

Appendix D5

Purpose and Rationale for Proposed Appendix A

Proposed Amendments to title 13, California Code of Regulations (CCR), sections 1958, 1976, 2036, and Proposed Adoption of section 1958.1

California Government Code section 11346.2(b)(1) requires a description of the specific purpose for each proposed adoption, or amendment, the problem the agency intends to address with the proposed regulation, and the rationale for determining that each proposed adoption and amendment is reasonably necessary to both carry out the purposes of the California Air Resources Board (CARB) staff's Proposal and to address the problems for which it is proposed. **Applicable to all sections in this Appendix are the following:**

- The provisions are necessary to provide clarity to the regulated industry.
- The general summary and rationale and descriptions of necessity in Section V of the Staff Report: Initial Statement of Reason are incorporated into this Appendix and apply to all provisions below.
- The provisions are necessary to implement and enforce the requirements.
- All timeframes specified were chosen to achieve consistency with similar provisions in the federal provisions, light duty and medium duty regulations. They were also chosen to provide the regulated industry with sufficient time to submit information or take certain actions while balancing CARB's need to receive information, engage in certification activities, and implement the regulations.

Section 1958 - Exhaust Emissions Standards and Test Procedures - Motorcycles and Motorcycle Engines Manufactured After January 1, 1978

Subsection (a)(1)

Purpose: Subsection (a)(1) is amended to specify that motorcycles with engines under 50cc displacement are exempt from the exhaust emissions standards and test procedures of this section through model year 2027 only.

Rationale: Amendments to this subsection are necessary because, for model year 2028 and beyond, motorcycles with engines under 50cc will be subject to CARB exhaust emissions standards. Prior to model year 2028, these vehicles are subject to U.S. EPA emissions standards. More stringent emissions limits for these small-displacement motorcycles are technically feasible and cost effective. California needs additional emission reductions to meet air quality standards, so CARB will require motorcycles with displacement under 50cc to meet more stringent standards starting

in model year 2028. This date was chosen to provide emission reductions as quickly as possible while still allowing manufacturers adequate time to develop models that comply with the new standard.

Subsection (a)(2)

Purpose: Subsection (a)(2) is added to explicitly exempt zero-emission motorcycles from the exhaust emissions standards and test procedures of this section.

Rationale: This subsection is necessary because zero-emission motorcycles are subject to a separate set of requirements outlined in title 13, CCR, sections 1958.4 through 1958.7. Under current regulations, battery-electric zero-emission motorcycles have been exempted from section 1958 exhaust emissions standards since they lack an internal combustion engine and therefore qualify under subsection (a)(1) as having engine displacement less than 50cc. This has led to confusion among manufacturers. Given the increased prevalence of zero-emission motorcycles in the marketplace, and the proposed adoption of standards and certification procedures unique to zero-emission motorcycles, it is appropriate to provide a more direct and explicit exemption.

Subsection (a)(3)

Purpose: Subsection (a)(3) is renumbered from previous subsection (a)(2).

Rationale: This subsection must be renumbered since a new exemption for zero-emission motorcycles was added. The content of this subsection is unchanged from the previous subsection (a)(2).

Subsection (b)

Purpose: Subsection (b), the table contained therein, and the “**” note within the table are amended to include an end date of model year 2027 for applicability of the current motorcycle emissions standards and for the corporate averaging provisions allowed under the current regulation. (Starting in model year 2028, new motorcycles will be required to meet the more stringent standards outlined in new subsection (h).) The table is also amended to clarify that small volume manufacturers, defined in subsection (f)(3) as those manufacturers selling no more than 300 motorcycles in California annually, can continue certifying their Class I and Class II motorcycles (50 cc to 279 cc) to the existing emissions standards, as has been applicable since MY 2008 per subsection (f)(3).

Rationale: The amendments to this subsection are necessary to clearly state that the current emissions standards and corporate averaging provisions allowed under the current regulation do not apply beyond model year 2027 since new emissions standards for model year 2028 and subsequent are being adopted in subsection (h). The new standards for model year 2028 and beyond will not apply to small volume manufacturers. Smaller manufacturers may lack the technical and financial resources required to comply with the more stringent exhaust emission control and testing requirements, and the excess emissions from their small number of motorcycles sold annually will not have a significant adverse impact on air quality. Therefore, the table is amended to clarify that small volume manufacturers can continue to build and certify motorcycles to the current standards. Replacing the text “subject to registration and sold and registered in this state” is replaced with “[manufactured] and delivered for sale in California” to more accurately identify which motorcycles are subject to the regulation.

Further, corporate averaging of exhaust emissions is not allowed under the European Union regulations that CARB is harmonizing with and manufacturers have already developed a wide range of compliant models for the European market, so there is no need for including averaging provisions when new standards become effective for model year 2028 and subsequent.

Subsection (c)

Purpose: Subsection (c) is amended to include an end date of model year 2027 for applicability of the current motorcycle exhaust emissions test procedures, and to more clearly indicate which test procedures are applicable to small volume manufacturers. Starting in model year 2028, new motorcycles will be required to meet the more stringent exhaust emissions test procedures referenced in new subsection (h)(4).

Rationale: The amendments to this subsection are necessary to clearly state that the current exhaust emissions test procedures do not apply beyond model year 2027, except for small volume manufacturers, since new exhaust emissions test procedures for model year 2028 and subsequent are being adopted in subsection (h)(4).

Subsection (e)

Purpose: This subsection is amended to capitalize “Executive Officer”, identify U.S. EPA, add submittal information, and break out requirements into subsections (1), (2), and (3).

Rationale: The existing regulation requires information to be submitted to the Executive Officer. Although this preexisting requirement has not posed a burden on manufacturers being able to correctly submit this information, a specific submittal path, through CARB’s electronic filing system called E-File, is now provided to ensure consistent and clear requirements for submittal to manufacturers. Subsections are provided to clearly communicate this information.

