

data indicate that gaining access, removing, or exceeding is likely, paragraphs (e)(2)(i) and (ii) of this section shall not apply for that parameter.

(iv) In determining the adequacy of a physical limit, stop, seal, or other means used to inhibit adjustment of a parameter not covered by paragraph (e)(2)(i) or (ii) of this section, the Administrator will consider the likelihood that it will be circumvented, removed, or exceeded on in-use vehicles. In determining likelihood, the Administrator may consider such factors as, but not limited to, information contained in the preliminary application; surveillance information from similar in-use vehicles (or engines); the difficulty and cost of circumventing, removing, or exceeding the limit, stop, seal, or other means; damage to the vehicle (or engine) if an attempt is made to circumvent, remove, or exceed it and the need to replace parts following such attempt; and the effect of settings beyond the limit, stop, seal, or other means on vehicle (or engine) performance characteristics other than emission characteristics.

(3) The Administrator shall determine two physically adjustable ranges for each parameter subject to adjustment:

(i)(A) In the case of a parameter determined to be adequately inaccessible or sealed, the Administrator may include within the physically adjustable range applicable to testing under this subpart (certification testing) all settings within the production tolerance associated with the nominal setting for that parameter, as specified by the manufacturer in the preliminary application for certification; or

(B) In the case of other parameters, the Administrator shall include within this range all settings within physical limits or stops determined to be adequate restraints on adjustability. The Administrator may also include the production tolerances on the location of these limits or stops when determining the physically adjustable range.

(ii)(A) In the case of a parameter determined to be adequately inaccessible or sealed, the Administrator shall include within the physically adjustable range applicable to testing under sub-

parts G or K (Selective Enforcement Audit and Production Compliance Audit) only the actual settings to which the parameter is adjusted during production; or

(B) In the case of other parameters, the Administrator shall include within this range all settings within physical limits or stops determined to be adequate restraints on adjustability, as they are actually located on the test vehicle (or engine).

(f) *Submittal of advance information.*

(1) If the manufacturer submits the information specified in § 86.094-21(b)(1)(ii) in advance of its full preliminary application for certification, the Administrator shall review the information and make the determinations required in paragraph (e) of this section within 90 days of the manufacturer's submittal.

(2) The 90-day decision period is exclusive of the elapsed time during which EPA may request additional information from manufacturers regarding an adjustable parameter and the receipt of the manufacturers' response(s).

(g) Within 30 days following receipt of notification of the Administrator's determinations made under paragraph (e) of this section, the manufacturer may request a hearing on the Administrator's determinations. The request shall be in writing, signed by an authorized representative of the manufacturer, and shall include a statement specifying the manufacturer's objections to the Administrator's determinations, and data in support of such objections. If, after review of the request and supporting data, the Administrator finds that the request raises a substantial factual issue, he shall provide the manufacturer a hearing in accordance with § 86.078-6 with respect to such issue.

[48 FR 4010, Jan. 12, 1993]

**§ 86.094-23 Required data.**

(a) The manufacturer shall perform the tests required by the applicable test procedures and submit to the Administrator the information described in paragraphs (b) through (l) of this

section, provided, however, that if requested by the manufacturer, the Administrator may waive any requirement of this section for testing of vehicle (or engine) for which emission data are available or will be made available under the provisions of § 86.091-29.

(b) *Durability data.* (1)(i) The manufacturer shall submit exhaust emission durability data on such light-duty vehicles tested in accordance with applicable test procedures and in such numbers as specified, which will show the performance of the systems installed on or incorporated in the vehicle for extended mileage, as well as a record of all pertinent maintenance performed on the test vehicles.

(ii) The manufacturer shall submit exhaust emission deterioration factors for light-duty trucks and heavy-duty engines and all test data that are derived from the testing described under § 86.094-21(b)(5)(i)(A), as well as a record of all pertinent maintenance. Such testing shall be designed and conducted in accordance with good engineering practice to assure that the engines covered by a certificate issued under § 86.094-30 will meet each emission standard (or family emission limit, as appropriate) in § 86.094-9, § 86.091-10, or § 86.094-11 as appropriate, in actual use for the useful life applicable to that standard.

