extrapolation procedures must be utilized. The argument is without merit. While sampling and extrapolation may be more feasible or cost-effective, it
439 does not follow that such method is the sole *tenable* interpretation of Welfare and Institutions *439 Code sections 14133 and 14170. A line by line audit is an alternative tenable interpretation of the statutes.

(9) The Department also urges that by refraining from the adoption of a formal regulation, it advanced the APA's goal of reducing the number of administrative regulations. (§ 11340.1.) The argument is unpersuasive. It is for the OAL to determine whether a regulation is necessary and nonduplicative; a regulation found to be unnecessary or duplicative will be disapproved. (§ 11349.1, subds. (a)(1) and (a)(6).)

5. *The Department acquiesced in the OAL's determination that the subject audit method constitutes a regulation.*

(10) Lastly, we note the Department acquiesced in the OAL's adverse 1987 determination. Following that determination, it formally promulgated a regulation under the APA, providing for statistical extrapolation of Medi-Cal provider reviews. (Cal. Code Regs., tit. 22, § 51458.2, operative May 13, 1988.) The regulation requires "probability sampling to extrapolate the recoverable amount when the extrapolated recovery amount exceeds the cost to the Department of doing the audit." (Cal. Code Regs., tit. 22, § 51458.2, subd. (a).) The regulation further provides: "Probability sampling will be done in conformance with generally accepted statistical standards and procedures described in any textbook on statistical sampling methods." (Cal. Code Regs., tit. 22, § 51458.2, subd. (b).)[10]

While the Department contends the formal regulation was a mere codification of its audit procedures, its failure to object to the OAL's adverse 1987 determination, compounded by its subsequent compliance with the APA, in effect constitutes an acquiescence in the OAL's determination.

CONCLUSION

A major aim of the Legislature in enacting the APA was to provide an opportunity for persons to be affected by proposed regulatory action to be heard on the merits of the proposal. (*Armistead* v. *State Personnel Board, supra,* 22 Cal.3d at p. 204.) The internal management exception to the APA is narrow and is inapplicable where a rule is to have general application and is to affect persons subject to regulation by the agency.

440 *440 Because the challenged audit method was a standard of general application implementing the Department's statutory auditing authority, the OAL properly determined the method was an improper "underground" regulation which should have been adopted pursuant to the APA.

(11) The Department's failure to comply with the APA renders the method invalid and unenforceable. Therefore, we do not reach the statistical validity of the method, whether it was correctly employed, or any other contentions.[11]

DISPOSITION

We affirm the judgment barring the Department from making any claim against **Grier** based on the sampling and extrapolation method it utilized in the audit. **Grier** to recover costs on appeal.

Danielson, J., and Croskey, J., concurred.

On May 2, **1990**, the opinion was modified to read as printed above. Appellants' petition for review by the Supreme Court was denied June 21, **1990**.

[1] All statutory references are to the Government Code unless otherwise specified.

[2] The OAL has filed an amicus curiae brief in support of **Grier**. Amici curiae briefs in support of **Grier** also have been filed by the Union of American Physicians and Dentists and by the California Medical Association.

[3] An illustration given is of a sample drawn from a box containing 500 pounds of oranges and diamonds. A random 10-pound sample might yield a misleading value if it contained a disproportionate number of diamonds. Stratified sampling, as contrasted with random sampling, would draw separate samples of diamonds and oranges.

[4] Although the ALJ's decision was interlocutory, the trial court's ruling in favor of **Grier** was appealable. It was a final judgment both in form and in effect because it fully disposed of the litigation. (9 Witkin, Cal. Procedure (3d ed. 1985) Appeal, §§ 43-44, pp. 66-68.)

[5] Section 11340 states: "The Legislature finds and declares as follows: [¶] (a) There has been an unprecedented growth in the number of administrative regulations in recent years. [¶] (b) The language of many regulations is frequently unclear and unnecessarily complex, even when the complicated and technical nature of the subject matter is taken into account. The language is often confusing to the persons who must comply with the regulations. [¶] (c) Substantial time and public funds have been spent in adopting regulations, the necessity for which has not been established. [¶] (d) The imposition of prescriptive standards upon private persons and entities through regulations where the establishment of performance standards could reasonably be expected to produce the same result has placed an unnecessary burden on California citizens and discouraged innovation, research, and development of improved means of achieving desirable social goals. [¶] (e) There exists no central office in state government with the power and duty to review regulations to ensure that they are written in a comprehensible manner, are authorized by statute and are consistent with other law. [¶] (f) Correcting the problems that have been caused by the unprecedented growth of regulations in California requires the direct involvement of the Legislature as well as that of the executive branch of state government."

