

board communications protocol. All emission related messages sent to the scan tool over a J1850 data link shall use the Cyclic Redundancy Check and the three byte header, and shall not use inter-byte separation or check-sums.

(2) Basic diagnostic data (as specified in § 86.094-17(f)) shall be provided in the format and units in SAE J1979 "E/E Diagnostic Test Modes," (DEC91). Basic bi-directional diagnostic capability shall be available and be consistent with SAE J1979 messages.

(3) Fault codes shall be consistent with SAE J2012 "Recommended Format and Messages for Diagnostic Trouble Code Definitions," (MAR92) Part C.

(4) The connection interface between the OBD system and test equipment and diagnostic tools shall meet the functional requirements of SAE J1962 "Diagnostic Connector," (JUN92).

(5) Limitation of Access—Any limitation of access to the diagnostic system shall be consistent with § 86.094-18. Access to vehicle calibration data, vehicle odometer, and keyless entry codes can be limited under the provisions of § 86.094.

(i) Upon application by the manufacturer, the Administrator may either waive the requirements of this section for specific components of any class or category of light-duty vehicles or light-duty trucks for model years 1994 or 1995 (or both), or through the 1999 model year, the Administrator may accept an OBD system as compliant even though specific requirements are not fully met. Such waivers or compliances without meeting specific requirements will be granted only if compliance would be infeasible or unreasonable considering such factors as, but not limited to, technical feasibility, lead time and production cycles including phase-in or phase-out of engines or vehicle designs and programmed upgrades of computers, and if any unmet requirements are not carried over from the previous model year except where unreasonable hardware modifications would be necessary to correct the non-compliance, and the manufacturer has demonstrated an acceptable level of effort toward compliance as determined by the Administrator. For alternate fueled vehicles (i.e. natural gas, lique-

fied petroleum gas, or methanol), beginning with the model year for which alternate fuel emission standards are applicable and extending through the 1999 model year, manufacturers may request the Administrator to waive specific monitoring requirements of this section for which monitoring may not be reliable with respect to the use of the alternate fuel. At a minimum, all vehicles covered by this section, including those receiving a waiver as described in this paragraph, shall be equipped with an OBD system meeting either the California OBD I requirements, or some acceptable portion of the California OBD II or federal OBD requirements as specified in this section, except that for the 1994 and 1995 model years EPA may grant a waiver to a system less than OBD I giving consideration to such factors as manufacturer projections of very low sales volume for an engine family (e.g., 5000 or less), scheduled phase-out of significant engine technology with the 1994 or 1995 model years for that engine family, and whether or not the engine, or any similar engine within the manufacturer's product line, has ever been equipped with an OBD I or similar OBD system.

(j) Demonstration of compliance with California OBD II requirements (Title 13 California Code section 1968.1) as modified pursuant to California Mail Out #95-34 (September 26, 1995), shall satisfy the requirements of this section through the 1998 model year except that compliance with Title 13 California Code section 1968.1(d), pertaining to tampering protection, is not required to satisfy the requirements of this section.

[58 FR 9485, Feb. 19, 1993, as amended at 59 FR 48497, Sept. 21, 1994; 59 FR 15247, Mar. 23, 1995; 60 FR 37945, July 25, 1995; 60 FR 39266, Aug. 2, 1995; 61 FR 45903, Aug. 30, 1996; 63 FR 7719, Feb. 17, 1998]

**§ 86.094-21 Application for certification.**

(a) A separate application for a certificate of conformity shall be made for each set of standards (or family emission limits, as appropriate) and each class of new motor vehicles or new

motor vehicle engines. Such application shall be made to the Administrator by the manufacturer and shall be updated and corrected by amendment.

(b) The application shall be in writing, signed by an authorized representative of the manufacturer, and shall include the following:

(1)(i) Identification and description of the vehicles (or engines) covered by the application and a description of their engine (vehicles only), emission control system, and fuel system components. This description will include:

(A) A detailed description of each Auxiliary Emission Control Device (AECD) to be installed in or on any vehicle (or engine) covered by the application;

(B) A detailed justification of each AECD (described in (b)(1)(i)(A) of this section) which results in a reduction in effectiveness of the emission control system. Such a justification may be disapproved by consideration of currently available technology, whereupon the application for certification may be disapproved under § 86.094-22(b) for the incorporation of a defeat device;

(C) The manufacturer must submit a Statement of Compliance in the application for certification which attests to the fact that they have assured themselves that the engine family is designed to be within the intermediate temperature cold testing defeat device guidance as described in § 86.094-16.