(2) For light-duty vehicles and light-duty trucks, the manufacturer shall submit evaporative emission deterioration factors for each evaporative emission family-evaporative emission control system combination and all test data that are derived from testing described under § 86.094-21(b)(4)(i) designed and conducted in accordance with good engineering practice to assure that the vehicles covered by a certificate issued under § 86.094-30 will meet the evaporative emission standards in § 86.094-8 or § 86.094-9, as appropriate, for the useful life of the vehicle.

(3) For heavy-duty vehicles equipped with gasoline-fueled, natural gas-fueled, liquefied petroleum gas-fueled or methanol-fueled engines, evaporative emission deterioration factors for each evaporative emission family-evaporative emission control system combination identified in accordance with § 86.091-21(b)(4)(ii). Furthermore, a

statement that the test procedure(s) used to derive the deterioration factors includes, but need not be limited to, a consideration of the ambient effects of ozone and temperature fluctuations and the service accumulation effects of vibration, time, vapor saturation and purge cycling. The deterioration factor test procedure shall be designed and conducted in accordance with good engineering practice to assure that the vehicles covered by a certificate issued under § 86.091-30 will meet the evaporative emission standards in § 86.091-10 and § 86.091-11 in actual use for the useful life of the engine. Furthermore, a statement that a description of the test procedure, as well as all data, analyses and evaluations, is available to the Administrator upon request.

(4)(i) For heavy-duty vehicles with a Gross Vehicle Weight Rating of up to 26,000 pounds and equipped with gasoline-fueled, natural gas-fueled, liquefied petroleum gas-fueled or methanol-fueled engines, a written statement to the Administrator certifying that the manufacturer's vehicles meet the standards of § 86.091-10 or § 86.091-11 (as applicable) as determined by the provisions of § 86.091-28. Furthermore, a written statement to the Administrator that all data, analyses, test procedures, evaluations and other documents, on which the above statement is based, are available to the Administrator upon request.

(ii) For heavy-duty vehicles with a Gross Vehicle Weight Rating of greater than 26,000 pounds and equipped with gasoline-fueled, natural gas-fueled, liquefied petroleum gas-fueled or methanol-fueled engines, a written statement to the Administrator certifying that the manufacturer's evaporative emission control systems are designed, using good engineering practice, to meet the standards of § 86.091-10 or § 86.091-11 (as applicable) as determined by the provisions of § 86.091-28. Furthermore, a written statement to the Administrator that all data, analyses, test procedures, evaluations and other documents, on which the above statement is based, are available to the Administrator upon request.

(c) *Emission data.* (1) Emission data, including in the case of methanol fuel,

methanol, formaldehyde and total hydrocarbon equivalent, exhaust methane data in the case of vehicles meeting a non-methane hydrocarbon standard on such vehicles tested in accordance with applicable test procedures and in such numbers as specified. These data shall include zero-mile data, if generated, and emission data generated for certification as required under § 86.090-26(a)(3)(i) or § 86.090-26(a)(3)(ii). In lieu of providing emission data the Administrator may, on request of the manufacturer, allow the manufacturer to demonstrate (on the basis of previous emission tests, development tests or other information) that the engine will conform with certain applicable emission standards of § 86.094-8 or § 86.094-9. Standards eligible for such manufacturer requests are those for idle CO emissions, smoke emissions, or particulate emissions from methanol-fueled, natural gas-fueled and liquefied petroleum gas-fueled diesel-cycle certification vehicles, on evaporative emissions or refueling emissions from natural gas-fueled or liquefied petroleum gas-fueled vehicles (light-duty and heavy-duty), and those for particulate emissions from model year 1994 and later gasoline-fueled, methanol-fueled, natural gas-fueled or liquefied petroleum gas-fueled Otto-cycle certification vehicles that are not certified to the Tier 0 standards of § 86.094-9 (a)(1)(i), (a)(1)(ii), or § 86.094-8(a)(1)(i). Also eligible for such requests are standards for total hydrocarbon emissions from model year 1994 and later certification vehicles that are not certified to the Tier 0 standards of § 86.094-9 (a)(1)(i), (a)(1)(ii) or § 86.094-8(a)(1)(i). By separate request, including appropriate supporting test data, the manufacturer may request that the Administrator also waive the requirement to measure particulate emissions when conducting Selective Enforcement Audit testing of Otto-cycle vehicles, or the requirement to measure evaporative emissions when conducting Selective Enforcement Audit testing of natural gas or liquefied petroleum gas-fueled vehicles.