[6] Section 11342, subdivision (b), also exempts "any form prescribed by a state agency or any instructions relating to the use of the form, ..." That exception is not in issue here.

[7] Welfare and Institutions Code sections 10725 and 14124.5, in requiring compliance with the APA, both refer to chapter 4.5 (commencing with § 11371), of part 1, division 3, title 2 of the Government Code. While chapter 4.5 was repealed by Statutes 1979, chapter 567, section 2, the relevant provisions are continued in chapter 3.5, which begins at section 11340. (See table at 32B West's Ann. Gov. Code (1980 ed.) p. 736; Deering's Ann. Gov. Code (1982 ed.) p. 622.)

[8] Because it was the Union of American Physicians and Dentists, and not **Grier**, which sought the OAL determination, we are not precluded from considering the OAL's opinion. (§ 11347.5, subd. (e).)

[9] *Armistead* disapproved *Poschman* on other grounds. (*Armistead, supra,* 22 Cal.3d at p. 204, fn. 3.)

[10] The Department's statement of necessity for the regulation reflected that many Medi-Cal providers were unaware of the Department's use of probability sampling and statistical extrapolation.

In complying with the APA, the Department received comments from the California Pharmacists Association, the California Medical Association, and the Union of American Physicians and Dentists, among others.

[11] The judgment of the trial court bars the Department from making any claim against **Grier** based upon the sampling and extrapolation method it utilized in the audit. As indicated, operative May 13, 1988, the Department adopted California Code of Regulations, title 22, section 51458.2, authorizing statistical extrapolation of Medi-Cal provider reviews. We decline to render an

advisory opinion as to whether this newly adopted regulation allows statistical extrapolation of claims for services rendered prior to its operative date.

D

Stoneham v. Rushen (1982) 137 Cal.App.3d 729 , 188 Cal.Rptr. 130

[Civ. No. 53017. Court of Appeals of California, First Appellate District, Division One. November 24, 1982.]

ELVRY STONEHAM et al., Plaintiffs and Respondents, v. RUTH RUSHEN, as Director, etc., Defendant and Appellant.

(Opinion by Racanelli, P. J., with Elkington and Newsom, JJ., concurring.)

COUNSEL

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Michael Satris and Donald Specter for Plaintiffs and Respondents.

OPINION

RACANELLI, P. J.

This appeal arises against the following background: Under the provisions of the Penal Code (to which all statutory references apply unless otherwise noted) the Director of Corrections (Director), as manager of the state prison system, is charged with the responsibility for the "care, custody, treatment, training, discipline and employment" of all prisoners (? 5054). Upon arrival at a state prison facility, an inmate is required to undergo an examination of his personal background which thereafter serves as a basis of the Director's decision to "classify [the prisoner] and determine the prison in which the [prisoner] shall be confined." (? 5068.) The prisoner may also undergo reexaminations to determine whether existing orders should be modified. (? 5068.)

Historically this classification process entailed an evaluation by a classification committee of the inmate's offense, personal life history and institutional behavior. In February 1980, however, pursuant to an "administrative bulletin" from the Director, the staff of the Department of Corrections (Department) began to employ a classification score sheet (form 839) for new male inmates and a classification review sheet (form 840) for previously classified male inmates in order to compile a numerical score. That score is employed by the Department for purposes of determining the proper level of custody and place of confinement as well as for planning and budgeting considerations. fn. 1 **[137 Cal.App.3d 732]**

On April 18, 1980, the Director's predecessor in office adopted regulations broadly defining the classification process. (Cal. Admin. Code, tit. 15, ?? 3375-3376.) On June 25, 1980, the Director issued a superseding administrative bulletin reflecting changes made in forms 839 and 840 and expressly acknowledging that the promulgated score sheets constituted "an integral part in the development of the new classification system."

On November 17, 1980, respondents Stoneham, a San Quentin inmate, and the Prison Law Office, an incorporated association, filed a petition for writ of mandate and declaratory relief seeking to halt

implementation of this new classification system until the Director had complied with the notice and hearing requirements of the Administrative Procedure Act (Act). (See Gov. Code, ? 11342 et seq.) fn. 2

On November 19, 1980, the trial court issued a temporary restraining order restraining the Director from making involuntary transfers of San Quentin inmates under the challenged classification system (excluding permissible transfers for reasons of institutional security).