Subsection (f)

Purpose: The title is moved from (f)(1) to (f).

Rationale: It is appropriate to have the title of a subsection in the parent designation.

Subsection (f)(3)

Purpose: The table in subsection (f)(3) is amended to clarify the applicability of exhaust emissions requirements for small volume manufacturers of Class I and Class II motorcycles for model years 2008 and beyond. This subsection is also amended to correctly state the provision apply to subsection (f), not only (f)(1).

Rationale: This amendment is necessary because new emissions standards are proposed in subsection (h) for model year 2028 and subsequent. The new standards for model year 2028 and beyond will not apply to small volume manufacturers, so the table is amended to clarify that small volume manufacturers can continue to build and certify motorcycles to the current standards in subsection (f)(1)(B) and that subsection (b) applies to Class I and Class II motorcycles. The reference to “all other manufacturers” in the previous version of the table must be removed since those manufacturers will be subject to the new exhaust emissions standards in subsection (h) starting in model year 2028. The existing text incorrectly states the table provisions apply for purposes of subsection (f)(1), but (f)(1) is only applicable to Class III motorcycles. Since the table current contains requirements for Class I and Class II motorcycles, this was an existing oversight that is now being corrected.

Subsection (g)

Purpose: Subsection (g) is amended to include an end date of model year 2027 for the early compliance credit provisions allowed under the current regulation.

Rationale: This amendment is necessary because the new emissions standard proposed in subsection (h) for model year 2028 and subsequent do not include any early compliance credit provisions.

Subsection (h)

Purpose: Subsection (h) is amended to delete the “Sunset Review” provision and replace it with language defining applicability of new exhaust emissions standards and test procedures for motorcycles starting with model year 2028. Motorcycles that are currently exempt from exhaust emissions requirements pursuant to subsections 1958(a)(1)-(3) will remain exempt, as well as small volume manufacturers as noted in subsections (b) and (f).

Rationale: Deleting the “Sunset Review” provision in the current regulation is necessary since the review required under this subsection has already been completed by CARB staff. Current exhaust emissions standards have been in effect since model year 2008. Staff review found that the current standards were technically feasible and reasonably effective at the time. However, continuing air quality concerns in many regions of the state and improvements in emissions control technologies and have made it necessary and feasible to adopt more stringent standards for model year 2028 and subsequent. The standards and test procedures proposed in this amendment are largely harmonized with Euro 5 requirements that have been in effect in the European Union since 2020. Most of the manufacturers doing business in California have already developed a wide range of compliant motorcycles for the European market, so technical feasibility of the new standards and test procedures is not in question and there is no need for a Sunset Review of the proposed exhaust standards.

Subsection (h)(1)

Purpose: Subsection (h)(1) is added to establish new exhaust emissions limits for motorcycles starting with model year 2028. The subsection also clarifies that the corporate averaging provisions available to manufacturers in model years 2027 and prior, as outlined in subsection (b), do not apply to these new emissions limits.

Rationale: More stringent exhaust emissions standards are necessary in order to reduce exhaust emissions from motorcycles in support of California's air quality goals. Reductions in hydrocarbons (Total Hydrocarbons [THC] and Non-Methane Hydrocarbons [NMHC]) and oxides of nitrogen (NOx) are needed in order to reduce ground level ozone concentrations throughout the state, but particularly in the San Joaquin Valley and South Coast air basins. The proposed standards are identical to the "Euro 5" emission limits found in EU Regulation 168/2013, Annex VI, Table (A2). They are significantly more stringent than current CARB standards, requiring more advanced emissions control technologies and sophisticated engine management systems. The technological feasibility of the standards has been thoroughly evaluated by the European Commission as documented in the *"Effect Study of the Environmental Step Euro 5 for L-Category Vehicles"* 18, May, 2017. A wide range of compliant motorcycle have been available on the European market since 2020, providing further proof of the technical feasibility of the standards.

The emissions standards proposed in subsection (h)(1) allow for a maximum 0.10 g/km total hydrocarbons and 0.060 g/km NOx. This represents an 80% reduction in numerical limits as compared to the current standard of 0.8 g/km hydrocarbons and NOx combined. Similarly, the proposed limit for carbon monoxide is reduced by approximately 92% from 12 g/km to 1 g/km. Hydrocarbon reductions will be further ensured through the proposed NMHC standard. NMHC is a subset of total hydrocarbons. Based on their experience with Euro 5 compliant motorcycle models from 2020 onward, several manufacturers have indicated that total hydrocarbon levels typically need to be well below the allowable limit in order to meet the NMHC standard.

A particulate matter (PM) standard is included for compression ignition (commonly referred to as a diesel engine) and gasoline direct injection (GDI) engines. Current CARB regulations do not limit PM emissions from motorcycles. Exhaust emissions testing by CARB staff and the European Commission indicate that PM emissions are typically very low for conventional gasoline powered motorcycle engines. Diesel and GDI engines can emit high levels of PM unless specific control technologies are employed to reduce PM. Diesel and GDI engines are uncommon in motorcycles, but a PM standard is included to be consistent with EU requirements and safeguard against increased PM if diesel or GDI technologies were to become more prevalent in motorcycles in the future.

Subsection (h)(2)

Purpose: Subsection (h)(2) is added to prohibit emissions of fuel, lubrication oil, and crankcase emissions from the crankcase ventilation system of model year 2028 and subsequent motorcycles.

