

(1) In the application for certification:

(i) A statement that the engines for which certification is requested will not, to the best of the manufacturer's belief, when included in any of the averaging, trading, or banking programs cause the applicable NO_x or particulate standard(s) to be exceeded.

(ii) The type (NO_x or particulate) and the projected number of credits generated/needed for this family, the applicable averaging set, the projected U.S. (49-state) production volumes, by quarter, NCPs in use on a similar family and the values required to calculate credits as given in § 86.091-15. Manufacturers shall also submit how and where credit surpluses are to be dispersed and how and through what means credit deficits are to be met, as explained in § 86.091-15. The application must project that each engine family will be in compliance with the applicable NO_x and/or particulate emission standards based on the engine mass emissions, and credits from averaging, trading and banking.

(2) End-of-year reports for each engine family participating in any of the averaging, trading, or banking programs.

(i) These reports shall be submitted within 90 days of the end of the model year to: Director, Manufacturers Operations Division (EN-6405J), U.S. Environmental Protection Agency, 1200 Pennsylvania Ave., NW., Washington, DC 20460.

(ii) These reports shall indicate the engine family, the averaging set, the actual U.S. (49-state) production volume, the values required to calculate credits as given in § 86.091-15, the resulting type (NO_x or particulate) and number of credits generated/required, and the NCPs in use on a similar NCP family. Manufacturers shall also submit how and where credit surpluses were dispersed (or are to be banked) and how and through what means credit deficits were met. Copies of contracts related to credit trading must also be included or supplied by the broker if applicable. The report shall also include a calculation of credit balances to show that net mass emissions balances are within those allowed by the emission standards (equal to or

greater than a zero credit balance). The credit discount factor described in § 86.091-15 must be included as required.

(iii) The 49-state production counts for end-of-year reports shall be based on the location of the first point of retail sale (e.g., customer, dealer, secondary manufacturer) by the manufacturer.

(iv) Errors discovered by EPA or the manufacturer in the end-of-year report, including changes in the 49 state production counts, may be corrected up to 180 days subsequent to submission of the end-of-year report. Errors discovered by EPA after 180 days shall be corrected if credits are reduced. Errors in the manufacturer's favor will not be corrected if discovered after the 180 day correction period allowed.

(i) Failure by a manufacturer participating in the averaging, trading, or banking programs to submit any quarterly or end-of-year report (as applicable) in the specified time for all vehicles and engines that are part of an averaging set is a violation of section 203(a)(1) of the Clean Air Act for each such vehicle and engine.

(j) Failure by a manufacturer generating credits for deposit only in either the HDE NO_x or particulate banking programs to submit their end-of-year reports in the applicable specified time period (i.e., 90 days after the end of the model year) shall result in the credits not being available for use until such reports are received and reviewed by EPA. Use of projected credits pending EPA review will not be permitted in these circumstances.

(k) Engine families certified using NCPs are not required to meet the requirements outlined above.

[59 FR 14108, Mar. 25, 1994]

§ 86.092-24 Test vehicles and engines.

(a)(1) The vehicles or engines covered by an application for certification will be divided into groupings of engines which are expected to have similar emission characteristics throughout their useful life. Each group of engines with similar emission characteristics shall be defined as a separate engine family.

(2) To be classed in the same engine family, engines must be identical in all the following respects:

(i) The cylinder bore center-to-center dimensions.

(ii)-(iii) [Reserved]

(iv) The cylinder block configuration (air cooled or water cooled; L-6, 90° V-8, etc.).

(v) The location of the intake and exhaust valves (or ports).

(vi) The method of air aspiration.

(vii) The combustion cycle.

(viii) Catalytic converter characteristics.

(ix) Thermal reactor characteristics.

(x) Type of air inlet cooler (e.g., intercoolers and after-coolers) for diesel heavy-duty engines.

(3)(i) Engines identical in all the respects listed in paragraph (a)(2) of this section may be further divided into different engine families if the Administrator determines that they may be expected to have different emission characteristics. This determination will be based upon a consideration of the following features of each engine:

(A) The bore and stroke.

(B) The surface-to-volume ratio of the nominally dimensioned cylinder at the top dead center positions.

(C) The intake manifold induction port size and configuration.

(D) The exhaust manifold port size and configuration.

(E) The intake and exhaust valve sizes.

(F) The fuel system.