On December 8, 1980, in response to the restraining order, the Director purported to issue an "emergency" regulation without notice as authorized under Government Code section 11346.1. That action resulted in a continuance of the hearing on the order to show cause to allow briefing on the issue of emergency.

On December 17, 1980, the Office of Administrative Law ordered the repeal of the emergency regulation pursuant to Government Code section 11349.6. Thereafter the Director argued for the first time in the trial court that the Act did not apply to the classification rules.

Meanwhile, on December 17, 1980, the trial court entered an interim judgment mandating the Director to discontinue involuntary transfers based solely upon the challenged regulations (excluding classification of new inmates and consensual transfers).

On December 30, 1980, in response to the terms of the interim judgment, petitioners filed a first amended petition seeking the same relief while challenging respondents' claim of emergency in enacting the proposed classification scheme. **[137 Cal.App.3d 733]**

On February 26, 1981, following further hearing, the trial court entered its final judgment granting a peremptory writ commanding the Director to cease classification and involuntary transfer of inmates under the challenged rules and regulations contained in the administrative bulletins pending proof of satisfactory compliance with the provisions of the Act. fn. 3 The Director thereafter filed her notice of appeal.

Venue

[1] Preliminarily we address the Director's contention that proper venue lay in the county of her official residence, namely, Sacramento. (Code Civ. Proc., ? 395.) Since the underlying litigation seeks to compel the Director to enact a rule or regulation in compliance with the Act in Sacramento County, it is argued, trial venue in Marin County is improper.

Under the relevant venue provisions of the Code of Civil Procedure, an action against a public officer must be tried in "the county in which the cause, or some part thereof, arose. ..." (? 393.) fn. 4 In Cecil v. Superior Court (1943) 59 Cal.App.2d 793 [140 P.2d 125] [upholding local venue in licensee's mandamus action to set aside Department of Agriculture's revocation order executed in Sacramento County] the court focused on the locus of the injury by enforcement of the order in determining venue under section 393, subdivision (b), reasoning that "It is where the shaft strikes [a citizen], not where it is drawn, that counts. ... Surely a cause of action does not arise in the county in which a state officer happens to affix his name to an order which is to become operative in another county." (Id, at p. 799.) (Accord Duval v. Contractors State License Board (1954) 125 Cal.App.2d 532, 535 [271 P.2d 194].) The Cecil rule confirming venue in the county in which the alleged injury occurs as a result of official action has been consistently reinforced by our highest state court. (SeeRegents of University of California v. Superior Court (1970) 3 Cal.3d 529, 538-539, 542 [91 Cal.Rptr. 57, 476 P.2d 457]; accordTharp v. Superior Court (1982) 32 Cal.3d 496, 502-503 [186 Cal.Rptr. 335, 651 P.2d 1141].) **[137 Cal.App.3d 734]**

As noted, the official action complained of is the Director's implementation of a classification system without compliance with the provisions of the Act. Although the Director's actions may have occurred

in the County of Sacramento, the effects of such action (reclassification of the individually named plaintiffs and threatened transfer to another facility) occurred in Marin County, the county in which the resulting injury was sustained. (Regents of University of California v. Superior Court, supra, 3 Cal.3d 529, at p. 542.) fn. 5 We conclude that Marin County was the proper place for trial.

Mootness

[2] The record discloses that since the date of entry of judgment, the Director initiated proceedings under the Act to amend the 1980 regulations and to incorporate the classification scoring process. fn. 6 Although adoption of the amended regulations would appear to fulfill the conditions of the judgment, the parties contend that the instant appeal is not moot because unsettled questions remain as to the scope and effect of the Act in relation to the administrative bulletins implementing the new classification process. We agree and consider such unresolved questions only insofar as the matters are properly before us. **[137 Cal.App.3d 735]**

Compliance With the Act

[3] The primary question is whether the Director was required to comply with the notice and hearing requirements of the Act (Gov. Code, ? 11342 et seq.) before issuing "administrative bulletins" implementing the new standardized classification system established under the regulations. As earlier noted, the Director is statutorily empowered to examine each prisoner and thereupon to classify the prisoner to determine the prison in which he will be confined. (? 5068.) The Director is further authorized to "prescribe and amend rules and regulations for the administration of the prisons." (? 5058.) The Legislature has expressly declared that such rules and regulations must be promulgated and filed in accordance with the relevant provisions of the Act. (? 5058.)