Rationale: Fuel, lubricants, and crankcase gasses contain hydrocarbons that contribute to the formation of ground level ozone. As such, their release to atmosphere must be limited to protect air quality. The prohibition on emissions from the crankcase ventilation system is not new. Existing regulation subsection (c) specifies that motorcycles must comply with subpart E, Part 86, title 40 of the Code of Federal Regulations. 40 CFR § 86.410-2006 (d) specifies that no crankcase gasses shall be discharged to atmosphere. Euro 5 regulations include a comparable requirement in EU Regulation 168/2013, Annex V, Table (A). Under EPA regulations, compliance with this requirement is based on vehicle design, where a crankcase is sealed except for venting into the engine intake where any hydrocarbons can be combusted. Euro 5 regulations specify a test procedure to determine compliance with crankcase emission limits, but CARB staff has determined that the design-based compliance determination used by CARB and EPA for decades on motorcycles is less costly and equally effective in ensuring that no fuel, lubrication oil, crankcase gasses are emitted to the atmosphere from the crankcase ventilation system.

Subsection (h)(3)

Purpose: Subsection (h)(3) is added to require manufacturers to submit carbon dioxide emissions data as part of their certification application.

Rationale: Carbon dioxide (CO₂) emissions from motorcycles are not regulated, and there is no emissions limit imposed by the proposed regulations. However, CO₂ is a greenhouse gas. As such, CO₂ emissions data for motorcycles is valuable for a variety of CARB programs related to transportation fuels and greenhouse gas emissions. Since 2011, motorcycle manufacturers have been required to report CO₂ emissions under 40 CFR § 86.431-78. Subsection (c)(2) clarifies that this requirement continues to apply under the newly proposed emissions standards for model year 2028 and subsequent. CO₂ emissions are already being measured during exhaust testing, so manufacturers will face no additional cost or workload in generating this data.

Subsection (h)(4)

Purpose: Subsection (h)(4) is added to establish new test procedures that will be used to measure exhaust emissions for model year 2028 and subsequent

motorcycles. The test procedure combines key elements and technical requirements of the Euro 5 exhaust testing procedure with the legal, procedural, and administrative requirements found in current EPA and CARB regulations.

Rationale: It is necessary to establish test procedures to measure exhaust emissions from model year 2028 and subsequent motorcycles. Existing test procedures have not been substantively updated in more than 20 years and no longer reflect current motorcycle emissions control technologies or real-world riding behaviors. The proposed test procedure incorporates relevant EU technical and procedural requirements that were developed specifically to correspond with the Euro 5 emissions limits that are proposed in subsection (h)(1). Elements of the new test procedure taken directly from the EU regulation include a new drive cycle, dynamometer load coefficients, vehicle shift schedule, and durability demonstration criteria. The is structured in a way that allows manufacturers to obtain CARB certification using exhaust emissions test data generated for EU Type Approval as required for selling motorcycles in the EU. The procedures also allow for CARB emissions testing of vehicles that have undergone the required EPA durability demonstration protocol. A variety of options in the procedure provide manufacturers flexibility to run required CARB testing in conjunction with required EPA or EU testing, thereby reducing costs and time associated with duplicative testing. A detailed discussion of the purpose and rationale for each section of the new test procedure is included in Appendix D1.

Subsection (h)(5)

Purpose: Subsection (h)(5) is added to establish a three-year phase-in period for manufacturers to comply with the new exhaust emission standards of subsection (h). Each manufacturer shall certify at least 30% of their California motorcycle sales to the new standards in model year 2028, at least 60% in 2029, and 100% in model years 2030 and subsequent.

Rationale: Subsection (h)(5) is necessary to define minimum compliance percentages that each manufacturer must achieve from 2028 through 2030. Air quality benefits of the new exhaust emissions standards are maximized by implementing it as quickly as possible. Given the fact that the new standard is closely aligned with Euro 5 standards that have been in effect in the EU since 2020, and that most manufacturers have already developed a wide range of compliant models for the European market, staff had initially considered requiring 100% compliance with the new standards in model year 2026. Manufacturers responded to staff's proposed model year 2026 implementation with concerns about an inability to certify vehicles in time.

Although the required emissions control technology has already been developed and validated for the European market, manufacturers still need to adapt their EU models to the California market. Changes include non-emissions items such as exhaust noise, lighting, labeling, and various safety-related items whose requirements differ between the EU and US. Several manufacturers indicated that they would also need time and engineering resources to validate their EU-based emissions control calibrations for use with California fuels, temperature profiles, and driving conditions. Delaying implementation from 2026 as initially proposed, to 2028 as currently proposed, should provide adequate time for manufacturers to accomplish those tasks.

In addition to the technical development and validation work discussed in the previous paragraph, manufacturers also expressed concerns with the logistics involved in completing required certification testing for all California models in a single model year. Limitations on critical testing resources (dynamometers, test engineers, analytical equipment, third-party testing labs, etc.) make it challenging for manufacturers to perform the required exhaust emissions testing and durability demonstrations on all their engine families in a single model year. This problem is compounded by the fact that CARB staff's proposal includes new on-board diagnostic (OBD) and evaporative emissions standards that begin concurrently with the proposed exhaust standards and include significant testing requirements. Staff agrees with manufacturers that implementing the new exhaust, OBD, and evaporative requirements on all engine families in a single model year as previously proposed would not be feasible. A failure to certify all engine families would result in limited model availability in California, which adversely impacts California's motorcycle dealers and riders. To address this concern, the proposal spreads out implementation of the exhaust, OBD, and evaporative requirements over three years, providing manufacturers more time to complete all required testing. The chosen phase-in percentages will allow manufacturers to spread out certification testing activities for new models into roughly even portions over three model years, thereby balancing the need to quickly reduce emissions with manufacturers' concerns about excessive testing requirements in any single model year. Spreading certification testing evenly across three model years provides flexibility and should allow manufacturers to complete required testing using existing test facilities (manufacturer-owned laboratories or third-party laboratories) while still addressing the need to reduce emissions as expeditiously as possible.

Subsection (h)(6)

Purpose: Subsection (h)(6) is added to establish requirements for the remaining percentage of each manufacturer's motorcycles that are not certified to the new exhaust standards in model years 2028 and 2029. Subsection (h)(6) also clarifies that small volume manufacturers can continue certifying their motorcycles to the current standards beyond model year 2028.