(1) This Statement of Compliance will be supported by a brief description of the vehicle's technological method of controlling CO emissions at intermediate temperatures.

(2) The manufacturer will determine a method (e.g., a test program, an engineering evaluation) which is adequate to support their Statement of Compliance. The manufacturer will support this Statement with a brief summary of the chosen method. Further details must be made available upon the Administrator's request.

(ii)(A) The manufacturer shall provide to the Administrator in the application for certification:

(1) A list of those parameters which are physically capable of being adjusted (including those adjustable parameters for which access is difficult

and that, if adjusted to settings other than the manufacturer's recommended setting, may affect emissions;

(2) A specification of the manufacturer's intended physically adjustable range of each such parameter, and the production tolerances of the limits or stops used to establish the physically adjustable range;

(3) A description of the limits or stops used to establish the manufacturer's intended physically adjustable range of each adjustable parameter, or any other means used to inhibit adjustment;

(4) The nominal or recommended setting, and the associated production tolerances, for each such parameter.

(B) The manufacturer may provide, in the application for certification, information relating to why certain parameters are not expected to be adjusted in actual use and to why the physical limits or stops used to establish the physically adjustable range of each parameter, or any other means used to inhibit adjustment, are effective in preventing adjustment of parameters on in-use vehicles to settings outside the manufacturer's intended physically adjustable ranges. This may include results of any tests to determine the difficulty of gaining access to an adjustment or exceeding a limit as intended or recommended by the manufacturer.

(C) The Administrator may require to be provided detailed drawings and descriptions of the various emission related components, and/or hardware samples of such components, for the purpose of making his determination of which vehicle or engine parameter will be subject to adjustment for new certification and Selective Enforcement Audit testing and of the physically adjustable range for each such vehicle or engine parameter.

(2) Projected U.S. sales data sufficient to enable the Administrator to select a test fleet representative of the vehicles (or engines) for which certification is requested, and, for model year 1994 through 1995 light-duty vehicles and light light-duty trucks and model year 1996 heavy light-duty trucks, data sufficient to determine projected compliance with the Tier 1 standards implementation schedules of §§ 86.094-8

and 86.094-9. The data shall also include the altitude of intended sale for model year 1994 light-duty trucks certified to the Tier 0 standards of § 86.094-9. Volume projected to be produced for U.S. sale may be used in lieu of projected U.S. sales.

(3) A description of the test equipment and fuel proposed to be used.

(4)(i) For light-duty vehicles and light-duty trucks, a description of the test procedures to be used to establish the evaporative emission deterioration factors required to be determined and supplied in § 86.094-23(b)(2).

(ii) For heavy-duty vehicles equipped with gasoline-fueled or methanol-fueled engines, the Administrator does not assume that each evaporative emission family-evaporative emission control system combination will deteriorate in a unique manner during the useful life of the vehicle. The manufacturer shall therefore identify those evaporative emission deterioration factors which shall be applied to the various evaporative emission family-evaporative emission control system combinations which are expected to exhibit similar deterioration characteristics during the useful life of the vehicle.

(5)(i)(A) A description of the test procedures to be used to establish the durability data or the exhaust emission deterioration factors required to be determined and supplied in § 86.094-23(b)(1).

(B) For each light-duty truck engine family provided an optional useful life period under the provisions of paragraph (f) of this section, and for each heavy-duty engine family, a statement of the useful life.

(C) For engine families provided an alternative useful-life period under paragraph (f) of this section, a statement of that alternative period and a brief synopsis of the justification.

(ii) For heavy-duty diesel engine families, a statement of the primary intended service class (light, medium, or heavy) and an explanation as to why that service class was selected. Each diesel engine family shall be certified under one primary intended service class only. After reviewing the guidance in § 86.090-2, the class shall be determined on the basis of which class

best represents the majority of the sales of that engine family.