(G) The camshaft timing and ignition or injection timing characteristics.

(ii) Light-duty trucks and heavy-duty engines produced in different model years and distinguishable in the respects listed in paragraph (a)(2) of this section shall be treated as belonging to a single engine family if the Administrator requires it, after determining that the engines may be expected to have similar emission deterioration characteristics.

(4) Where engines are of a type which cannot be divided into engine families based upon the criteria listed in paragraphs (a)(2) and (a)(3) of this section, the Administrator will establish families for those engines based upon those features most related to their emission characteristics. Engines that are eligible to be included in the same engine family based on the criteria in paragraphs (a)(2) and (a)(3)(i) of this section

may be further divided into different engine families if the manufacturer determines that they may be expected to have different emission characteristics. This determination will be based upon a consideration of the following features of each engine:

(i) The dimension from the center line of the crankshaft to the center line of the camshaft.

(ii) The dimension from the center line of the crankshaft to the top of the cylinder block head face.

(iii) The size of the intake and exhaust valves (or ports).

(5) The gasoline-fueled and methanol-fueled light-duty vehicles and light-duty trucks covered by an application for certification will be divided into groupings which are expected to have similar evaporative emission characteristics throughout their useful life. Each group of vehicles with similar evaporative emission characteristics shall be defined as a separate evaporative emission family.

(6) For gasoline-fueled or methanol-fueled light-duty vehicles and light-duty trucks to be classed in the same evaporative emission family, vehicles must be similar with respect to:

(i) Type of vapor storage device (e.g., canister, air cleaner, crankcase).

(ii) Basic canister design.

(iii) Fuel system.

(7) Where vehicles are of a type which cannot be divided into evaporative emission families based on the criteria listed above, the Administrator will establish families for those vehicles based upon the features most related to their evaporative emission characteristics.

(8)(i) If the manufacturer elects to participate in the Alternative Durability Program, the engine families covered by an application for certification shall be grouped based upon similar engine design and emission control system characteristics. Each of these groups shall constitute a separate engine family group.

(ii) To be classed in the same engine family group, engine families must contain engines identical in all of the following respects:

(A) The combustion cycle.

(B) The cylinder block configuration (air-cooled or water-cooled; L-6, V-8, rotary, etc.).

(C) Displacement (engines of different displacement within 50 cubic inches or 15 percent of the largest displacement and contained within a multi-displacement engine family will be included in the same engine family group).

(D) Catalytic converter usage and basic type (non-catalyst, oxidation catalyst only, three-way catalyst equipped).

(9) Engine families identical in all respects listed in paragraph (a)(8) of this section may be further divided into different engine family groups if the Administrator determines that they are expected to have significantly different exhaust emission control system deterioration characteristics.

(10) A manufacturer may request the Administrator to include in an engine family group, engine families in addition to those grouped under the provisions of paragraph (a)(8) of this section. This request must be accompanied by information the manufacturer believes supports the inclusion of these additional engine families.

(11) A manufacturer may combine into a single engine family group those light-duty vehicle and light-duty truck engine families which otherwise meet the requirements of paragraphs (a)(8) through (a)(10) of this section.

(12) The vehicles covered by an application for certification equipped with gasoline-fueled and methanol-fueled heavy-duty engines will be divided into groupings of vehicles on the basis of physical features which are expected to affect evaporative emissions. Each group of vehicles with similar features shall be defined as a separate evaporative emission family.

(13) For gasoline-fueled or methanol-fueled heavy-duty vehicles to be classified in the same evaporative emission family, vehicles must be identical with respect to:

(i) Method of fuel/air metering (i.e., carburetion versus fuel injection).

(ii) Carburetor bowl fuel volume, within a 10 cc range.

(14) For vehicles equipped with gasoline-fueled and methanol-fueled heavy-duty engines to be classified in the

same evaporative emission control system, vehicles must be identical with respect to:

(i) Method of vapor storage.

(ii) Method of carburetor sealing.

(iii) Method of air cleaner sealing.

(iv) Vapor storage working capacity, within a 20g range.

(v) Number of storage devices.

(vi) Method of purging stored vapors.

(vii) Method of venting the carburetor during both engine off and engine operation.

(viii) Liquid fuel hose material.

(ix) Vapor storage material.