Rationale: Subsection (h)(6) is necessary to describe requirements applicable to motorcycles that are not required to meet the new exhaust emissions standards of subsections (h)(1)-(5). This includes the remaining percentage of model year 2028 and 2029 motorcycles from large manufacturers that are not certified to the newly proposed emissions standards. Staff expects that these will be 2028 and 2029 models that are identical in all emissions-related respects to models that were certified in model year 2027 or earlier. Each manufacturer can continue selling these "carryover" motorcycles in model year 2028 and 2029, up to the percentage allowed in subsection (h)(5), as long as the motorcycles are certified to meet the existing (2027 and earlier) emissions standards.

Small volume manufacturers, defined as those selling 300 or fewer motorcycles annually in California, can continue certifying their motorcycles to the current standards in subsection (b) through (f). As discussed in subsection (h)(1), above, the proposed standards for model year 2028 and subsequent are harmonized with EU standards that have been in place since 2020 but are significantly more stringent than current CARB standards. Large motorcycle manufacturers in the California market all operate in multiple markets around the world, including the European Union. These large manufacturers have already invested the resources to develop and certify a full range of European models that comply with the proposed standard and can be adapted to the California market within the timeframes required by the proposal. In contrast, some small volume manufacturers in California may market their vehicles only in California or the United States. They may lack the technical expertise or financial resources to develop models that meet the proposed standards and could be forced out of the California market altogether if they were required to meet the new standards. Allowing small volume manufacturers to continue building to the current standards, which are aligned with U.S. EPA standards, will allow them to continue certifying motorcycles in California.

Motorcycles certified to the current standards will generate more emissions than one certified to the proposed standards, on a per mile basis. As such, allowing small

volume manufacturers to continue building to the current standard would result in greater overall emissions than requiring them to comply with the new standards. However, staff analysis of model year 2018-2020 sales reports indicate that small volume manufacturers typically represent approximately 2-3% of annual statewide motorcycle sales meaning the overall emissions impact is quite small. Furthermore, a relatively high percentage of small volume manufacturer's sales are smaller displacement Class I and Class II motorcycles which are expected to transition towards zero-emission more quickly than larger displacement Class III motorcycles. As zero-emission sales displace conventional small volume manufacturer sales, the emissions impact of the small volume manufacturer provisions will further decrease.

Subsection (i)

Purpose: Subsection (i) is added to describe the information that manufacturers are required to submit in their application for certification for motorcycles subject to the newly proposed emissions standards. It includes the information currently required under subsection (e) and additional information related to the new exhaust emission standards and test procedures as outlined in EU regulation 168/2013 and EU 901/2014.

Rationale: Subsection (i) is necessary because the existing certification application information required pursuant to subsection (e) does not adequately cover the new emissions test procedure. In order to evaluate compliance with applicable standards, CARB staff needs the manufacturer to provide specific information about the test vehicle, test procedures, and test results. New information is required that corresponds to various aspects of the proposed test procedures. EU regulations include an extensive list of data that needs to be provided to the European Type approval Authority. This subsection includes only the portions of that list that are necessary for CARB staff to evaluate compliance with California regulations. Information that the manufacturer must submit includes general vehicle construction characteristics, masses and dimensions, general powertrain characteristics, general information on environmental performance, and fuel system information.

Subsection (j)

Purpose: Subsection (j) is added to provide instructions on where manufacturers must submit their certification application.

Rationale: Subsection (j) is necessary to provide information on how to submit an application for certification. The E-File system is already being used by on-road

motorcycle manufacturers to provide certification application information and annual sales data to CARB, so it is convenient for manufacturers and CARB staff to continue using the established E-File system for future application submissions.

Subsection (k)

Purpose: Subsection (k) is added to establish more stringent emission limits for Class IA motorcycles, defined as those with engines under 50 cc displacement. Class IA motorcycles are currently exempt from CARB emissions standards under subsection (a)(1). However, they are subject to U.S. EPA emissions standards under 40 CFR § 86.410-2006 (a)(1) with an allowable emissions limit of 1g/km hydrocarbon and 12 g/km carbon monoxide. Imposing more stringent emission standards on this category will help to reduce overall motorcycle emissions and improve California's air quality.

Rationale: Subsection (k) is necessary to reduce emissions from Class IA motorcycles in California from model year 2028 and subsequent. Class IA motorcycles generally have low power and are used for short trips in urban areas, or within a defined operating area such as college campuses or corporate facilities. Their typical usage pattern is well suited to the power, performance, and range capabilities of currently available zero-emission battery-electric technology. Staff is therefore proposing that, for model year 2028 and beyond, motorcycles in this category must all be zero-emission. This could include any technology that meets the definition of "zero-emission motorcycle" in section 1958.4, including but not limited to battery-electric and hydrogen fuel cell motorcycles. Zero-emission motorcycles (ZEMs) offer significant emissions benefits as compared to conventional gasoline powered motorcycles, and this proposal seeks to reduce emissions from this sector of the motorcycle market as quickly as feasible. Requiring all Class IA motorcycle sales in California to be zero-emission starting in model year 2028 helps to advance that goal in conjunction with the additional ZEM measures proposed in sections 1958.4 through 1958.7.

Battery electric ZEMs are the primary technology in the marketplace today, although the regulation does not limit or specify which ZEM technologies are allowed. As discussed in Section C of the Staff Report, battery electric ZEM technology is readily available and many ZEMs are already available on the market today. However, ZEMs tend to be more expensive than a comparable internal combustion motorcycles and limited battery capacity may not meet some motorcycle riders' expectations for extended riding range. The limitations of current battery electric ZEMs are least

significant in smaller motorcycles such as Class IA, where cost differentials are lowest and customer's expectations for riding range tend to be much lower.