(iii)(A) For each light-duty vehicle engine family, each light-duty truck engine family, and each heavy-duty engine family, a statement of recommended maintenance and procedures necessary to assure that the vehicles (or engines) covered by a certificate of conformity in operation conform to the regulations, and a description of the program for training of personnel for such maintenance, and the equipment required.

(B) A description of vehicle adjustments or modifications necessary, if any, to assure that light-duty vehicles and light-duty trucks covered by a certificate of conformity conform to the regulations while being operated at any altitude locations, and a statement of the altitude at which the adjustments or modifications apply.

(iv) At the option of the manufacturer, the proposed composition of the emission data test fleet or (where applicable) the durability data test fleet.

(6) *Participation in averaging programs*—(i) *Particulate averaging*. (A) If the manufacturer elects to participate in the particulate averaging program for diesel light-duty vehicles and/or diesel light-duty trucks or the particulate averaging program for heavy-duty diesel engines, the application must list the family particulate emission limit and the projected U.S. production volume of the family for the model year.

(B) The manufacturer shall choose the level of the family particulate emission limits, accurate to hundredth of a gram per mile or hundredth of a gram per brake horsepowerhour for heavy-duty engines.

(C) The manufacturer may at any time during production elect to change the level of any family particulate emission limit(s) by submitting the new limit(s) to the Administrator and by demonstrating compliance with the limit(s) as described in §§ 86.090-2 and 86.094-28(b)(5)(i).

(ii) *NO<sub>x</sub> averaging*. (A) If the manufacturer elects to participate in the NO<sub>x</sub> averaging program for light-duty trucks or the NO<sub>x</sub> averaging program for heavy-duty engines, the application must list the family NO<sub>x</sub> emission

limit and the projected U.S. production volume of the family for the model year.

(B) The manufacturer shall choose the level of the family NO<sub>x</sub> emission limits, accurate to one-tenth of a gram per mile or to one-tenth of a gram per brake horsepower-hour for heavy-duty engines.

(C) The manufacturer may at any time during production elect to change the level of any family NO<sub>x</sub> emission limit(s) by submitting the new limits to the Administrator and by demonstrating compliance with the limit(s) as described in §§ 86.088-2 and 86.094-28(b)(5)(ii).

(7)(i) For Otto-cycle heavy-duty engines, the application must state whether the engine family is being certified for use in all vehicles regardless of their Gross Vehicle Weight Rating (see § 86.091-10 (a)(1)(i) and (a)(3)(i)), or only for use in vehicles with a Gross Vehicle Weight Rating greater than 14,000 pounds.

(ii) If the engine family is being certified for use in all vehicles and is being certified to the emission standards applicable to Otto-cycle engines for use only in vehicles with a Gross Vehicle Weight Rating over 14,000 pounds under the provisions of § 86.091-10(a)(3), then the application must also attest that the engine family, together with all other engine families being certified under the provisions of § 86.091-10(a)(3), represent no more than 5 percent of model year sales of the manufacturer of all Otto-cycle heavy-duty engines for use in vehicles with Gross Vehicle Weight Ratings of up to 14,000 pounds.

(8) For each light-duty vehicle or light-duty truck engine family, the exhaust emission standards (or family emission limits, if applicable) to which the engine family is to be certified, and the corresponding exhaust emission standards (or family emission limits, if applicable) which the engine family must meet in-use.

(c) Complete copies of the application and of any amendments thereto, and all notifications under §§ 86.079-32, 86.079-33, and 86.082-34 shall be submitted in such multiple copies as the Administrator may require.

(d) Incomplete light-duty trucks shall have a maximum completed curb weight and maximum completed frontal area specified by the manufacturer.

(e) For vehicles equipped with gasoline-fueled or methanol-fueled heavy-duty engines, the manufacturer shall specify a maximum nominal fuel tank capacity for each evaporative emission family-evaporative emission control system combination.

(f) Light-duty truck and heavy-duty engine manufacturers who believe that the useful life periods of § 86.094-2 are significantly unrepresentative for one or more engine families (either too long or too short), may petition the Administrator to provide an alternative useful-life period. This petition must include the full rationale behind the request together with any supporting data and other evidence. Based on this or other information the Administrator may assign an alternative useful-life period. Any petition should be submitted in a timely manner, to allow adequate time for a thorough evaluation. For model year 1994 and later light-duty trucks not subject to the Tier 0 standards of § 86.094-9, alternative useful life periods will be granted only for THC, THCE, and idle CO requirements.