(15) Where vehicles equipped with gasoline-fueled or methanol-fueled heavy-duty engines are types which cannot be divided into evaporative emission family-control system combinations based on the criteria listed above, the Administrator will establish evaporative emission family-control system combinations for those vehicles based on features most related to their evaporative emission characteristics.

(16) No 1992 or later model year heavy-duty engine which is to be used to generate emission credits for 1992 and later banking, trading and averaging programs may also utilize non-conformance penalties (NCPs). Use of an NCP thus becomes an engine family criterion.

(i) Use of either a NO_x or a particulate matter NCP by an engine family precludes that family from generating either NO_x or particulate matter emission credits.

(ii) If a manufacturer desires to use both banked credits and NCPs on an engine family, two separate engine families must be established. One engine family must consist of engines certified for only credit use following the procedure specified in this subpart. The other engine family must be certified for only NCP use following the procedure as specified in 40 CFR part 86, subpart L.

(b) *Emission data*—(1) *Emission-data vehicles*. Paragraph (b)(1) of this section applies to light-duty vehicle and light-duty truck emission-data vehicles.

(i) Vehicles will be chosen to be operated and tested for emission data based upon engine family groupings. Within each engine family, one test vehicle will be selected based on the following

criteria: The Administrator shall select the vehicle with the heaviest equivalent test weight (including options) within the family. Then within that vehicle the Administrator shall select, in the order listed, the highest road-load power, largest displacement, the transmission with the highest numerical final gear ratio (including overdrive), the highest numerical axle ratio offered in that engine family, and the maximum fuel flow calibration.

(ii) The Administrator shall select one additional test vehicle from within each engine family. The vehicle selected shall be the vehicle expected to exhibit the highest emissions of those vehicles remaining in the engine family. If all vehicles within the engine family are similar the Administrator may waive the requirements of this paragraph.

(iii) Within an engine family and exhaust emission control system, the manufacturer may alter any emission-data vehicle (or other vehicles such as including current or previous model year emission-data vehicles, fuel economy data vehicles, and development vehicles provided they meet emission-data vehicles' protocol) to represent more than one selection under paragraph (b)(1) (i), (ii), (iv), or (vii) of this section.

(iv) If the vehicles selected in accordance with paragraphs (b)(1) (i) and (ii) of this section do not represent each engine-system combination, then one vehicle of each engine-system combination not represented will be selected by the Administrator. The vehicle selected shall be the vehicle expected to exhibit the highest emissions of those vehicles remaining in the engine family.

(v) For high-altitude exhaust emission compliance for each engine family, the manufacturer shall follow one of the following procedures:

(A) The manufacturer will select for testing under high-altitude conditions the vehicle expected to exhibit the highest emissions from the nonexempt vehicles selected in accordance with paragraphs (b)(1) (ii), (iii), and (iv) of this section or,

(B) In lieu of testing vehicles according to paragraph (b)(1)(v)(A) of this section, a manufacturer may provide a

statement in its application for certification that, based on the manufacturer's engineering evaluation of such high-altitude emission testing as the manufacturer deems appropriate,

(1) That all light-duty vehicles not exempt under § 86.090-8(h) comply with the emission standards at high altitude; and

(2) That light-duty trucks sold for principal use at designated high-altitude locations comply with the high-altitude emission requirements and that all light-duty trucks sold at low altitude, which are not exempt under § 86.091-9(g)(2), are capable of being modified to meet high-altitude standards.

(vi) If 90 percent or more of the engine family sales will be in California, a manufacturer may substitute emission-data vehicles selected by the California Air Resources Board criteria for the selections specified in paragraphs (b)(1) (i), (ii), and (iv) of this section.

(vii)(A) Vehicles of each evaporative emission family will be divided into evaporative emission control systems.

(B) The Administrator will select the vehicle expected to exhibit the highest evaporative emissions, from within each evaporative family to be certified, from among the vehicles represented by the exhaust emission-data selections for the engine family, unless evaporative testing has already been completed on the vehicle expected to exhibit the highest evaporative emissions for the evaporative family as part of another engine family's testing.

(C) If the vehicles selected in accordance with paragraph (b)(1)(vii)(B) of this section do not represent each evaporative emission control system then the Administrator will select the highest expected evaporative emission vehicle from within the unrepresented evaporative system.