Staff estimates that Class IA motorcycles currently make up approximately 1.8% of annual California motorcycle sales, or approximately 900 units per year. There are several ZEM models available on the market today that can readily displace existing Class IA sales. Additional ZEM models are currently in development and expected to be available by model year 2028. These ZEMs will satisfy the needs of most Class IA riders, who typically use small motorcycles (generally scooters) for short trips on surface streets in urban and suburban locations. Class IA riders whose needs cannot be met by a ZEM in 2028 and later can opt to purchase a conventional gasoline powered motorcycle with engine displacement greater than 50 cc that is certified to meet applicable exhaust standards.

Section 1958.1 - End of Model Year Reporting of Street-Use Motorcycle Sales.

Subsection (a)

Purpose: Subsection (a) is added to establish the requirement that manufacturers must submit an annual report documenting the number of street-use motorcycles produced and delivered for sale each model year by April 1 after the end of the model year, starting with reporting of model year 2024 by April 1, 2025.

Rationale: Subsection (a) is necessary because annual reporting of California motorcycles is required in current regulation through 40 CFR § 86.415-78(b) as incorporated in section 1958, subsection (c). Annual production numbers will be used establish applicability of exhaust, OBD, and evaporative requirements for small versus large volume manufacturers under sections 1958, 1958.2, and 1976, respectively. Annual reports will also be used to support administration of the new ZEM credit program created under sections 1958.4 through 1958.7 of this proposal. Section 1958.1 provides a consolidated requirement for annual reporting that can be concisely referenced from all other sections in the regulation where reports are required. The reporting timeline has been modified to April 1 after the end of the model year for consistency with other CARB regulations and to provide certainty to manufacturers. This timeline has similarly been modified in the adoption of 40 CFR § 86.415-78(b) in the exhaust test procedure. See also, Appendix B1 and Appendix D1.

Subsection (b)

Purpose: Subsection (b) is added to clarify that “sales” as used in this section means “produced and delivered for sale” and how to count motorcycles that are manufactured by one company and marketed by another.

Rationale: Subsection (b) is necessary to clarify the definition of “sales” and how to count motorcycles that are manufactured by one company and marketed by another. This definition aligns with CARB authority. Without this clarification both companies might report sales of the same motorcycle, resulting in an overcounting of total sales. Alternatively, both companies might fail to report sales of the motorcycle, resulting in an undercounting of total sales.

Subsection (c)

Purpose: Subsection (c) is added to specify that the annual report must contain all information required under 40 CFR § 86.415-78(b).

Rationale: Subsection (c) is necessary to ensure that the current requirement for manufacturers to submit this information is continued beyond model year 2027. 40 CFR § 86.415-78(b) is currently incorporated by reference in section 1958, subsection (c), but the proposal limits this section to model year 2027 and prior motorcycles. This subsection mirrors that existing requirement and extends it beyond 2027.

Subsection (d)(1) through (d)(6)

Purpose: Subsection (d)(1) through (d)(6) are added to specify that annual motorcycle numbers must be reported by motorcycle class for conventional internal combustion and by tier for zero-emission motorcycles.

Rationale: Subsection (d)(1) through (d)(6) are necessary because CARB staff will need detailed sales reporting, by motorcycle class and tier, in order to accurately calculate each manufacturer’s ZEM credits in accordance with section 1958.5, subsections (b)-(e), and ZEM credit obligations in accordance with section 1958.6, subsections (d) and (e).

Subsection (d)(7)

Purpose: Subsection (d)(7) is added to specify that the annual report must contain all information required to calculate the manufacturer’s ZEM credit obligations and credits earned for the model year.

Rationale: Subsection (d)(7) is necessary to ensure that CARB receives all information necessary to calculate the manufacturer's ZEM credit obligations and credits earned for the model year. Without this information CARB would be unable to determine whether a manufacturer has earned or traded for adequate ZEM credits to meet their annual obligations, thereby making it impossible to enforce the ZEM credit program requirements.

Subsection (e)

Purpose: Subsection (e) is added to explain how to report aggregated annual sales in cases where two or more manufacturers share common ownership or corporate oversight.

Rationale: Subsection (e) is necessary to ensure accurate annual reporting in cases when two or more firms share common ownership or corporate oversight. Several regulatory requirements are based on annual sales, including small volume manufacturer provisions for exhaust, OBD, and evaporative standards as well as zero-emission credit obligations. Manufacturers have an incentive to disaggregate their California sales into several seemingly separate manufacturers (companies or brands) to qualify for less stringent small volume manufacturer provision or reduce their ZEM credit obligations. Subsection (e) is intended to prevent this disaggregation and ensure accurate reporting by each firm.

Subsection (f)

Purpose: Subsection (f) is added to provide instructions on where manufacturers must submit their end-of-year reporting of street-use motorcycle sales.

Rationale: Subsection (f) is necessary because manufacturers cannot comply with reporting requirements unless they are provided clear instructions on where to submit the report. The E-File system is already being used by on-road motorcycle manufacturers to provide certification application information and annual sales data to CARB, so it is convenient for manufacturers and CARB staff to continue using the established E-File system for future data submission.

Subsection (g)

Purpose: Subsection (g) is added to provide that each provision of this section is severable.

Rationale: Subsection (g) is necessary to preserve remaining requirements of this section in the event any other provision is held to be invalid.

Section 1976 - Standards and Procedures for Motor Vehicle Fuel Evaporative Emissions.

Subsections (b)(1)(F), (b)(1)(G)1.a., (b)(1)(G)1.b., (b)(1)(G)1.b. table footnote 6, and (b)(1)(G)6.

Purpose: The purpose of these subsections is to establish evaporative emission standards for 2004 and subsequent model motor vehicles and to identify the applicable evaporative emission test procedure that must be used to demonstrate compliance with the requirements set forth in each subsection. The title of one of the documents that is referenced in these subsections is being changed from the "California Evaporative Emission Standards and Test Procedures for 2001 and Subsequent Model Motor Vehicles" to the "California Evaporative Emission Standards and Test Procedures for 2001 through 2025 Model Year Passenger Cars, Light-Duty Trucks, Medium-Duty Vehicles, and Heavy-Duty Vehicles and 2001 through 2027 Model Year Motorcycles."