But, not all directives are subject to the Act. The Act does not apply to (1) a rule relating "only to the internal management of the state agency" or (2) "any **[137 Cal.App.3d 736]** form prescribed by a state agency or any instructions relating to the use of the form." (Gov. Code, ? 11342, subd. (b).)

The Director argues that the procedural details contained in the administrative bulletins merely implement the statement of policy set forth in regulation 3375 and fall within either or both of the statutory exemptions. Plaintiffs, on the other hand, steadfastly insist that because the classification system determines the custody level of a prisoner and the institution in which he will be housed, the critical point-scoring system represents a rule of general application which must be adopted in compliance with the Act. We agree.

InArmistead v. State Personnel Board (1978) 22 Cal.3d 198 [149 Cal.Rptr. 1, 583 P.2d 744], the court determined that a board rule relating to an employee's withdrawal of his resignation did not fall within the "internal management" exemption. The court reasoned that the implementing rule involving termination of employment was "a matter of import to all state civil service employees. It is not a rule governing the board's internal affairs." (Id, at p. 203; see also Ligon v. State Personnel Board (1981) 123 Cal.App.3d 583 [176 Cal.Rptr. 717] [policy relating to out-of-class experience].) In so holding the Supreme Court cited with approval our decision in City of San Marcos v. California Highway Com. (1976) 60 Cal.App.3d 383 [131 Cal.Rptr. 804], involving a state agency's disallowance of a city's application for allocation of grade separation funds on grounds the underlying railroad crossing agreement had been submitted after the deadline for that year's application. In rejecting the agency's claim that the deadline requirement was exempted under the internal management exception provided by the Act, we reasoned that: "Respondents have confused the internal rules which may govern the department's procedure in developing its applications for funds for its own projected grade crossings, and the rules necessary to properly consider the interests of all who will seek consideration under the provisions of the statutes dealing with review and allocations." (Id, at p. 408; italics added.)

A similar result is compelled herein. The classification scheme employed by the Director and the Department extends well beyond matters relating solely to the management of the internal affairs of

the agency itself. Embodying as it does a rule of general application significantly affecting the male prison population in the custody of the Department, such a comprehensive classification system is not exempt as a rule of internal management from mandatory compliance with the Act.

Nor, as alternatively contended, does the standardized scoring system fall within the statutory exemption relating to operational forms. The use of a standardized score sheet to achieve a classification formerly determined on a subjective basis brings about a wholly new and different scheme affecting the **[137 Cal.App.3d 737]** placement and transfer of prisoners. Consequently, such uniform substantive proposals contained in the administrative bulletins designed to implement the classification system must be promulgated in compliance with the Act.

In conclusion, we agree with the trial court that the Director was required to follow the notice and hearing procedures (Gov. Code, ?? 11346.4-11346.8) prior to implementing the standardized classification system. We express no opinion, however, as to whether the existing regulation 3375, as adopted after the judgment below, is sufficiently detailed to satisfy the requirements of the Act. That matter was neither raised at trial nor briefed on appeal. Accordingly, in the absence of an adequate record presenting that precise question for determination, the issue is premature and we decline to reach it.

The judgment is affirmed and the matter remanded for such further proceedings as may be appropriate and consistent with the views expressed herein.

Elkington, J., and Newsom, J., concurred.

?FN 1. In its enabling legislation providing for construction of new prisons, the Legislature declared its intent that "the department house each inmate at the lowest custody level consistent with his or her classification. ..." (Stats. 1980, ch. 1122, ? 2, p. 3620.)

?FN 2. Respondent Washington, also a San Quentin inmate, was later added as a party plaintiff. Both respondent inmates allege that as a result of their new classification scores they were subject to transfer to other state institutions thus jeopardizing their present work assignments and the continuing support of their friends and family.

?FN 3. Though irrelevant to our discussion, we note that during the interim period successive amendment proposals by the Director were rejected by the Office of Administrative Law essentially on grounds of noncompliance with related provisions of the Act. The administrative decision rejecting the proposed regulation was itself overruled on appeal to the Office of the Governor. (See Gov. Code, ? 11349.5.)

?FN 4. Code of Civil Procedure section 393 reads in pertinent part as follows: "(1) Subject to the power of the court to transfer actions and proceedings as provided in this title, the county in which the cause, or some part thereof, arose, is the proper county for the trial of the following actions: ... [?] (b) Against a public officer or person especially appointed to execute his duties, for an act done by him in virtue of his office; or against a person who, by his command or in his aid, does anything touching the duties of such officer."