(g) The manufacturer shall identify those families which will not comply with cold temperature carbon monoxide standards.

(h) For each engine family incorporating an emission control diagnostic system, the manufacturer shall submit the following information:

(1) Detailed written information fully describing the functional operation characteristics of the diagnostic system.

(2) The general method of detecting malfunctions for each emission-related powertrain component.

(i) [Reserved]

(j) For methanol-fueled vehicles, the manufacturer shall specify:

(1) Whether the vehicle is a flexible fuel vehicle or a dedicated vehicle (manufacturers must obtain advance approval from the Administrator to classify methanol-fueled vehicles that can use gasoline as dedicated vehicles); and

(2) The fuel(s) (*i.e.*, the percent methanol) for which the vehicle was designed.

[58 FR 4009, Jan. 12, 1993, as amended at 58 FR 9487, Feb. 19, 1993, 60 FR 34335, June 30, 1995; 63 FR 70694, Dec. 22, 1998]

**§ 86.094-22 Approval of application for certification; test fleet selections; determinations of parameters subject to adjustment for certification and Selective Enforcement Audit, adequacy of limits, and physically adjustable ranges.**

(a) After a review of the application for certification and any other information which the Administrator may require, the Administrator may approve the application and select a test fleet in accordance with § 86.094-24.

(b) *Disapproval of application.* (1) The Administrator may disapprove in whole or in part an application for certification for reasons including incompleteness, inaccuracy, inappropriate proposed mileage (or service) accumulation procedures, test equipment, or fuel; or incorporation of defeat devices in vehicles (or on engines) described by the application.

(2) The issuance of a certificate of conformity does not exempt the covered vehicles from further evaluation or testing for defeat device purposes as described in § 86.094-16.

(c) Where any part of an application is rejected, the Administrator shall notify the manufacturer in writing and set forth the reasons for such rejection. Within 30 days following receipt of such notification, the manufacturer may request a hearing on the Administrator's determination. 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 the 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.

(d) *Approval of test procedures.* (1) The Administrator does not approve the test procedures for establishing the evaporative emission deterioration fac-

tors for light-duty vehicles and light-duty trucks. The manufacturer shall submit the procedures as required in § 86.094-21(b)(4)(i) prior to the Administrator's selection of the test fleet under § 86.094-24(b)(1), and if such procedures will involve testing of durability data vehicles selected by the Administrator or elected by the manufacturer under § 86.094-24(c)(1), prior to initiation of such testing.

(2) *Light-duty trucks using the Standard Self-Approval durability Program and heavy-duty engines only.* The Administrator does not approve the test procedures for establishing exhaust emission deterioration factors for light-duty trucks using the Standard Self-Approval Durability Program described in § 86.094-13(f) nor for heavy-duty engines. The manufacturer shall submit these procedures and determinations as required in § 86.094-21(b)(5)(i) prior to determining the deterioration factors.

(3) Heavy-duty vehicles equipped with gasoline-fueled or methanol-fueled engines only. The Administrator does not approve the test procedures for establishing the evaporative emission deterioration factors. The test procedure will conform to the requirements in § 86.094-23(b)(3).

(e) *Parameter adjustment requirements.* When the Administrator selects emission data vehicles for the test fleet, he will at the same time determine those vehicle or engine parameters which will be subject to adjustment for certification, Selective Enforcement Audit and Production Compliance Audit testing, the adequacy of the limits, stops, seals, or other means used to inhibit adjustment, and the resulting physically adjustable ranges for each such parameter and will then notify the manufacturer of his determinations.

(1) *Determining parameters subject to adjustment.* (i) Except as noted in paragraph (e)(1)(iv) of this section, the Administrator may determine to be subject to adjustment the idle fuel-air mixture parameter on Otto-cycle vehicles (or engines) (carbureted or fuel-injected); the choke valve action parameter(s) on carbureted, Otto-cycle vehicles (or engines); or any parameter on any vehicle (or engine) (Otto-cycle or diesel) which is physically capable of