Rationale: The change to the name of the referenced document is necessary because the title of this document was changed in a prior rulemaking, but the associated references in these sections were not correspondingly changed. As the title of the document is being changed again in this rulemaking, the correct and most up-to-date title is added.

Subsection (b)(1)(G)7.

Purpose: The purpose of this subsection is to establish evaporative emission requirements for auxiliary engines and fuel systems used in 2015 and subsequent model year vehicles. The title of one of the documents that is referenced in this subsection is being changed from the "California Evaporative Emission Standards and Test Procedures for 2001 through 2025 Model Year Passenger Cars, Light-Duty Trucks, Medium-Duty Vehicles, and Heavy-Duty Vehicles and 2001 and Subsequent Model Year Motorcycles" to the "California Evaporative Emission Standards and Test Procedures for 2001 through 2025 Model Year Passenger Cars, Light-Duty Trucks, Medium-Duty Vehicles, and Heavy-Duty Vehicles and 2001 through 2027 Model Year Motorcycles."

Rationale: The change to the name of the referenced document is necessary because the title of this document is being changed in this rulemaking.

Subsection (b)(2).

Purpose: The purpose of this subsection is to establish the new evaporative emissions standards for model year 2028 and subsequent model year on-road motorcycles. It is necessary to change the values of this subsection because the standards contained herein will no longer apply for Class I, II, and III motorcycles in model year 2028 and subsequent model years. It is also necessary to modify the table to clarify the change in emissions testing and note the highest results over multiple diurnal testing periods. A row has been added establish the evaporative emissions standards for small volume manufacturers.

Rationale: The evaporative limits specified in this section (1 gram/day diurnal limit, 0.2 grams/test hot soak limit) were selected based on results of CARB evaporative emissions testing as described in Appendix E2. This testing showed that some current motorcycle models are already meeting the standards, and that any ONMC could meet the standard by incorporating readily available evaporative emissions controls including low permeation materials and a properly designed carbon canister. Small volume manufacturers may not have the technical and financial resources required to meet the new evaporative standards, and the difference in evaporative emissions from their small number of motorcycles will be relatively low, so they may continue certifying to the current evaporative emissions standards in model year 2028 and beyond. The limits are technically feasible and will provide significant reduction of evaporative emissions overall as compared to the current standards. The changes to this subsection are necessary to reflect the new requirements.

Change of Numbering for Subsection (b)(2)(H)

Purpose: The purpose of this subsection is to establish evaporative emissions standards for model year 2026 and subsequent model year light- and medium-duty vehicles in addition to the requirements in section 1976, subsection (b)(1)(G). This subsection (H) is currently printed as a subsection to (b)(2), which only applies to on-road motorcycles.

Rationale: It is necessary to correct the misnumbering of subsection (H) to clearly show that the requirements contained therein apply to light- and medium-duty vehicles and not to motorcycles. Since subsection (H) does not apply to on-road

motorcycles, it is necessary to move subsection (H) from subsection (b)(2) to subsection (b)(1). There are no changes being proposed to subsection (H). This is a non-substantial change as it is a printing error.

Subsection (c).

Purpose: The purpose of this subsection is to identify the titles of the test procedures that contain the certification requirements and test procedures for determining compliance with the emission standards in this section 1976 and to incorporate those test procedures by reference. This subsection is being amended to clearly identify the test procedures that must be followed to demonstrate compliance with the standards set forth in this section, based on the applicable model year of the standards and to clarify which evaporative test procedures apply to light-duty vehicles, medium-duty vehicles, heavy-duty vehicles, and motorcycles of various model years.

Rationale: This subsection is necessary to provide clear and consistent methods for manufacturers to use to demonstrate compliance with section 1976. This change is necessary so that manufacturers of light-duty vehicles, medium-duty vehicles, heavy-duty vehicles, and motorcycles will know which test procedures apply to their vehicles in any given model year. The term “vehicles” includes light-duty vehicles, medium-duty vehicles, heavy-duty vehicles, and motorcycles. Under current regulations, each of these vehicle categories uses the same evaporative test procedure through model year 2025. CARB’s recent Advanced Clean Cars II rulemaking included a new test procedure that is applicable for all model year 2026 and subsequent vehicle classes other than motorcycles. Staff is now proposing a separate evaporative test procedure for model year 2028 and subsequent motorcycles. Subsection (c) is being broken down into six subparagraphs to clarify which procedures apply to each vehicle type in a given model year.

Subsection (c)(1).

Purpose: The purpose of this subsection is to identify and incorporate by reference the test procedures for determining compliance with the standards in subsections (b)(1) and (b)(2) that are applicable to 1978 through 2000 model year vehicles. The requirements in this subsection are identical to those in the current regulation section 1976, subsection (c) for these model years.

Rationale: It is necessary to identify and incorporate by reference the applicable test procedures in separate subsections of subsection (c), based on model year to ensure clarity of the requirements.

Subsection (c)(2).

Purpose: The purpose of this subsection is to identify and incorporate by reference the test procedures for determining compliance with the standards in subsection (b)(1) applicable to 2001 through 2025 model year passenger cars, light-duty trucks, medium-duty vehicles, and heavy-duty vehicles and with standards in subsection (b)(2) applicable to 2001 through 2027 model year motorcycles. The requirements in this subsection are identical to those in the current regulation section 1976, subsection (c) for these model years, except that the title of the incorporated test procedure has been changed.

Rationale: It is necessary to identify and incorporate by reference the applicable test procedures in separate subsections of subsection (c), based on model year to ensure clarity of the requirements. It is necessary to change the title of the incorporated test procedure, because it is being changed by this rulemaking to reflect the fact that motorcycles in model year 2028 and subsequent will be required to use a different test procedure.