(2) *Certification engines.* (i) Emission data on such engines tested in accordance with applicable emission test procedures of this subpart and in such

numbers as specified. These data shall include zero-hour data, if generated, and emission data generated for certification as required under § 86.090-26(c)(4). In lieu of providing emission data on idle CO emissions, smoke emissions or particulate emissions from methanol-fueled, natural gas-fueled or liquefied petroleum gas-fueled diesel certification engines, or on CO emissions from petroleum-fueled, natural gas-fueled, liquefied petroleum gas-fueled, or methanol-fueled diesel certification engines the Administrator may, on request of the manufacturer, allow the manufacturer to demonstrate (on the basis of previous emission tests, development tests or other information) that the engine will conform with the applicable emission standards of § 86.091-11, or § 86.094-11.

(ii) For heavy-duty diesel engines, a manufacturer may submit hot-start data only, in accordance with subpart N of this part, when making application for certification. However, for conformity Selective Enforcement Audit and recall testing by the Agency, both the cold-start and hot-start test data, as specified in subpart N of this part, will be included in the official results.

(d) The manufacturer shall submit a statement that the vehicles (or engines) for which certification is requested conform to the requirements in § 86.084-5(b), and that the descriptions of tests performed to ascertain compliance with the general standards in § 86.084-5(b), and that the data derived from such tests are available to the Administrator upon request.

(e)(1) The manufacturer shall submit a statement that the test vehicles (or test engines) for which data are submitted to demonstrate compliance with the applicable standards (or family emission limits, as appropriate) of this subpart are in all material respects as described in the manufacturer's application for certification, that they have been tested in accordance with the applicable test procedures utilizing the fuels and equipment described in the application for certification, and that on the basis of such tests the vehicles (or engines) conform to the requirements of this part. If such statements cannot be made with

respect to any vehicle (or engine) tested, the vehicle (or engine) shall be identified, and all pertinent data relating thereto shall be supplied to the Administrator. If, on the basis of the data supplied and any additional data as required by the Administrator, the Administrator determines that the test vehicles (or test engine) was not as described in the application for certification or was not tested in accordance with the applicable test procedures utilizing the fuels and equipment as described in the application for certification, the Administrator may make the determination that the vehicle (or engine) does not meet the applicable standards (or family emission limits, as appropriate). The provisions of §86.094-30(b) shall then be followed.

(2) For evaporative emission durability, or light-duty truck or heavy-duty engine exhaust emission durability, the manufacturer shall submit a statement of compliance with paragraph (b)(1)(ii), (b)(2), or (b)(3) of this section, as applicable.

(f) Additionally, manufacturers participating in the particulate averaging program for diesel light-duty vehicles and diesel light-duty trucks shall submit:

(1) In the application for certification, a statement that the vehicles for which certification is requested will not, to the best of the manufacturer's belief, when included in the manufacturer's production-weighted average emission level, cause the applicable particulate standard(s) to be exceeded; and

(2) No longer than 90 days after the end of a given model year of production of engine families included in one of the diesel particulate averaging programs, the number of vehicles produced in each engine family at each certified particulate FEL, along with the resulting production-weighted average particulate emission level.

(g) Additionally, manufacturers participating in the NO<sub>x</sub> averaging program for light-duty trucks shall submit:

(1) In the application for certification, a statement that the vehicles for which certification is required will not, to the best of the manufacturer's belief, when included in the manufac-

turer's production-weighted average emission level, cause the applicable NO<sub>x</sub> standard(s) to be exceeded; and

(2) No longer than 90 days after the end of a given model year of production of engine families included in the NO<sub>x</sub> averaging program, the number of vehicles produced in each engine family at each certified NO<sub>x</sub> emission level.

(h) Additionally, manufacturers participating in any of the NO<sub>x</sub> and/or particulate averaging, trading, or banking programs for heavy-duty engines shall submit for each participating family the items listed in paragraphs (h)(1) through (3) of this section.

(1) *Application for certification.* (i) The application for certification will include 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<sub>x</sub> or particulate standard(s) to be exceeded.