(viii) For high-altitude evaporative emission compliance for each evaporative emission family, the manufacturer shall follow one of the following procedures:

(A) The manufacturer will select for testing under high-altitude conditions the one nonexempt vehicle previously selected under paragraphs (b)(1)(vii) (B) or (C) of this section which is expected to have the highest level of evaporative

emissions when operated at high altitude or

(B) In lieu of testing vehicles according to paragraph (b)(1)(viii)(A) of this section, a manufacturer may provide a statement in its application for certification that based on the manufacturer's engineering evaluation of such high-altitude emission testing as the manufacturer deems appropriate,

(1) That all light-duty vehicles not exempt under § 86.090-8(h) comply with the emission standards at high altitude, and

(2) That light-duty trucks sold for principal use at designated high-altitude locations comply with the high-altitude emission requirements and that all light-duty trucks sold at low-altitude, which are not exempt under § 86.091-9(g)(2), are capable of being modified to meet high-altitude standards.

(ix) Vehicles selected under paragraph (b)(1)(v)(A) of this section may be used to satisfy the requirements of (b)(1)(viii)(A) of this section.

(x) *Light-duty trucks only:* (A) The manufacturer may reconfigure any of the low-altitude emission-data vehicles to represent the vehicle configuration required to be tested at high altitude.

(B) The manufacturer is not required to test the reconfigured vehicle at low altitude.

(2) *Otto-cycle heavy-duty emission-data engines.* Paragraph (b)(2) of this section applies to Otto-cycle heavy-duty engines.

(i)-(ii) [Reserved]

(iii) The Administrator shall select a maximum of two engines within each engine family based upon features indicating that they may have the highest emission levels of the engines in the engine family as follows:

(A) The Administrator shall select one emission-data engine first based on the largest displacement within the engine family. Then within the largest displacement the Administrator shall select, in the order listed, highest fuel flow at the speed of maximum rated torque, the engine with the most advanced spark timing, no EGR or lowest EGR flow, and no air pump or lowest actual flow air pump.

(B) The Administrator shall select one additional engine, from within

each engine family. The engine selected shall be the engine expected to exhibit the highest emissions of those engines remaining in the engine family. If all engines within the engine family are similar the Administrator may waive the requirements of this paragraph.

(iv) If the engines selected in accordance with paragraph (b)(2) (ii) and (iii) of this section do not represent each engine displacement-exhaust emission control system combination, then one engine of each engine displacement-exhaust emission control system combination not represented shall be selected by the Administrator.

(v) Within an engine family/displacement/control system combination, the manufacturer may alter any emission-data engine (or other engine including current or previous model year emission-data engines and development engines provided they meet the emission-data engines' protocol) to represent more than one selection under paragraph (b)(2)(iii) of this section.

(3) *Diesel heavy-duty emission-data engines.* Paragraph (b)(3) of this section applies to diesel heavy-duty emission-data vehicles.

(i) Engines will be chosen to be run for emission data based upon engine family groupings. Within each engine family, the requirements of this paragraph must be met.

(ii) Engines of each engine family will be divided into groups based upon their exhaust emission control systems. One engine of each system combination shall be run for smoke emission data and gaseous emission data. Either the complete gaseous emission test or the complete smoke test may be conducted first. Within each combination, the engine that features the highest fuel feed per stroke, primarily at the speed of maximum rated torque and secondarily at rated speed, will usually be selected. If there are military engines with higher fuel rates than other engines in the same engine system combinations, then one military engine shall also be selected. The engine with the highest fuel feed per stroke will usually be selected.

(iii) The Administrator may select a maximum of one additional engine

within each engine-system combination based upon features indicating that it may have the highest emission levels of the engines of that combination. In selecting this engine, the Administrator will consider such features as the injection system, fuel system, compression ratio, rated speed, rated horsepower, peak torque speed, and peak torque.

(iv) Within an engine family control system combination, the manufacturer may alter any emission-data engine (or other engine including current or previous model year emission-data engines and development engines provided they meet the emission-data engines' protocol) to represent more than one selection under paragraph (b)(3)(ii) and (iii) of this section.

(c) *Durability data*—(1) *Light-duty vehicle durability-data vehicles*. Paragraph (c)(1) of this section applies to light-duty vehicle durability-data vehicles.

(i) A durability-data vehicle will be selected by the Administrator to represent each engine-system combination. The vehicle selected shall be of the engine displacement with the largest projected sales volume of vehicles with that control-system combination in that engine family and will be designated by the Administration as to transmission type, fuel system, inertia weight class, and test weight.