Subsection (c)(3).

Purpose: The purpose of this subsection is to identify and incorporate by reference the test procedures for determining compliance with the standards in subsection (b)(1) applicable to 2026 and subsequent model year vehicles other than motorcycles. The requirements in this subsection are identical to those in the current regulation section 1976, subsection (c) for these model years, except that language has been added to explicitly exclude motorcycles from this requirement. This exclusion does not change the substance of this requirement, because the title of the incorporated test procedure does not include motorcycles,

Rationale: It is necessary to identify and incorporate by reference the applicable test procedures in separate subsections of subsection (c), based on model year to ensure clarity of the requirements.

Subsection (c)(4).

Purpose: The purpose of this subsection is to establish the new evaporative emissions test procedure for model year 2028 and subsequent model year on-road motorcycles. The new test procedure to be applicable beginning in the 2028 model year, TP-934, "Test Procedure for Determining Evaporative Emissions from Model Year 2028 and Subsequent On-Road Motorcycles", has been added as a document incorporated by reference.

Rationale: It is necessary to identify and incorporate by reference the new applicable test procedure to provide clear and consistent methods for manufacturers to use to demonstrate compliance with the 2028 and subsequent model year standards for motorcycles in subsection (b)(2). This test procedure is excepted to significantly reduce emissions compared to the current motorcycle evaporative test procedure. It includes a three-day evaporative emissions test with summertime diurnal temperature fluctuation of a 65F overnight low to 105F daily high temperature. The test is intended to represent multi-day storage that is typical of recreational motorcycle usage in California, where riders may use their motorcycle on the weekend then park it for several days. The current test procedure measures evaporative emissions over only a two-hour period where fuel temperatures are artificially elevated by an external heat source. CARB staff testing indicates that the current test procedure does not accurately reflect real world motorcycle usage and does not predict effective evaporative emissions control under typical usage patterns. More in-depth discussion of the new motorcycle evaporative test procedure, TP-934, can be found in Section IV, B of the Staff Report, Appendix D4, and Appendix E2.

Subsection (c)(5).

Purpose: The purpose of this subsection is to establish a three year phase-in requirement, for model years 2028 through 2030, for the standards in subsection (b)(2) and test procedures in subsection (c)(4).

Rationale: The phase-in requirements are necessary to provide manufacturers with flexibility in meeting new emission standards, while ensuring the emission reductions from the proposal are achieved. This three-year phase-in provision corresponds with the phase-in of more stringent exhaust emissions standards and on-board diagnostic requirements over the same period. A three-year phase-in period was chosen to address manufacturers' concerns with the logistics involved in completing required certification testing for all California models in a single model year. Limitations on critical testing resources (dynamometers, test engineers, analytical equipment, third-party testing labs, etc.) make it challenging for manufacturers to perform the required emissions testing and durability demonstrations on all their engine families in a single model year. This problem is compounded by the fact that the proposal includes new on-board diagnostic (OBD) and exhaust emissions standards that begin concurrently with the proposed evaporative standards and also include significant testing requirements. Staff agrees with manufacturers that implementing the new exhaust, OBD, and evaporative requirements on all engine families in a single model year would not be feasible. The chosen percentage phase-in schedule will let manufacturers spread out their certification testing workload into roughly even

portions across three model years, eliminating the need for excessive testing in any single year. Spreading certification testing evenly across three model years provides flexibility and should allow manufacturers to complete required testing using existing test facilities (manufacturer-owned laboratories or third-party laboratories) while still addressing the need to reduce emissions as expeditiously as possible.

Subsection (c)(6).

Purpose: The purpose of this subsection is to allow small volume motorcycle manufacturers to continue to use the current test procedure “California Evaporative Emission Standards and Test Procedures for 2001 through 2025 Model Year Passenger Cars, Light-Duty Trucks, Medium-Duty Vehicles, and Heavy-Duty Vehicles and 2001 through 2027 Model Year Motorcycles” to certify vehicles in 2028 and subsequent model years rather than the new TP-934 “Test Procedure for Determining Evaporative Emissions from Model Year 2028 and Subsequent On-Road Motorcycles”, except one new requirement for fuel cap durability cycling as contained in section 4.4 of TP-934.

Rationale: It is necessary to continue to allow small volume motorcycle manufacturers to certify their vehicles to the current evaporative emission test procedure to provide them with additional flexibility and lower the cost of compliance in meeting new emission standards, thereby reducing the financial burden for these manufacturers. Small volume motorcycle manufacturers may not have the technical and financial resources required to meet the new evaporative standards, and the difference in evaporative emissions from their small number of motorcycles will be relatively low, so they may continue certifying to the current evaporative emissions standards in model year 2028 and beyond. However, during the evaporative emissions testing project discussed in Appendix E2, CARB staff observed several motorcycle fuel tanks with vapor leaks at the fuel cap. To help address emissions from this common leak point and improve durability of the fuel cap seal, small volume motorcycle manufacturers will need to conduct fuel cap durability cycling prior to measuring evaporative emissions.

Subsection (d).

Purpose: The purpose of this subsection is to define the additional exemptions to the requirements of the “Specifications for Fill Pipes and Openings of Motor Vehicle Fuel Tanks” This subsection has been amended to specify how the requirements apply to motorcycles for model year 2028 and subsequent.

Rationale: It is necessary to revise this subsection to say that the requirements of this subsection apply through model year 2027 because starting in model year 2028 on-road motorcycles will be required to comply with more stringent evaporative standards in section 1976, subsection (b)(2). The proposed standard has been reduced which will in turn reduce emissions and makes compliance with the fill pipe standard unnecessary, similarly to how model years 1983-2027 are exempt from the standard if certified to 0.2 grams per test or more below the applicable emission standard. However, that exemption, which is now limited to model years 1983-2027, is still applicable for small volume motorcycle manufacturers, as they may continue to certify to the higher evaporative standard. Therefore, the exemption is allowed after model year 2027 for small volume motorcycle manufacturer to preserve this compliance option.