?FN 5. The Director's reliance on an earlier line of cases distinguishing affirmative acts from mere omissions is misplaced. (See e.g., Bonestell, Richardson & Co. v. Curry (1908) 153 Cal. 418, 420 [95 P. 887]; State Commission in Lunacy v. Welch (1908) 154 Cal. 775 [99 P. 181].) As shown herein, the Director's action in establishing a classification and reclassification system involving transfer and assignment of prison inmates constituted completed affirmative acts as distinguished from threatened action. (SeeRegents of University of California v. Superior Court, supra, 3 Cal.3d 529, 537, fn. 10.)

?FN 6. Regulation 3375 as amended now provides: "(a) All determinations affecting an individual inmate's institution placement, transfer between institutions, participation in available programs, the degree of control and supervision required to maintain custody of the individual, the security of the institution and safety of persons, will be through the inmate classification procedures of the department.

"(b) The classification process for male felon inmates includes a standardized classification scoring system wherein specific weight, positive or negative, is assigned to selected case factors relating to the inmate's precommitment history, commitment offense, and the term of imprisonment. Included in the factors considered are the inmate's military service, history of employment and education, and documented behavior during previous terms of imprisonment. Higher initial scores will result in case histories reflecting among other negative factors; physically assaultive behavior, drug involvement, escapes, and failure to participate in assigned work, vocational or educational programs during previous terms of imprisonment. Lower initial scores will result in case histories that reflect fewer negative factors and positive participation in assigned work, vocational or educational programs during previous terms of imprisonment.

"(c) Each male felon inmate's classification score is recalculated periodically, but no less often than every 12 months. Additional selected and weighted case factors relating to the inmate's favorable and unfavorable conduct while incarcerated are considered in the recalculated classification score. Factors considered in the recalculation focus on the inmate's documented behavior. A finding of guilt for any Serious rule violation as described in Section 3315 or failure to participate in assigned work, vocational or educational programs will result in a score increase. A reduction in score will result from positive participation in assigned work, vocational or educational programs and the lack of Serious rule violations.

"(d) An inmate may be housed in an institution with a different custody level than would ordinarily be required of the inmate's classification score, as an administrative exception when the department's need, the inmate's individual needs, or safety and security requirements are determined to warrant an exception.

"(e) The classification process will begin upon the reception of a person committed to the custody of the Director of Corrections and will continue throughout the entire time the individual remains under the jurisdiction of the Director of Corrections.

"(f) Reclassification, or reevaluation, will be an ongoing process of reviewing the individual inmate's needs, interests and desires, in keeping with the institution's and the department's responsibilities as to the effect on the individual, other inmates, staff and public safety.

"(g) Whenever possible, the inmate will be given written notice sufficiently in advance of a hearing before a classification committee, in order to be reasonably prepared to discuss the purpose, reasons or issues to be considered at the hearing. When it is known or can be anticipated by a classification committee, an inmate appearing before the committee will be informed when he or she will again routinely appear before a classification committee. The inmate will always be given a written statement of the results of any classification committee hearing.

"(h) Except as provided in Section 3383, the inmate shall be present at all initial classification committee hearings and at all classification committee hearings which may have an adverse effect upon his or her current conditions of confinement. An inmate will be informed of an initial hearing or of an unscheduled hearing wherein an adverse effect is anticipated at least 72 hours prior to the hearing. Absentia hearings are authorized only under the following circumstances:

"(1) The inmate refuses to appear before the committee.

"(2) The inmate is physically incapable of appearing before the committee, or mentally incompetent to participate and understand the purpose of the hearing as determined by a psychiatrist.

"(3) The predetermined purpose of the hearing is to reduce or remove a restriction upon the inmate.

"(4) The predetermined purpose is to approve an action requested in writing by the inmate.

"(5) The purpose of the hearing is for a routine progress review to determine the need for scheduling a future classification committee action. When an absentia hearing is held for any reason, the fact and the reason will be included in the committee's documentation of the hearing.

"(i) When a classification hearing includes the consideration of a newly calculated or recalculated classification score, the inmate shall be provided with a copy of the completed scoring form at least 72 hours in advance of the hearing, as provided in subsection (d) for an adverse hearing. An inmate may contest the classification score in the hearing and may appeal the classification score if dissatisfied with the decisions or recommended actions of the hearing."

Regulation 3376 relating to institutional classification operational plans remains unchanged.