(ii) A manufacturer may elect to operate and test additional vehicles to represent any engine-system combination. The additional vehicles must be of the same engine displacement, transmission type, fuel system and inertia weight class as the vehicle selected for that engine-system combination in accordance with the provisions of paragraph (c)(1)(i) of this section. Notice of an intent to operate and test additional vehicles shall be given to the Administrator no later than 30 days following notification of the test fleet selection.

(2) *Light-duty trucks*. Paragraph (c)(2) of this section applies to vehicles, engines, subsystems, or components used to establish exhaust emission deterioration factors for light-duty trucks.

(i) The manufacturer shall select the vehicles, engines, subsystems, or components to be used to determine exhaust emission deterioration factors

for each engine-family control system combination. Whether vehicles, engines, subsystems, or components are used, they shall be selected so that their emissions deterioration characteristics may be expected to represent those of in-use vehicles, based on good engineering judgment.

(ii) [Reserved]

(3) *Heavy-duty engines*. Paragraph (c)(3) of this section applies to engines, subsystems, or components used to establish exhaust emission deterioration factors for heavy-duty engines.

(i) The manufacturer shall select the engines, subsystems, or components to be used to determine exhaust emission deterioration factors for each engine-family control system combination. Whether engines, subsystems, or components are used, they shall be selected so that their emissions deterioration characteristics may be expected to represent those of in-use engines, based on good engineering judgment.

(ii) [Reserved]

(d) For purposes of testing under §86.092-26 (a)(9) or (b)(11), the Administrator may require additional emission-data vehicles (or emission-data engines) and durability-data vehicles (light-duty vehicles only) identical in all material respects to vehicles (or engines) selected in accordance with paragraphs (b) and (c) of this section, *Provided* That the number of vehicles (or engines) selected shall not increase the size of either the emission-data fleet or the durability-data fleet by more than 20 percent or one vehicle (or engine), whichever is greater.

(e)(1) [Reserved]

(2) Any manufacturer may request to certify engine families with combined total sales of fewer than 10,000 light-duty vehicles, light-duty trucks, heavy-duty vehicles, and heavy-duty engines utilizing the procedures contained in §86.092-14 of this subpart for emission-data vehicle selection and determination of deterioration factors. The deterioration factors shall be applied only to entire engine families.

(f) In lieu of testing an emission-data or durability-data vehicle (or engine) selected under paragraph (b) or (c) of this section, and submitting data therefore, a manufacturer may, with

the prior written approval of the Administrator, submit exhaust emission data and/or fuel evaporative emission data, as applicable on a similar vehicle (or engine) for which certification has previously been obtained or for which all applicable data required under § 86.091-23 has previously been submitted.

(g)(1) This paragraph applies to light-duty vehicles and light-duty trucks, but does not apply to the production vehicles selected under paragraph (h) of this section.

(2)(i) Where it is expected that more than 33 percent of a carline, within an engine-system combination, may be equipped with an item (whether that item is standard equipment or an option), the full estimated weight of that item shall be included in the curb weight computation of each vehicle available with that item in that carline, within that engine-system combination.

(ii) Where it is expected that 33 percent or less of the carline, within an engine-system combination, will be equipped with an item (whether that item is standard equipment or an option), no weight for that item will be added in computing the curb weight for any vehicle in that carline, within that engine-system combination, unless that item is standard equipment on the vehicle.

(iii) In the case of mutually exclusive options, only the weight of the heavier option will be added in computing the curb weight.

(iv) Optional equipment weighing less than three pounds per item need not be considered.

(3)(i) Where it is expected that more than 33 percent of a carline, within an engine-system combination, will be equipped with an item (whether that item is standard equipment or an option) that can reasonably be expected to influence emissions, then such items shall actually be installed (unless excluded under paragraph (g)(3)(ii) of this section) on all emission-data and durability-data vehicles of that carline, within that engine-system combination, on which the items are intended to be offered in production. Items that can reasonably be expected to influence emissions are: air conditioning,

power steering, power brakes, and other items determined by the Administrator.

(ii) If the manufacturer determines by test data or engineering evaluation that the actual installation of the optional equipment required by paragraph (g)(3)(i) of this section does not affect the emissions or fuel economy values, the optional equipment need not be installed on the test vehicle.

(iii) The weight of the options shall be included in the design curb weight and also be represented in the weight of the test vehicles.