Subsection (f)(1).

Purpose: The purpose of this subsection is to specify the definition of “small volume motorcycle manufacturer” for purposes of this section. This subsection says the definition for small volume motorcycle manufacturer has changed for model year 2028 and subsequent.

Rationale: It is necessary to revise this subsection to say that the definition of small volume motorcycle manufacturer will change for MY 2028 and subsequent. The current small volume manufacturer limit is 5000 California sales per year, which is much higher than the proposed 300 sales per year and would apply to all but the top three selling motorcycle manufacturers in most years based on CARB staff analysis of recent DMV registration data. However, there are currently no special provisions or relaxed evaporative emission control requirements for small volume motorcycle manufacturers. The only exception to evaporative requirements for small volume motorcycle manufacturers was a delay in the 2 grams/test standard from 1986 through 1988. From 1989 onward, evaporative requirements are the same for small manufacturers as for all other manufacturers. So, while it may appear that lowering the sales limit from 5000 to 300 is a significant change, it has no tangible effect on manufacturers since they are currently receiving no benefit from qualifying as a small volume motorcycle manufacturer under the current evaporative requirements.

Staff has revised the definition of small volume motorcycle manufacturer for evaporative requirements so that it refers to manufacturers who sell less than 300 motorcycles per year. This is the same sales limit used to define small volume manufacturers in the exhaust and OBD requirements in sections 1958 and 1958.2 respectively. Data suggests that manufacturers who sell more than 300 motorcycles

per year are the top sellers in California and will have adequate technical and financial resources to comply with the new, more stringent evaporative emissions test procedures and standards applicable for model year 2028 and subsequent. The value of 300 sales per year for model year 2028 and subsequent is also consistent with the annual sales threshold for small volume manufacturers in the corresponding exhaust and on-board diagnostic requirements. Manufacturers selling fewer than 300 motorcycles per year in California can continue to certify their evaporative systems to the current limits using the current test procedures, as described in subsection (c)(6).

Section 2036 - Defects Warranty Requirements for 1979 Through 1989 Model Passenger Cars, Light-Duty Trucks, Medium-Duty Vehicles; 1979 and Subsequent Model Motorcycles and Heavy-Duty Vehicles; and Motor Vehicle Engines Used in Such Vehicles; and 2020 and Subsequent Model Year Trailers.

Subsection (b)(2)

Purpose: Subsection (b)(2) is amended to reflect the addition of new subsection (b)(2)(D), and to correct grammatical errors in the existing regulatory text.

Rationale: Amendment to subsection (b)(2) is necessary to clarify that the language therein applies to the newly added subsection (b)(2)(D).

Subsection (b)(2)(C)

Purpose: Subsection (b)(2)(C) is amended to delete redundant language.

Rationale: Amendments to subsection (b)(2)(C) are non-substantive. The language deleted in this amendment is duplicative of language in (b)(2).

Subsection (b)(2)(D)

Purpose: Subsection (b)(2)(D) is added to include Class III motorcycles that are equipped with certified on-board diagnostic systems.

Rationale: Subsection (b)(2)(D) is necessary to link warranty coverage to malfunction indication from the on-board diagnostic (OBD) system in model year 2028 and subsequent motorcycles so equipped. OBD systems monitor various aspects of engine performance and trigger a malfunction indicator light when emissions control systems are not performing within a defined specification or limit. This OBD malfunction indicator, commonly referred to as a "check engine light," prompts the

vehicle owner to seek repair for the failure. Prompt repair ensures proper functionality of the emissions control system, delivering real world emissions benefits. Manufacturers are responsible for providing a robust emissions control system that is subject to warranty coverage. CARB has regulations in place for all OBD-equipped vehicle categories that ties warranty coverage to the OBD malfunction indicator light. Class III motorcycles will now be equipped with OBD starting in model year 2028, so it is appropriate to include them to the list of vehicles with warranty coverage ties to the OBD malfunction indicator light.

Subsections (c)(2) and (3)

Purpose: Subsections (c)(2) and (3) are amended to update the useful life mileage of Class II and Class III motorcycles for model year 2028 and subsequent.

Rationale: Amendments to subsection (c)(2) and (3) are necessary to maintain consistency with the amended useful life mileage distances that are included in the new exhaust test procedure “California 2028 and Subsequent Model Year Exhaust Emission Standards and Test Procedures for On-Road Motorcycles”, incorporated by reference into section 1958, subsection (h)(4), and in the amended warranty provisions in section 2112(l). Refer to section IV. D. of the staff report for a discussion of why useful life mileage distances have been amended for Class II and Class III motorcycles.

Subsection(c)(8)(A)

Purpose: Subsection (c)(8)(A) is amended to correct typographical errors in the existing regulatory text.

Rationale: Amendments to subsection (c)(8)(A) are non-substantive.

Subsection (f)(1)(F)

Purpose: Subsection (f)(1)(F) is added to establish the requirement that manufacturers must provide a list of any parts that can cause illumination of the OBD malfunction indicator light.

Rationale: Subsection (f)(1)(F) is necessary to clarify which parts are covered by the warranty provisions of subsection (b)(2)(D). Manufacturers are required to provide warranty coverage for any parts where defects in materials or workmanship can lead to illumination of the OBD malfunction indication light. OBD monitoring strategies and related components can vary among manufacturers and models, so it is

necessary to have a comprehensive list of covered parts for each vehicle. This requirement is new for motorcycles because section 1958.2 of the proposal requires OBD for motorcycles beginning in model year 2028 and beyond. However, the requirement of subsection (f)(1)(F) is consistent with requirements for other OBD-equipped vehicle classes as shown in subsections (f)(1)(A) through (f)(1)(D).