(ii) The application for certification will also include the type (NO<sub>x</sub> 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 §86.094-15. 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 §86.094-15. The application must project that each engine family will be in compliance with the applicable NO<sub>x</sub> and/or particulate emission standards based on the engine mass emissions, and credits from averaging, trading and banking.

(2) [Reserved]

(3) *End-of-year report.* The manufacturer shall submit end-of-year reports for each engine family participating in any of the averaging, trading, or banking programs, as described in paragraphs (h)(3) (i) through (iv) of this section.

(i) These reports shall be submitted within 90 days of the end of the model year to: Director, Manufacturers Operations Division (EN-340F), 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 § 86.094-15, the resulting type (NO<sub>x</sub> 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 § 86.094-15 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 (42 U.S.C. 7522(a)(1)) for each such vehicle and engine.

(j) Failure by a manufacturer generating credits for deposit only in either the HDE NO<sub>x</sub> 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 in paragraphs (f) through (j) of this section.

(l) Additionally, manufacturers certifying vehicles shall submit for each model year 1994 through 1997 light-duty vehicle and light light-duty truck engine family and each model year 1996 through 1998 heavy light-duty truck engine family the information listed in paragraphs (l) (1) and (2) of this section.

(1) *Application for certification.* In the application for certification, the manufacturer shall submit the projected sales volume of engine families certifying to the respective standards, and the in-use standards that each engine family will meet. Volume projected to be produced for U.S. sale may be used in lieu of projected U.S. sales.

(2) *End-of-year reports for each engine family.* (i) These end-of-year reports shall be submitted within 90 days of the end of the model year to: Director, Manufacturers Operations Division (EN-340F), U.S. Environmental Protection Agency, 1200 Pennsylvania Ave., NW., Washington, DC 20460.

(ii) These reports shall indicate the model year, engine family, and the actual U.S. sales volume. The manufacturer may petition the Administrator to allow volume produced for U.S. sale to be used in lieu of U.S. sales. Such petition shall be submitted within 30 days of the end of the model year to the Manufacturers Operations Division. For the petition to be granted, the manufacturer must establish to the satisfaction of the Administrator that production volume is functionally equivalent to sales volume.

(iii) The U.S. sales volume for end-of-year reports shall be based on the location of the point of sale to a dealer, distributor, fleet operator, broker, or any other entity which comprises the point of first sale.

(iv) Failure by a manufacturer to submit the end-of-year report within

the specified time may result in certificate(s) for the engine family(ies) certified to Tier 0 certification standards being voided ab initio plus any applicable civil penalties for failure to submit the required information to the Agency.

(v) The information shall be organized in such a way as to allow the Administrator to determine compliance with the Tier 1 standards implementation schedules of §§ 86.094-8 and 86.094-9, and the Tier 1 and Tier 1<sub>i</sub> implementation schedules of §§ 86.708-94 and 86.709-94.

[58 FR 4012, Jan. 12, 1993, as amended at 58 FR 33208, June 16, 1993; 58 FR 66294, Dec. 20, 1993; 59 FR 14110, Mar. 25, 1994; 59 FR 48498, Sept. 21, 1994]

#### § 86.094-24 Test vehicles and engines.

(a) *General.* Paragraph (a) of this section applies to the grouping of vehicles or engines into families.

(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 respects listed in paragraphs (a)(2)(i) through (x) of this section.

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

(ii)-(iii) [Reserved]

(iv) The cylinder block configuration (air-cooled or water-cooled: L-6, 90 deg., 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 features of each engine listed in paragraphs (a)(3)(i) (A) through (G) of this section.

(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 sizes 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.

(iii) Engines identical in all of the respects listed in paragraphs (a)(2) and (a)(3)(i) of this section may be further divided into different engine families if some of the engines are expected to be sold as clean-fuel vehicles under 40 CFR part 88, and if the manufacturer chooses to certify the engines to both the clean-fuel vehicle standards of 40 CFR part 88 and the general standards of this part 86. One engine family shall include engines that are intended for general use. For this engine family, only the provisions of this part 86 shall apply. The second engine family shall include all engines that are intended to be used in clean-fuel vehicles. For this engine family, the provisions of both this part 86 and 40 CFR part 88 shall apply. The manufacturer may submit one set of data to certify both engine families.

(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