(iv) The engineering evaluation, including any test data, used to support the deletion of optional equipment from test vehicles, shall be maintained by the manufacturer and shall be made available to the Administrator upon request.

(4) Where it is expected that 33 percent or less of a carline within an engine-system combination will be equipped with an item (whether that item is standard equipment or an option) that can reasonably be expected to influence emissions, that item shall not be installed on any emission-data vehicle or durability-data vehicle of that carline, within that engine-system combination, unless that item is standard equipment on that vehicle or specifically required by the Administrator.

(h) *Alternative Durability Program durability-data vehicles.* This section applies to light-duty vehicle and light-duty truck durability-data vehicles selected under the Alternative Durability Program described in § 86.085-13.

(1) To update the durability data to be used to determine a deterioration factor for each engine family group, the Administrator will select durability-data vehicles from the manufacturer's production line. Production vehicles will be selected from each model year's production for those vehicles certified using the Alternative Durability Program procedures.

(i) The Administrator shall select the production durability-data vehicle designs from the designs that the manufacturer offers for sale. For each model year and for each engine family group, the Administrator may select production durability-data vehicle designs of

equal number to the number of engine families within the engine family group, up to a maximum of three vehicles.

(ii) The production durability-data vehicles representing the designs selected in paragraph (h)(1)(i) of this section will be randomly selected from the manufacturer's production. The Administrator will make these random selections unless the manufacturer (with prior approval of the Administrator) elects to make the random selections.

(iii) The manufacturer may select additional production durability-data vehicle designs from within the engine family group. The production durability-data vehicles representing these designs shall be randomly selected from the manufacturer's production in accordance with paragraph (h)(1)(ii) of this section.

(iv) For each production durability-data vehicle selected under paragraph (h)(1) of this section, the manufacturer shall provide to the Administrator (before the vehicle is tested or begins service accumulation) the vehicle identification number. Before the vehicle begins service accumulation the manufacturer shall also provide the Administrator with a description of the durability-data vehicle as specified by the Administrator.

(v) In lieu of testing a production durability-data vehicle selected under paragraph (h)(1) of this section, and submitting data therefrom, a manufacturer may, with the prior written approval of the Administrator, submit exhaust emission data from a production vehicle of the same configuration for which all applicable data has previously been submitted.

(2) If, within an existing engine family group, a manufacturer requests to certify vehicles of a new design, engine family, emission control system, or with any other durability-related design difference, the Administrator will determine if the existing engine family group deterioration factor is appropriate for the new design. If the Administrator cannot make this determination or deems the deterioration factor not appropriate, the Administrator shall select preproduction durability-data vehicles under the provisions of

paragraph (c) of this section. If vehicles are then certified using the new design, the Administrator may select production vehicles with the new design under the provisions of paragraph (h)(1) of this section.

(3) If a manufacturer requests to certify vehicles of a new design that the Administrator determines are a new engine family group, the Administrator shall select preproduction durability-data vehicles under the provisions of paragraph (c) of this section. If vehicles are then certified using the new design, the Administrator may select production vehicles of that design under the provisions of paragraph (h)(1) of this section.

[55 FR 7190, Feb. 28, 1990, as amended at 55 FR 30626, July 26, 1990]

§ 86.092-26 Mileage and service accumulation; emission measurements.

(a)(1) Paragraph (a) of this section applies to light-duty vehicles.

(2) The procedure for mileage accumulation will be the Durability Driving Schedule as specified in appendix IV to this part. A modified procedure may also be used if approved in advance by the Administrator. Except with the advance approval of the Administrator, all vehicles will accumulate mileage at a measured curb weight which is within 100 pounds of the estimated curb weight. If the loaded vehicle weight is within 100 pounds of being included in the next higher inertia weight class as specified in § 86.129, the manufacturer may elect to conduct the respect emission tests at higher loaded vehicle weight.

(3) *Emission-data vehicles.* Unless otherwise provided for in § 86.091-23(a), emission-data vehicles shall be operated and tested as follows:

(i) *Otto-cycle.* (A) The manufacturer shall determine, for each engine family, the mileage at which the engine-system combination is stabilized for emission-data testing. The manufacturer shall maintain, and provide to the Administrator if requested, a record of the rationale used in making this determination. The manufacturer may elect to accumulate 4,000 miles on each test vehicle within an engine family without making a determination. The manufacturer must accumulate a